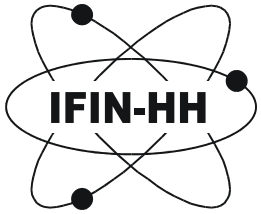

Horia Hulubei National Institute
of Physics and Nuclear Engineering

Annual Report
2005

Bucharest, ROMANIA
February 2006

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ANNUAL REPORT 2005

In 2005 we went on with our efforts to strengthen normal scientific life at the Institute, one of our main strategic goals.

The year 2005 marked the Institute's passage from survival to development.

The main characteristics of our activity in 2005 included:

- continued work in areas in which the Institute has earned a solid reputation;
- the onset of recovery in Institute finances, infrastructure, human resources, and public image; and
- the preparation of a strategy in line with the country's European integration goals.

Research personnel:

- 289 certified researchers
- 173 PhDs in sciences
- 1 member and 2 corresponding members of the Romanian Academy
- 29 scientists in charge of doctoral supervision
- 51 doctoral students

Results:

- 242 papers in ISI-rated journals
- 116 papers in non-ISI-rated journals
- 6 books or book sections
- 238 communications at meetings

Work on 198 Research & Development projects
Total revenues: RON 33,069,422

CONTENTS

1. GOALS*

1.1. Basic and applied research

1.1.1. Basic research (BR)

- ***Nuclear physics and astrophysics*** (NA): 1) nuclear structure; 2) nuclear fission and decay; 3) hadronic matter and nuclear interactions; 4) interdisciplinary research using accelerated particle beams and nuclear data; 5) nuclear astrophysics and cosmic rays.
- ***Particle physics and field theory*** (PF): 1) the Standard Model and its extensions; 2) generalized field theories; 3) quark-gluon plasma and charm particles; 4) neutrinos; 5) classical and quantum gravity.
- ***Atomic physics and condensed matter physics*** (AM): 1) statistical mechanics and complex physical systems; 2) many-body theory; 3) material and surface characterization; atomic and electronic processes; 4) neutron scattering experiments.
- ***Mathematical physics and information physics*** (MI): 1) field operators in curved spaces; 2) coherent state-type group representations; 3) supersymmetries, superstrings, and membranes; 4) complex dynamic structures in nonlinear systems, nonlinear optics, and photonics; 5) computational physics, information theory, and quantum correlations.
- ***Life and environmental physics*** (LE): 1) molecular and cellular radiation biology; 2) radionuclide transfer in ecosystems; 3) risk and vulnerability in the interaction between strategic infrastructures and environment.

1.1.2. Applied research (AR)

- ***Advanced detection systems*** (ADS): 1) detection modules for large accelerator experiments; 2) front-end electronics; 3) algorithms, program development, and testing.
- ***Nuclear safety, radiation protection, and radioactive products*** (SRP): 1) expert systems for management of nuclear emergencies; 2) equipment for radiation protection of environment and personnel, measurements, and characterizations; 3) radioactive products and radiopharmaceuticals.
- ***Radioecology and nuclear biomedicine*** (RNB): 1) environmental impact of manmade radioactivity; 2) environmental and life impact of decommissioning of the VVR-S nuclear reactor; 3) molecular bioconjugates with medical applications; 4) radiological biodosimetry and toxicology.
- ***Nuclear techniques and applications*** (NTA): 1) materials behavior in radiation fields; 2) nuclear transmutations; 3) elemental analysis methods and techniques.
- ***Advanced communication systems*** (ACS): 1) GRID technologies; 2) data transfer optimization methods.

* 2005 results are shown in Section 5 using the acronyms of the various research directions given in this Section.

1.2. Technological Development and Transfer

1.2.1. Technological development (TD)

- ***Development of new technologies*** (DT): 1) radioactive waste confinement and long-term storage; 2) gamma irradiation of materials; 3) Technologies for cutting, dismantling, sorting, and minimizing waste resulting from the decommissioning of nuclear facilities.
- ***Development of experimental models and prototypes*** (MP): 1) advanced radiation detectors and related electronics; 2) experimental setups and nuclear instruments; 3) dosimetric, radiometric, and analysis equipment with applications to industry and other social and economic areas.
- ***Accreditation/ notification/ authorization/ certification of laboratories*** (AL): 1) radiation metrology; 2) analysis by nuclear and related techniques; 3) irradiation treatment; 4) radiological characterization.
- ***Development of in-house infrastructure*** (DI): 1) institute level; 2) division level.

1.2.2. Technological transfer (TT) to

- ***Environmental protection*** (TE): 1) radwaste conditioning and storage.
- ***Medical practice*** (TM): 1) radiopharmaceuticals, radiotracers, medical supplies; 2) radioactive sources for medical use.
- ***Industry*** (TI): 1) radioactive sources for gamma flaw detection; 2) radioactive sources for level gauges; 3) radioactive sources for calibration.

1.3. Services and small scale manufacturing

1.3.1. Specialized services (SpSe)

1) Accelerated particle beams;
2) Radwaste collection, confinement, and storage;
3) Irradiation treatment of products and materials;
4) Legal metrology in ionizing radiations;
5) Ionizing radiation methods, technologies, and device testing;
6) Personnel monitoring for radiation workers;
7) Microbiological testing and certification;
8) Decommissioning of nuclear facilities, research reactors included;
9) Radioactive sample analysis;
10) Basic and advanced nuclear training.

1.3.2. Small scale manufacturing (SSM)

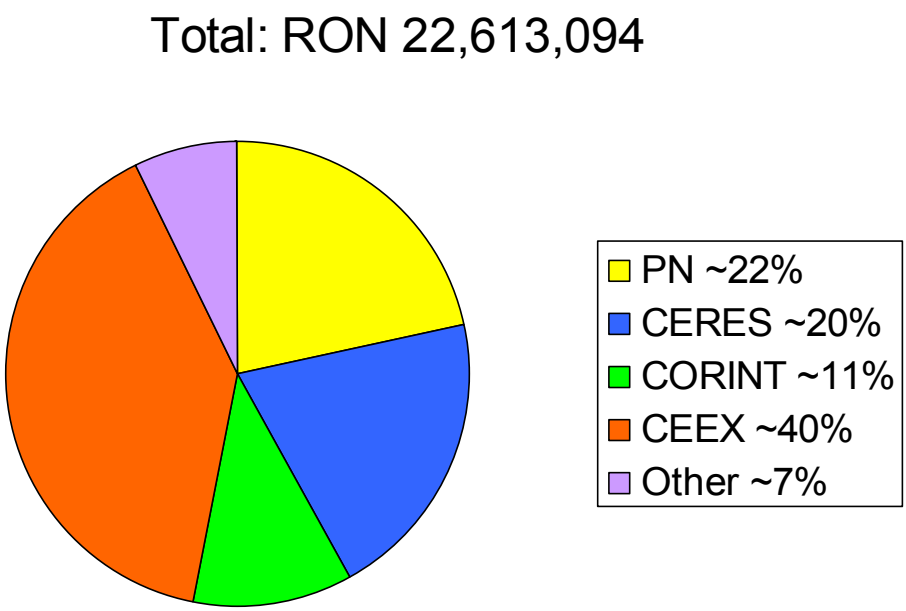
1) Radiopharmaceuticals and radiotracers;
2) Radioactive sources.

1.3.3. Other services (OtSe)

1) Computerization and communications;
2) Documentation, editing, printing, and publishing;
3) Preparation of R & D programs, strategies, and studies.

2. WAYS AND MEANS

2.1. Research and development projects



National Plan for Research, Development, Innovation (PNCDI) – 1

No. of projects under the various PNCDI programs: CERES (64+11), BIOTECH (6), VIASAN (5), AEROSPATIAL (4), AGRAL (3+2), INFRAS (4), RELANSIN (1), CALIST (3), CORINT (11+4).

Total no. of projects: **118** (101 as coordinator and 17 as partner).

Research Excellence Program (CEEX)

Module I: 30 (as coordinator) + 16 (as partner)
Module IV: 5

Total no. of projects: **51** (35 as coordinator and 16 as partner).

SAFETY

Total no. of projects: **1**

SECTORAL Plan

Total no. of projects: **2** (coordinated by other organizations)

NUCLEUS Program

Advanced research in nuclear physics and applications of nuclear techniques to related areas (NIFIN-1, 2003-2005)

Goal: Ensuring continuance in:

a) developing capabilities for nuclear physics research and technological applications in related fields;
b) supplying specialized services to business organizations and public institutions (health care, civil defense);
c) fulfilling obligations under international conventions, agreements, and contracts, whether within the European Community or on a bilateral basis; improving competitiveness within PNCDI.

Objectives:

1) Modeling fundamental processes in quantum systems, via analytical, computerized, and experimental methods;
2) Basic research in atomic and nuclear physics; developments and applications of accelerated particle beams;
3) Research in life and environmental physics;
4) Improving competence, adequacy, and competitiveness in services and small scale manufacturing: analyses; instruments; metrology;
5) Strengthening R & D lines with potential for small scale manufacturing and services;
6) Studies on radwaste treatment and the decommissioning of nuclear facilities.

Number of projects: 26 (7 BR, 1 BR & AR, 13 AR, 2 AR & TD, 2 TD, 1 TD & AR & TT)
Number of phases: 90
Value 2005: RON 4,928,200

*See **Appendix 1: List of IFIN-HH projects under national RD & I programs in 2005***

2.2. International collaboration

2.2.1. JINR Dubna

Romania is among the member states that founded the Joint Institute for Nuclear Research at Dubna, Russia, in 1956. Bucharest contributes about US$500,000 per year to finance the institute. As part of the collaboration, Romanian researchers are employed at JINR for periods ranging from 3 months up to 3 years; other Romanians make visits to JINR, and JINR specialists make visits to Romania. Up to 20% of the Romanian financial contribution may be spent on grants (8%) and scientific programs or projects (12%).

In 2005, collaboration with JINR materialized in:

Grants:

1. *High-temperature facility TS 3000 K*. Gh. Mateescu (IFIN-HH Nuclear Physics Division), Zh. A. Kozlov (JINR Frank Laboratory of Neutron Physics). JINR Theme: 07-4-1052-2004/2008. Value: US$15,000. Activities/results: putting into service of the TS-3000 K facility; startup of the 2nd channel at the Fast Pulsed Reactor IBR-2 and its commissioning by the Neutron Physics Laboratory.
2. *Nuclear structure and reaction mechanism studies towards super-heavy elements: gamma and electron spectroscopy in new heavy nuclei at Z=104.* D. Pantelica (IFIN-HH Nuclear Physics Division), A. V. Yeremin (JINR Fleorov Laboratory of Nuclear Reactions). JINR Theme: 04-5-1004-94/06. Value: US$5,000. Activities/results: production of odd isotopes of ^{253,255}No and ^{255}Lr using GABRIELA experimental facility; data analysis.
3. *Study of jet and lepton production at large transverse momentum in proton-antiproton collisions at 2 TeV at Fermilab CDF detector.* D. Pantea (IFIN-HH Particle Physics Division), J. Budagov (JINR Dzhelepov Laboratory of Nuclear Problems). JINR Theme: 02-0-1022-1997/2005. Value: US$2,000. Activities/results: simulations of scintillator response; study of 2 lepton-2 jet processes.

Projects:

1. *Study of multiple production in 4π-geometry and construction of the SPHERE spectrometer. First-line experiments at the Nuclotron.* People in charge: I. Cruceru (IFIN-HH Nuclear Physics Division), A. A. Litvinenko (JINR Veksler and Baldin Laboratory of High Energies). JINR Theme: 03-1-0983-1992/2004. Value: US$4,000. Activities/results: development of an experimental resistive-plate chamber (RPC) detector; setting its location and operation conditions within the 4pi SPHERE spectrometer; preliminary testing at high voltage in gamma radiation field.
2. *Study of shape coexistence and mixing in A~ 60 – 100 nuclei in online experiments at the IFIN-HH Tandem accelerator.* People in charge: T. Badica (IFIN-HH Nuclear Physics Division), V.A. Morozov (JINR Dzhelepov Laboratory of Nuclear Problems). JINR Theme: 05-2-1039-2001/2006. Value: US$4,000. Activities/results: implementation of a method to determine isomeric nuclear states using the single crystal time spectrometer.

Programs:

1. *Titeica–Markov Program in Theoretical Physics.* People in charge: S. Stoica (IFIN-HH Theoretical Physics Division), V. A. Voronov (JINR Bogoliubov Laboratory of Theoretical Physics). Activities/results: working stages and collaboration on themes: 01-

3-1029-1999/2008 (Nuclear Theory; 15 days, US$834) and 01-3-1030-1999/2008 (Theory of Condensed Matter; 29 days, US$417).

2. *Hulubei–Meshcheryakov Program in Information Technology and Computational Physics*. People in charge: F. D. Buzatu (IFIN-HH), Gh. Adam (JINR Laboratory of Information Technologies). Activities/results: participation in the International Workshop on *Quantum Computing and Communication* (7 days, US$1,000) and working visit by IFIN-HH management to JINR Laboratory of Information Technologies (7 days, US$377).

2.2.2. CERN Geneva

IFIN-HH's ties with the Geneva-based European Organization for Nuclear Research (CERN) have mainly consisted of collaborations under existing MoUs to four major experiments: ATLAS (1998), ALICE (2000) and LHCb (2000), which are part of the Large Hadron Collider (LHC), and DIRAC (1998), part of the Proton Synchrotron (PS). Each of these collaborations unfolds as a separate project financed under the NUCINT subprogram of CORINT.

CORINT Projects:

1. Contributions to the construction and testing of the ATLAS detector, and evaluation of its investigative potential (Contract no. 3). People in charge: S. Dita (IFIN-HH Particle Physics Division). Value: RON 602,431 (including share under MoU and arrears for 2002–2003). Activities/results: Participation in the construction of the Scintillating Tile Hadron Calorimeter (Tilecal), particularly in the assembly and wiring of the calorimeter modules. Participation in the commissioning of Tilecal: contributions to the development of the DCS system and low-voltage sources, and in electronic component testing with a mobile data acquisition system. Continued analysis of data acquired during Tilecal stand-alone tests to identify different calorimeter responses to pions and protons. Participation in trigger and data acquisition activities through developing successive versions for the ATLAS – DAQ online software system, as determined by integration with other DAQ subsystems and test results. Development of GRID-ATLAS-ROMANIA cluster; currently running are 17 CPUs WN registered with the Grid Operation Center (GOC). ATLAS detector studies of relevant physical processes (heavy lepton production, top-anti-top pair production) using GRID-based simulations. LHC theoretical studies on issues of major physical relevance: radiative corrections in heavy lepton production, determination of CKM matrix elements.
2. *Exotic states of hadron matter and in situ effects – ALICE* (Contract no. 4729). People in charge: M. Petrovici (IFIN-HH Nuclear Physics Division). Value: RON 373,325 (including share under MoU). Activities/results: Fabrication and testing of 27 TRD (Transition Radiation Detector) modules. Upgrading of NIHAM distributed computing system, part of the ALICE-GRID; participation in Monte Carlo simulation and MonALISA monitoring. Beginning to implement software packages for experimental data simulation and processing.
3. *Study of B mesons and nonconservation of CP symmetry in LHCb experiment* (Contract no. 2). People in charge: S. Stoica (IFIN-HH Theoretical Physics Division). Value: RON 500,000 (including share under MoU and arrears for 2002–2003). Activities/results: Cosmic ray tests at ECAL and photomultiplier connection testing. Cosmic ray flux simulation using Preshower/Scintillator pad detector setup. Work has begun with LHCb specific software to simulate and reconstruct events. Optimization of calorimeter

software, particularly Readout code speed. Fabrication and commissioning of some mechanical parts, and their assembly at LHCb calorimeter and monitoring system.

4. *Preshower detector for DIRAC experiment* (Contract no. 1). People in charge: M. Pentia (IFIN-HH Nuclear Physics Division). Value: RON 362,489 (including share under MoU and arrears for 2002–2003). Activities/results: Design, construction, and installation of the new preshower detector; study on extending its performance range. To increase electron rejection efficiency by developing the electron shower over a large momentum range, two detection layers have been put in place. As a result of this experiment, the lifetime of atom $\pi^+\pi^-$ was determined in world premiere at CERN, thus confirming Chiral Perturbation theory predictions.

Visits to CERN: 53 short-term (1 to 60 day) visits totaling 2,016 days; 2 three-month stages; 2 full-year stages.

A CERN Committee chaired by IFIN-HH Director General Dr. Nicolae V. Zamfir and operating at the level of the Romanian Ministry of Education and Research is responsible for coordinating work with CERN. The committee's top priority is to start preliminary processes for Romania's accession to CERN. To this end, the committee has produced a questionnaire (including a short presentation of CERN and 9 questions) to sound out Romania's scientific, technical, and business communities on whether they are interested in cooperating with the Geneva center. Out of 73 entities (R & D institutes, universities, businesses, etc.) queried, 17 returned the filled-out questionnaires. The results of the survey showed that Romania had both the necessary potential and the desire to become a member state of CERN. Preparing the pre-accession file will be the committee's primary task in 2006. IFIN-HH has also become closely involved in the committee's activities related to the CERN-coordinated LHC Computing GRID (LCG). Preparations were made for signing the LCG MoU that will provide financing under the CORINT program for the establishment of a Tier-2 GRID Center on the Magurele Campus where IFIN-HH is located. The LCG Project is represented in Romania by M. Dulea, head of the IFIN-HH IT and Communication Department.

2.2.3. IAEA Vienna

Projects:

1. *Infrastructure Strengthening for the Decommissioning of the Research Reactor VVR-S Magurele, Bucuresti* (Technical Cooperation Project ROM 4029, 2003-2006). People in charge: M. Dragusin (IFIN-HH Reactor Decommissioning Division). Activities/ results: Donations of US$105,000-worth of decommissioning equipment; technical assistance supplied by international experts in the areas of unconditional waste clearance and decommissioning technologies and techniques. A notable result consisted in the coalescence at IFIN-HH of a core team of experts in Decommissioning, Decontamination, and Radiological Remediation (DDR) to engage in the 16-year project to decommission IFIN-HH's VVR-S research reactor.
2. *Radium stock conditioning in Romania* (TCP ROM 4029-82784A, 2004-2005). People in charge: F. Dragolici (IFIN-HH Radioactive Waste Management Division). Activities/Results: Technical assistance has been provided under Project ROM4029. In fact, as funds had been left unused under this project, the IAEA decided to spend them on supplying technical assistance for the reconditioning of spent Ra-226 sources from Romanian medical applications, to prepare for their long-term (for over 50 years) storage. Under the operating license issued by the local nuclear authority CNCAN,

IFIN-HH's Radioactive Waste Treatment Station (RWTS) is responsible for collecting such radioactive waste from all over the country. An appropriate technology had to be devised and implemented to ensure radiological safety, since such wastes are not admitted for final storage at the National Radioactive Waste Repository at Baita-Bihor. The project, launched by IAEA in September 2004, was completed as the existing waste inventory at RWTS was reconditioned during an expert mission in June 2005. IFIN-HH experts outfitted a special laboratory for this purpose and prepared the technical documentation that will be submitted to CNCAN to seek homologation of the technology.

3. *Corrosion Studies of Aluminum-Clad Spent Fuel in Wet Storage Ponds at IFIN-HH, Bucharest-Magurele* (Research Contract 11967/RBF; regular budget fund, 2003-2006). People in charge: A. Zorliu (IFIN-HH Reactor Decommissioning Division). Activities/Results: The aluminum disks in the spent fuel ponds were checked for corrosion in 2005. Racks in ponds no. 2 and no. 3 were taken out for investigations, including metallographic analysis. The rack from pond 2, which had the Al disks mounted vertically, did not show significant signs of corrosion. By contrast, on the pond 3 rack that had the Al disks mounted horizontally corrosion was significant, especially on the first disks and the Al-Al and Al-stainless steel disk pairs. Corrosion points were photographed and analyzed. Following imaging and physicochemical testing, the disks were sent on for metallographic tests to the Nuclear Research Institute (ICN) in Pitesti. The final report on the project is currently in the making.
4. *Microscopic optical potential for alpha particles at low energies* (Research Contract 12422/RO/RBF, 2002-2005). People in charge: M. Avrigeanu (IFIN-HH Nuclear Physics Division). Activities/Results: A nuclear temperature-dependent nuclear density was introduced in the double-folding model (DFM) designed for calculating α–particle optical model potentials (OMP). The model had previously been used for the semi-microscopic analysis of α particle scattering by nuclei at A~100 at energies <32 MeV. Former and present DF potentials, as well as a regional OMP, and DF-equivalent WS potentials were used to study data for (n, α) reactions on ^{92,95,98,100}Mo nuclei. Comments on a recent publication (astro-ph/0505556 v1, 27.05.2005) compared the latest measurements of α particle scattering by ^{112,124}Sn nuclei at low energies with optical-potential calculated values earlier published by IFIN-HH researchers [M. Avrigeanu *et al.*, Nucl. Phys. A 723, 104 (2003)], based on the analysis of α particle scattering by nuclei at A~100 at energies <32 MeV.
5. *Assessing the effectiveness of soil conservation techniques for sustainable watershed management using fallout radionuclides* (CRP 12328/RO, 2002-2007). People in charge: R. Margineanu (Life and Environmental Physics Division). Activities/Results: IFIN-HH and SCCCES Perieni-Barlad continued work on this ongoing project in 2005. SCCCES is responsible for picking relevant areas, planning sample collection, and carrying out preliminary conditioning of the samples. IFIN-HH takes part in sample collection, does the final conditioning and measurements, and assesses radionuclide inventory. The partners cooperate on radionuclide mapping in the investigated areas, result interpretation, conversion into erosion/ sedimentation equivalents, and process modeling. In 2005, samples were collected and measured in Perieni-Barlad area. R. Margineanu, N. Popa, and Carmen Olteanu gave an oral presentation on the "Use of 137Cs in sedimentation rate assessment in gullies and reservoirs, in Romania" at the meeting on Agriculture and Food Safety within the Context of European Union Directives, Tekirdag, Turkey, July 14-15, 2005.
6. *Development and implementation of Quality Systems for clinical radioactivity measurem*ents (Research Contract 12921/RBF, 2004-2005). People in charge: M.

Sahagia (Radioisotope Research and Production Division). Activities/Results: A report on ensuring activity measurement traceability in Romanian nuclear medicine was presented at the 1st Research Coordinated Meeting of the IAEA's CRP Number: E2.10.05 "Harmonization of quality practices for nuclear medicine radioactivity measurements," IAEA, Vienna, June 27 – 30, 2005. Contributions were made to the preparation of RCM measurements. The most important document out of 4 that were prepared dealt with activity measurements to complete the "IAEA/WHO network of secondary standard dosimetry laboratories, SSDL network charter." Work was conducted on the absolute calibration of Tc-99m si Lu-177 radionuclides used in nuclear medicine and transfer of unit activity to secondary standards.

7. *188-Re Radiolabeling techniques of biomolecules for neuroblastoma therapy* (Research Contract 12122/R1, 2004-2005). People in charge: V. Lungu (Radioisotope Research and Production Division). Activities/Results: Studies were conducted on the preparation of high specific activity ^{177}Lu-DOTA-TATE; in vivo studies were performed on animal tumors with overexpressed somatostatin receptors. Biodistribution was studied and targeted radiotherapy was monitored by the flow citometric method. Results were presented at the 3rd RCM meeting of the project, held at IAEA HQ in Vienna, Nov. 8–11, 2005, and the symposium on "Trends in Radiopharmaceuticals," Vienna, Nov. 14–17, 2005.

2.2.4. European Commission

Projects under Framework Programme 6

1) *Study of Strongly Interacting Matter* (Hadron Physics), Contract No. RII3-CT-2004-506078, 2004-2007, Value: €99.060. Coordinated by: INFN, Italy. People in charge: C. Guaraldo (INFN-LNF, Italy). IFIN-HH takes part in 5 activities:
   a) *N1: "Compressed baryonic matter*" (CBMnet). People in charge: M. Petrovici (IFIN-HH Nuclear Physics Division), P. Senger (GSI, Darmstadt, Germany). Activities/Results: Testing of the RPC prototype based on Glaverbel glass electrodes in minimum ionization particle beam at GSI, Darmstadt Germany.
   b) *JRA4: "High speed gas detectors with integrated electronics"* (Gas Detectors). People in charge: M. Petrovici (IFIN-HH Nuclear Physics Division), Johannes Wessels (Westfälische Wilhelms-Universität, Münster, Germany). Activities/Results: We finalized experimental data analysis concerning the performance in terms of incidence rate of the TRD prototype at high count rates. Work got underway to design and develop a new prototype that will keep the good performance of the previous one, while doubling transition radiation tracking efficiency.
   c) *JRA10: "Silicon drift detectors for X-ray spectroscopy"* (SIDDHARTA). People in charge: M. Bragadireanu (IFIN-HH Particle Physics Division), Vincenzo Lucherini (INFN-LNF, Italy). Activities/Results: The final prototype of the HV Controller was made, as planned, in 2005. It involved the design, making, and testing of the analog and digital module prototypes, interconnecting the two of them, and interfacing to computer and the control and monitoring software.
   d) *JRA11: "Novel radiation hard CVD-diamond detectors"* (NoRHDia). People in charge: M. Petrovici (IFIN-HH Nuclear Physics Division), E. Berdermann (GSI Darmstadt, Germany). Activities/Results: Startup of tests on single crystal diamond performance in time-of-flight measurements of minimum ionization particles with less than 100 psec resolution.

e) *JRA12: "Advanced TOF detection systems"* (Advanced TOF). People in charge: M. Petrovici (IFIN-HH Nuclear Physics Division), N. Hermann (Ruprecht-Karls-Universität Heidelberg, Germany). Activities/Results: A Glaverbel glass-based RPC detector prototype was made and tested with radioactive sources and in minimum ionizing particle beam.

CORINT Project: *Hadron Physics* (Contract no. 58). People in charge: M. Petrovici (IFIN-HH Nuclear Physics Division). Value: RON 568,500.

2) *EUROpean Nuclear Structure Integrated Infrastructure Initiative* (EURONS), Contract No. RII3-CT-2004-506065, 2004-2007, Value: €52.000. Coordinated by: GSI, Darmstadt, Germany. People in charge: A. C. Müller (IPN Orsay, France). IFIN-HH takes part in the following activities:
   a) *N4: East-West-Outreach* (EWON). People in charge: F. Negoita (IFIN-HH Nuclear Physics Division), S. Harrissopulos (NCSR Demokritos, Athens, Greece). Activities/ Results: Meetings held in Bucharest, May 13–14, and Athens, November 11–12, paved the way to starting work in this network. The structures of the working groups and areas they were to cover were established. Questionnaires were prepared in accordance with NuPECC guidelines and models for inventorying human resources and materials available for nuclear physics research.
   b) *JRA2: Advanced Gamma Tracking Array* (AGATA). People in charge: D. Bucurescu (IFIN-HH Nuclear Physics Division), W. Korten (CEA-Saclay, France). Activities/ Results: Work went on improving the tracking algorithms to better calculation times and efficiency in the case of high multiplicity events.
   c) *JRA7: Ion Sources for Intense Beams of Heavy Ions* (ISIBHI). People in charge: L. Schachter (IFIN-HH Nuclear Physics Division), G. Ciavola (INFN-LNS, Italy). Activities/ Results: Intense ion beams with multiple ionization states were produced from a 14 GHz ECR ion source as part of an experiment conducted at IKF, Germany. Intensities an order of magnitude higher than standard values were obtained due to the use of physical phenomena occurring in the border area between plasma and the extraction potential region.

   CORINT Project: *The Integrated Infrastructure Initiative of the European Nuclear Structure Research – EURONS* (Contract no. 79). People in charge: D. Bucurescu (IFIN-HH Nuclear Physics Division). Value: RON 237,410.

3) *EURopean Isotope Separation On-Line Radioactive Ion Beam Facility, Research Infrastructure – Design Study* – EURISOL DS (Contract no. 515768, 2004-2007) Value: €81.500. People in charge: F. Negoita (IFIN-HH Nuclear Physics Division), G. Fortuna (INFN Legnaro, Italy). Activities/ Results: In its first year with EURISOL, which was accepted as a Design Study project under FP6 in February 2005, IFIN-HH was chiefly involved in Task 4 – Fission Target and Task 5 – Safety and Radioprotection. Under Task 4, design was completed for a new version of the 1+ ion source that will be fabricated at IFIN-HH. Also, IFIN-HH began to take part in designing the target-ion source system that is key to obtaining radioactive beams with such high intensities as are expected of EURISOL. Under Task 5, a software platform was developed which contains libraries of data, knowledge, methods, and models that are accepted, certified, and recommended by the international nuclear regulatory authorities, or have been developed by countries with ample experience in evaluating radiation exposure of nuclear facility personnel and public living around such facilities.

   CORINT Project: *European facility for the production of radioactive ion beams by ISOL – EURISOL method* (Contract no. 80). People in charge: F. Negoita (IFIN-HH Nuclear Physics Division). Value: RON 145,000.

4) *South Eastern European Grid-enabled e-Infrastructure Development* – SEE-GRID (Contract no: 2356, 2004-2006) ICI. People in charge: S. Constantinescu (IFIN-HH Information Technology and Communication Dept.). Activities/ Results: In 2005, a Grid Testbed was developed, and procedures were started to have it certified. Grid concepts were disseminated among IFIN-HH researchers and "gridable" problems were identified. Middleware was periodically updated. Measurements of minimal configuration performance were conducted to select optimum site development solutions.
5) *Enabling Grids for E-sciencE* (EGEE). Contract No: 508833, 2004-2006, ICI. People in charge: M. Petrovici (IFIN-HH Nuclear Physics Division). Activities/ Results: An EGEE site and a SEE distributed computing site were configured and put into operation. The IFIN-HH-EGEE group met regularly to discuss further activities and GRID technology details. A 1 Gbps connection was put in place between the NIHAM Center of Excellence and Computing Center.
   CORINT Project: *Grid Development for Science* (Contract no. 77, coordinated by ICI).

EURATOM Projects

1) *Analysis of fast neutron induced reactions for fusion reactor materials* (TT-1, 2000-2006, CORINT). V. Avrigeanu (IFIN-HH Nuclear Physics Division).
2) *Report on shift effects and ionization induced in KU-1 and KS-4V type samples by high-energy proton irradiation* (TT-11, 2000-2005, CORINT). B. Constantinescu (IFIN-HH Applied Nuclear Physics Division).
3) *Data evaluation on the deuteron activation of some structured materials* (TT-16, 2005-2006, CORINT). V. Avrigeanu (IFIN-HH Nuclear Physics Division).
4) *Report on radiation-induced absorption in radiation resistant glasses selected as a result of atomic displacement effects in samples* (TT-17, 2005-2006, CORINT). B. Constantinescu (IFIN-HH Applied Nuclear Physics Division).
5) *Investigation on sapphire optical fiber behavior in gamma-irradiated UV-visible spectral region* (UT-1, 2005, CORINT; coordinated by INFLPR). B. Constantinescu (IFIN-HH Applied Nuclear Physics Division), I. Vata (IFIN-HH Cyclotron Applications Division).
6) *Investigation on gamma-irradiation effects on optical semiconductor detectors for sensor and optical communication applications* (UT-2, 2005, CORINT; coordinated by INFLPR). B. Constantinescu (IFIN-HH Applied Nuclear Physics Division).
7) *Gamma irradiation effects on optoelectronic components (lasers with inbuilt semiconductors and detector)* (TT, 2005, CORINT; coordinated by INFLPR). B. Constantinescu (IFIN-HH Applied Nuclear Physics Division).
8) *EURANOS* (European Approach to Nuclear and Radiological Emergency Management), within RODOS USERS GROUP (FI6R-CT-2004-508843, 2004 – 2008; unfunded). D. Slavnicu (IFIN-HH Life and Environmental Physics Division).

PHARE Projects

1) *Preliminary Safety Analysis Report on Baita-Bihor Repository* (EuropeAid/ 117365/ D/SV/RO & RO 2002/000 632.08.01). People in charge: F. Dragolici (IFIN-HH Radioactive Waste Management Division). The scenarios to be considered were established at two workshops that were held under the project in January and April. Training on using the safety assessment AMBER software was organized in July. In November, a first version of the safety report was drafted and submitted to the relevant authorities for review. The final version, which is due by August 2006, will include

experimental results based on data collected in May 2005–May 2006. Preliminary results showed the National Radioactive Waste Repository at Baita, Bihor, was safely operated. No radionuclide migration was detected. Higher activity limits were recommended for the repository.

Note on the 2003 Phare Project on *"Upgrading of the Baita-Bihor Repository for Institutional Radioactive Waste in Romania"* (RO 5812.06.03). Formal approval was secured for changes to the Project Record. Terms of reference (TOR) were prepared and approved for the technical assistance side, and so were tendering documents for the operations side. Four international groups were shortlisted following prequalification. The technical documentation for the operations part, however, was incomplete. As contracting had to be completed by Nov. 30, 2005, there was no time left to carry out the activities according to European legislation. As a result, the project could not be implemented.

2.2.5. INFN, Italy

Joint research themes under MoU

I. Experimental nuclear physics

1. *Spectroscopy of high spin states and exotic nuclei.* INFN Padova and LN Legnaro (S. Lunardi); IFIN-HH Nuclear Physics Division (D. Bucurescu).
2. *Nuclear spectroscopy and electromagnetic moments in nuclei far from stability.* INFN LN Legnaro, Italy (M. De Poli); IFIN-HH Nuclear Physics Division (M. Ionescu-Bujor).
3. *Proton and alpha-decay of very proton-rich nuclei.* INFN Padova (C. Signorini); IFIN-HH Nuclear Physics Division (M. Ivascu).
4. *Reaction mechanisms in heavy ion collisions at intermediate energies (CHIMERA and DRACULA collaborations).* INFN LNS Catania and Naples (A. Pagano); IFIN-HH Nuclear Physics Division (M. Petrovici).

II. Theoretical Nuclear Physics

5. *Microscopic description of cluster decay.* INFN Catania (A. Imsolia), IFIN-HH Theoretical Physics Division (D. S. Delion).

III. High-energy and Atomic Physics

6. *Exotic atoms research at DAΦNE collider (DEAR experiment) and CERN-PS (DIRAC experiment).* INFN LN Frascati (C. Guaraldo), IFIN-HH Particle Physics Division (T. Ponta).
7. *Study of photoproduction of charmed particles (E831 – FOCUS experiment at Fermilab)*. INFN Pavia (S. Ratti); IFIN-HH Particle Physics Division (D. Pantea).
8. *High energy proton-antiproton interactions (CDF experiment at FNAL)*. INFN Bologna, LNF, Padova, Pisa, Roma 1, Trieste, Udine (F. Bedeschi), IFIN-HH Particle Physics Division (D. Pantea).

2.2.6. IN2P3 – France

Joint research themes under MoU

1. *High spin spectroscopy for superdeformation and exotic nuclei,* No. 99-25 (D. Pantelica – IFIN-HH Nuclear Physics Division; G. Duchene – IReS Strasbourg).
2. *Simulation of detector and physical processes and data acquisition for ATLAS*, No. 01-28 (S. Dita – IFIN-HH Particle Physics Division; G. Tisserant – CCP Marseille).
3. *Dynamic study on the decay of deformed nuclei at proton drip line*, No. 01-29 (M. Rizea – IFIN-HH Theoretical Physics Division; N. Carjan – CENB-G).
4. *Characterization of nuclear ceramics using Ion Beam Analysis (IBA) techniques,* No. 02-32 (D. Pantelica – IFIN-HH Nuclear Physics Division; L. Thome – CSNSM Orsay).
5. *Nuclear structure at border lines between stable and unstable nuclei,* No. 03-33 (R. Borcea – IFIN-HH Nuclear Physics Division; F. de Oliveira – GANIL)
6. *Nuclear superfluidity in a neutron-rich environment,* No. 03-34 (N. Sandulescu - IFIN-HH Theoretical Physics Division; N. Van Giai – IPN Orsay).
7. *Strongly interacting fermion systems,* No. 03-35 (D. Delion – IFIN-HH Theoretical Physics Division; P. Schuck – IPN Orsay).
8. *Multifragmentation and isospin degree and fission freedom*, No. 03-37 (M. Parlog – IFIN-HH Nuclear Physics Division; B. Borderie – IPN Orsay).
9. *Geant4 validation using experimental data and its impact on the linear collider performance estimation,* No. 04-38 (C. Alexa - IFIN-HH Particle Physics Division; J.-C. Brient – LLR Palaiseau).
10. *Study of neutron-rich nuclei by beta-delayed neutron and gamma decay spectroscopy,* No. 04-39 (A. Buta – IFIN-HH Nuclear Physics Division; J. Angelique – LPC Caen).
11. *Isospin dependence of fusion and fission barriers,* No. 05-A (R. Gherghescu – IFIN-HH Theoretical Physics Division; N. Carjan – CENB-G).
12. *Nuclear fission for applications and fission products,* No. 03-36 (M. Mirea – IFIN-HH Nuclear Physics Division; L. Tassan-Got – IPN Orsay).
13. *Project for a platform to study molten salt reactors including neutrinos and chemical aspects,* No. 04-40 (E. Dragulescu – IFIN-HH Nuclear Physics Division; R. Brissot – LPSC Grenoble).

2.2.6. FAIR (GSI – Darmstadt, Germany)

The Facility for Antiproton and Ion Research (FAIR) is an international center for nuclear research and applications that Germany's GSI Darmstadt is planning to host. FAIR is expected to concentrate the world's top-notch research in nuclear and atomic physics in the medium term. IFIN-HH takes part in 4 collaborations under the project:

- Nuclear structure studies – NUSTAR (International Nuclear Structure and Astrophysics Community)
- Atomic physics – SPARC (Stored Particle Atomic Research Collaboration)
- Hadron matter studies – CBM (Compressed Baryon Matter)
- Antiproton experiments – PANDA

In 2005, working meetings under these projects laid the groundwork for future collaboration, decided on the types of experiments to be developed, and established the contributions of the participants.

2.2.7. SPIRAL-2 (GANIL – Caen, France)

The goal was to develop a system, based on detecting loss-generated neutrons and gamma radiation, to measure primary system loss. To this end, production rates were estimated relying on literature data and nuclear models. Simulations and tests were carried out using sources and beams in order to determine thresholds and efficacy for different scintillator detectors.

IFIN-HH was also involved in estimating secondary beam intensities using fusion-evaporation reactions induced by the kind of intense heavy ions that will be made available by SPIRAL-2. Energy loss and the dimensions of the target-ion source system were taken into account to develop a computing program that combined the benefits of several codes used for computing integral and double-differential fusion-evaporation cross sections, to produce rapid estimates with reasonably high accuracy (order of magnitude).

2.3. Scientific Events

	Event	*Organizers*	*Time/Place/No. of participants*	*Contact persons*
1.	Workshop on "Romanian prospects to join intl. FAIR project at GSI Darmstadt"	IFIN-HH	February 24–25, 2005 Bucharest 100 participants	Nicolae V. Zamfir
2.	Romanian-French Science Week (in coop. with other research institutes on Magurele Campus)	French Emb. in Bucharest; Rom. Min. of Education & Research; IFIN-HH	April 18–23, 2005 Bucharest	Florin D. Buzatu Ioan Ursu
3.	Symposium on "New ways and methods to diversify the public image of research: Research between supply and demand"	INFM IFIN-HH IFFLPR	June 8, 2005 Bucharest	Florin D. Buzatu Ioan Ursu
4.	Workshop on "Ionizing Radiation Applications to Industry, Health, and Environment"–IWIRad 2005	IFIN-HH	June 20–21, 2005 Bucharest 56 participants	Emanuela Cincu
5.	Summer School in "Exotic Nuclei and Nuclear/Particle Physics"	IFIN-HH	June 13–24, 2005, Mamaia, Constanta 120 participants	Sabin Stoica
6.	Symposium on "Modern Physics for Romanian Prosperity"	IFIN-HH	June 22, 2005 Parliament Palace, Bucharest	Nicolae V. Zamfir
7.	Workshop on "Low-x Physics"	IFIN-HH	June 29–July 3, 2005 Sinaia, 80 participants	Irinel Caprini Sabin Stoica
8.	National Physics Conference – CNF-2005	IFIN-HH	September 13–17, 2005, Bucharest 320 participants	Nicolae V. Zamfir, Al. Calboreanu
9.	Workshop on "Nuclear Interactions and Hadron Matter"	IFIN-HH	September 24–28, 2005 Cheile Gradistei 90 participants	Dr. Mihai Petrovici

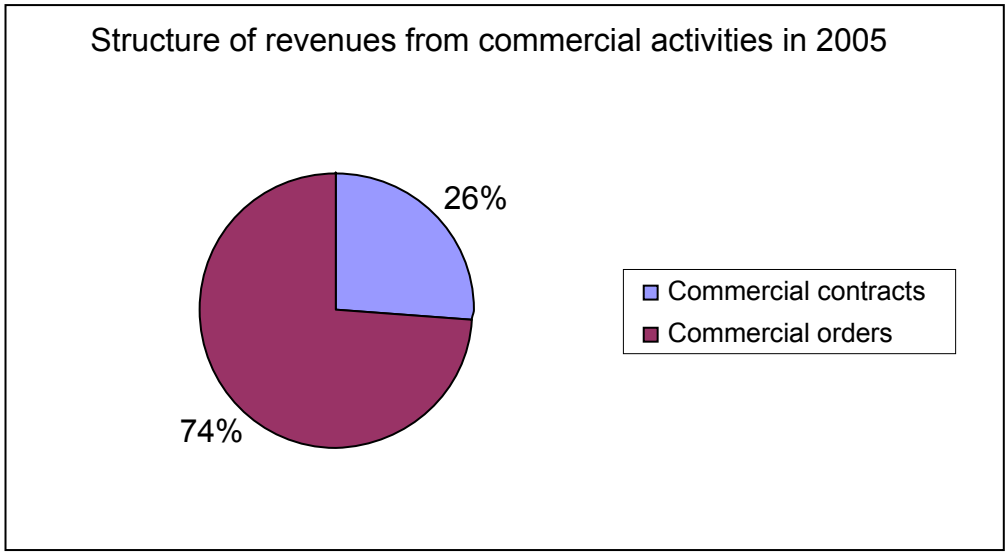
2.4. Commercial activities

IFIN-HH supplies a number of products and services on a contractual basis or on purchase order.
Services supplied in 2005 included:

- irradiations
- radioactive waste treatment and storage
- information technology
- measurements
- human radiation monitoring

Products supplied in 2005 mainly consisted of radiopharmaceuticals.

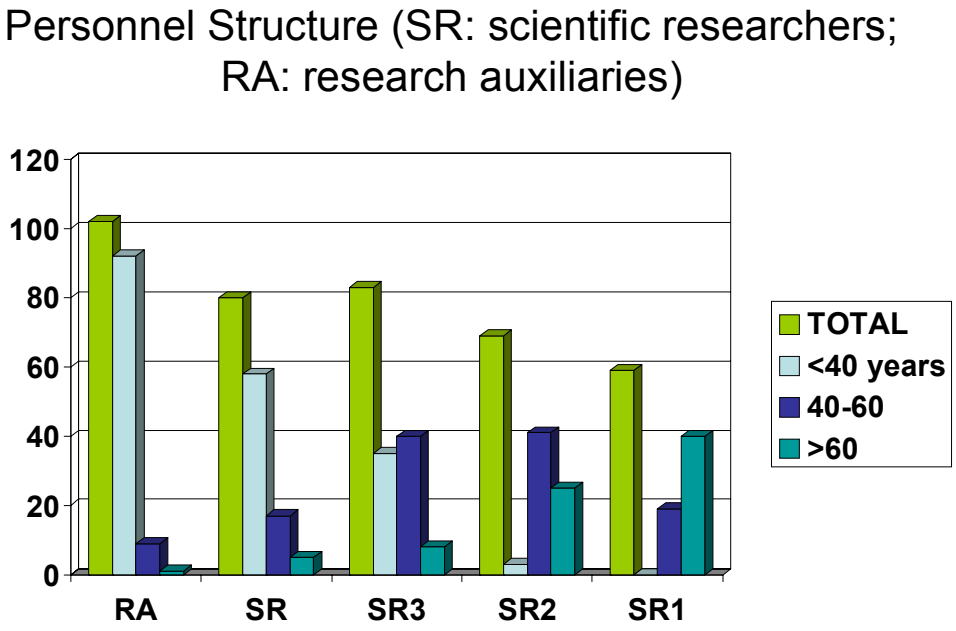
The main clients included health care entities (radiopharmaceuticals), nuclear facilities (radwaste treatment and storage), drug manufacturers (irradiations), and R & D institutes (IT services).



Commercial contracts (26%) and purchase orders (74%) fetched IFIN-HH a total RON 3,567,688 in 2005.

3. RESOURCES

3.1. Human resources

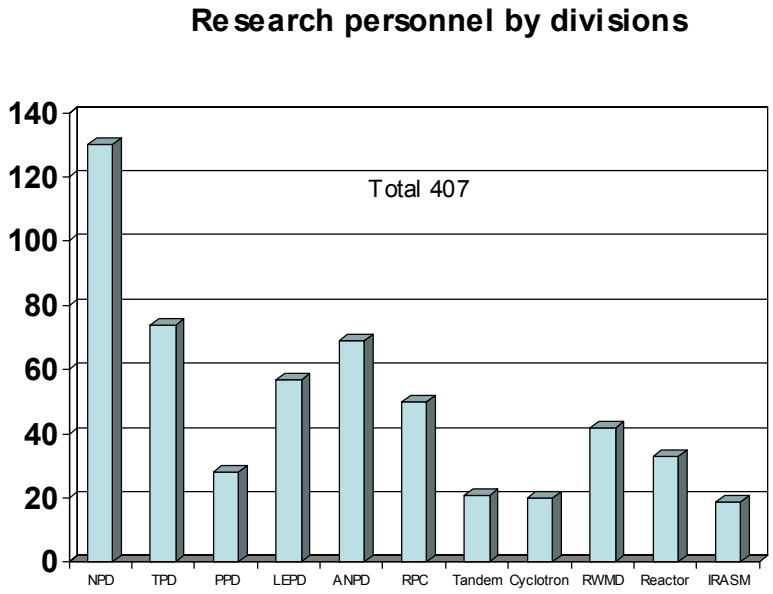


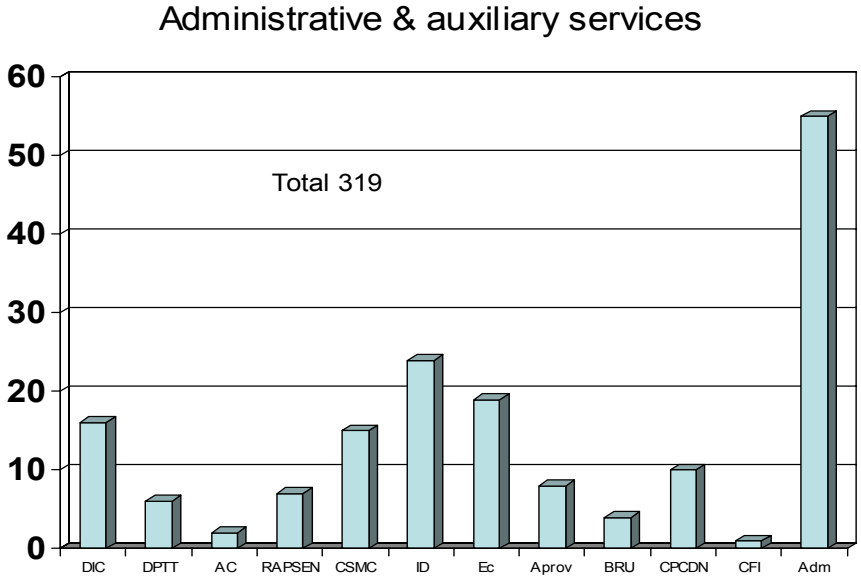
Total no. of researchers: 393 (including 173 PhDs)
Total no. of employees: 726

Promotion tests for researchers were held for the first time in nearly 5 years in 2005. As a result, a total 65 candidates were promoted as follows:

- To Scientific Researcher level I: 4
- To Scientific Researcher level II: 7
- To Scientific Researcher level III: 25
- To Scientific Researcher: 29

Since over the years, some engineers had sought and got promotions to researchers for the sake of better wages, this practice was replaced in 2005 by holding separate promotion tests for engineers who were encouraged to improve their positions as Technological Development Engineers, levels III, II, and I. Results of these tests are still pending.





Part of the personnel in IFIN-HH's auxiliary and administrative services (30 to 40 people out of the total 319) also supply services to other organizations located on the Magurele Campus, in Bucharest, and even elsewhere around the country. It is the case of the physics library, the editorial offices of *Romanian Journal of Physics* and *Romanian Reports in Physics*, the International Nuclear Information System (INIS) office, as well as other services, including internet access, e-mail, translation, telephone operation, electrical maintenance, etc.

3.2. Facilities and equipments

Facilities of national significance

1) Tandem Accelerator – see Section 5.4
2) Cyclotron Accelerator – see Section 5.7
3) Radioactive Waste Treatment Station (RWTS) and National Radioactive Waste Repository (NRWR) at Baita, Bihor – see Section 5.9
4) Multipurpose Irradiation Facility (IRASM) – see Section 5.10
5) Nuclear Reactor – see Section 5.11

Large facilities

Radioisotope Production Center (RPC) – see Section 5.8

Equipments. More than €10,000-worth of equipments was purchased under different projects, as follows:

	Equipment	***Project/Contract no.***	***Cost*** (in RON)
1	High-performance chromatograph	Agral CEEX	42 242.40
2	Transplantable HP Ge 25% detector	CEEX 44	73 313.81
3	Gamma spectrometer system	CEEX 44	114 035.63
4	Thermoluminescence reader	CEEX 44	87 229.80
5	Absorption spectrophotometer	CEEX 25	106 263.30
6	CRC-15R dose calibrator + sources	CEEX 25	45 495.00
7	Gross α, β measuring system	CEEX 44	83 116.88
8	Transform IR spectrophotometer	CEEX 36/2005 CEEX 05-D10-47	89 968.00
9	Liquid scintillation analyzer	CERES 4-217 ; CALIST 5154 ; CEEX 36/2005 ; CEEX 05-D10-47, RD	132 406.00
10	Gas chromatograph	BIOM-CEEX 78/'05	351 400.00
11	High-performance chromatograph	AGRAL 6/2005	98 565.60
12	Olympus BX 51 microscope	AGRAL 6/2005	68 543.86
13	ORTEC HP Ge detector	CEEX 05-D11-50	124 984.17
14	GEM 45 P4 HP Ge detector	CEEX 05-D11-30	124 984.17
15	HP Ge 30% detector	CEEX 19	100 639.94
16	Digital acquisition system	CEEX 19	44 903.05
17	SBDYC tritium-in-air monitor	CEEX 05-D10-47	109 445.00
18	CRC-15R dose calibrator	CEEX 36/2005	47 391.00
19	GT 883 washer	CEEX BIOM 78.	50 575.00
20	Cooling centrifuge	AGRAL 6/2005	39 869.00
21	ORTEC HP Ge detector	CEEX 83	86 625.10
22	Spectrometer + probe	CEEX 84	47 275.19
23	α,β,γ, neutron monitor	CEEX 84	64 484.50
24	Gamma MCA spectrometer system	CEEX 83	53 280.04
25	Gamma spectrometer + detector	CEEX 84	146 035.71
26	γ, β TLC scanner	CEEX 26	93 927.00
27	Neutron dosimeter	H.G.700	54 739.46

3.3. Financial resources

FINANCIAL RESOURCES IN 2003 – 2005

No.	INDICATOR	2003 (RON)	2004 (RON)	2005 (RON)
1	Turnover	16,180,333	18,652,155	31,494,454
2	Number of employees	770	780	726
3	**TOTAL REVENUES**, of which:	16,735,930	21,971,574	33,069,422
4	Revenues from research	9,021,438	11,759,290	22,613,094
5	Revenues from small-scale production and services	2,663,440	5,165,595	3,657,688
6	Govt. subsidies for Facilities of National Significance	3,909,542	3,461,117	6,100,000
7	Other revenues (rents, utility supply)	1,141,410	1,585,572	698,640
8	Net profit	25,057	4,050	34,785
9	**TOTAL EXPENSES,** of which:	16,693,084	21,951,214	32,100,380
10	-raw materials, materials	1,013,935	1,392,824	2,604,147
11	-overheads	980,659	1,061,322	1,225,574
12	-depreciation	476,055	725,906	750,030
13	-total labor costs	10,118,608	12,215,603	16,955,365
14	-interests	0	0	0
15	Wages	7,472,248	9,212,060	12,689,088
16	Expenses/RON ,000 of turnover	1,032	1,177	1,019
17	Debts, of which:	4,404,719	7,938,580	14,586,841
18	Debt arrears	1,795,486	1,958,099	0
19	Current liabilities	2,609,233	5,980,481	14,586,841
20	Loans	0	0	0
21	Cash (in hand and bank accounts)	1,853,089	3,565,634	6,419,117
22	Accounts receivable	2,994,662	3,512,379	8,402,461
23	Govt. subsidies for investments	608,400	1,100,000	450,000

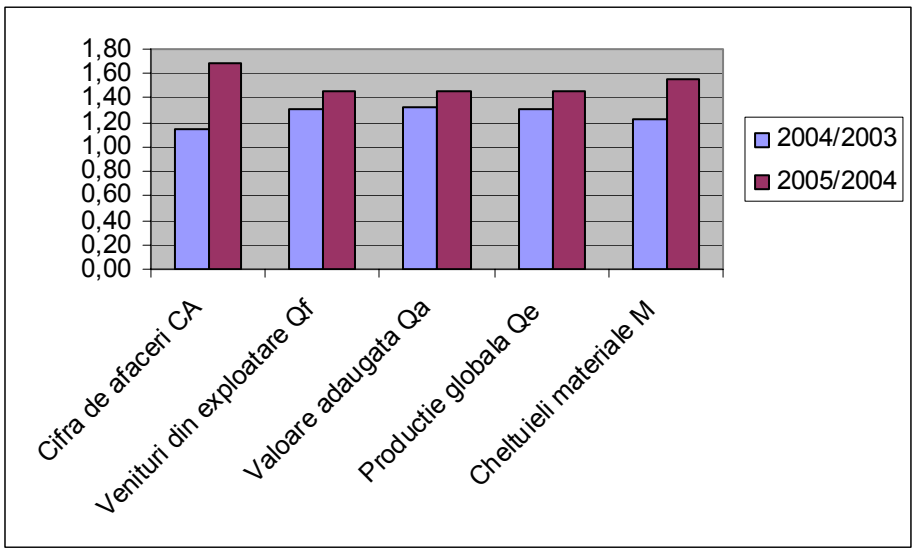


Chart 1

Revenues, as the Table and Chart 1 show, were on the rise in 2005. Indicative of the uptrend were a 68 percent increase year on year in turnover and a tangible growth in value added. Both are especially significant as they reflect a highly effective utilization of the institute's potential.

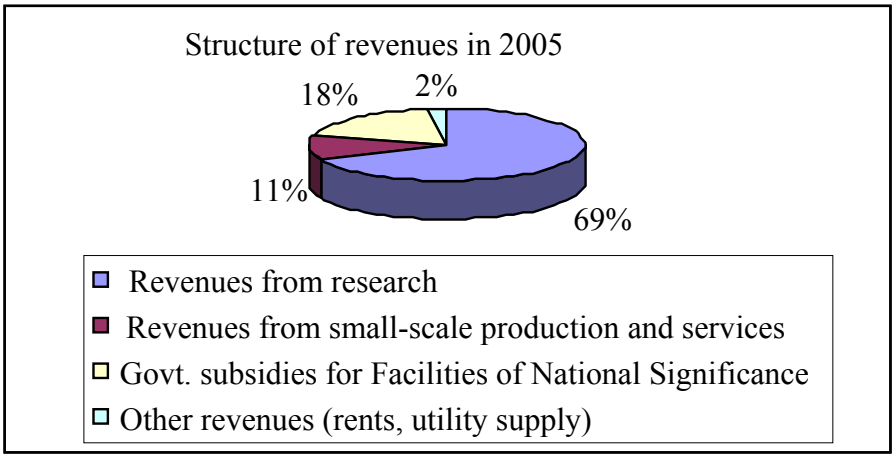


Chart 2

Research, the core activity, naturally accounted for over two-thirds, or 69%, of revenues. Subsidies for the institute's facilities of national significance also rose sharply from the previous year to 18% of total revenues. Earnings from small-scale production and services, though down from 2004 level, were still significant, accounting for 11% of total revenues and contributing to a large extent to the net profit IFIN-HH reported in 2005. Job cuts of nearly 7%, after a slight increase in workforce in 2004, also helped boost the profit and proved the rise in turnover relied on higher labor productivity. Actually, productivity grew steadily over the past three years. In 2005, it nearly doubled year on year, as Chart 3 shows.

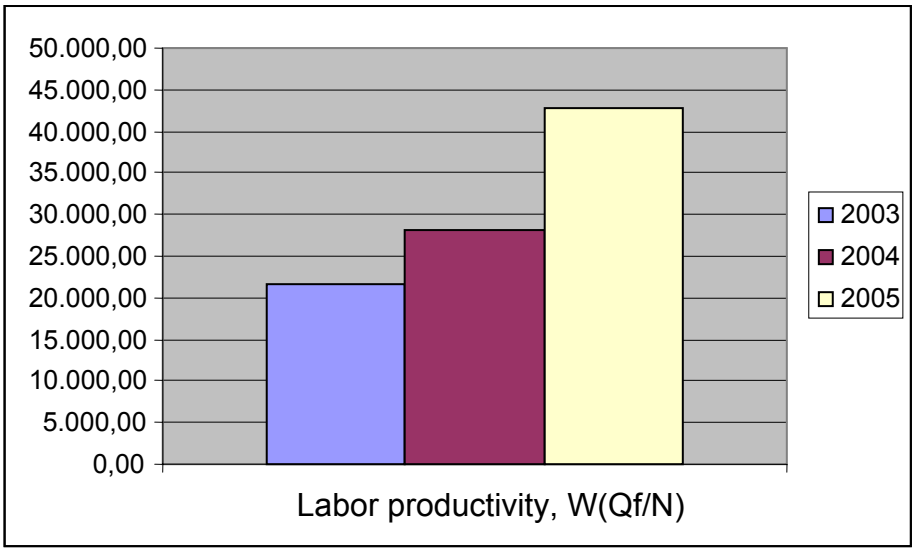


Chart 3

To a business organization, profit is the reason for being in a market economy. It arises from the interplay of supply and demand and depends on sound policy and a good management of resources. Research institutes, the core activity of which does not fetch profit, cannot be judged by the same yardstick as businesses.

The institute's capacity of making profit lies solely in its fringe production of goods and services and depends on a good understanding of consumer demand and the needs of domestic economy. As in any other trade, profitability means gaining more than one spends

and is reflected by the profit itself (a volume indicator), while the profitability rate (a quality indicator) shows the extent to which resources are well utilized.

Gross profit = Total revenues – Total expenses

Net profit = Gross profit – Profit tax

Profit evolution in the years 2003 to 2005 is illustrated in Chart 4. Pretax profit plummeted to RON 4,050 in 2004 down from RON 25,057 the year before, and then bounced back last year to RON 34,785.

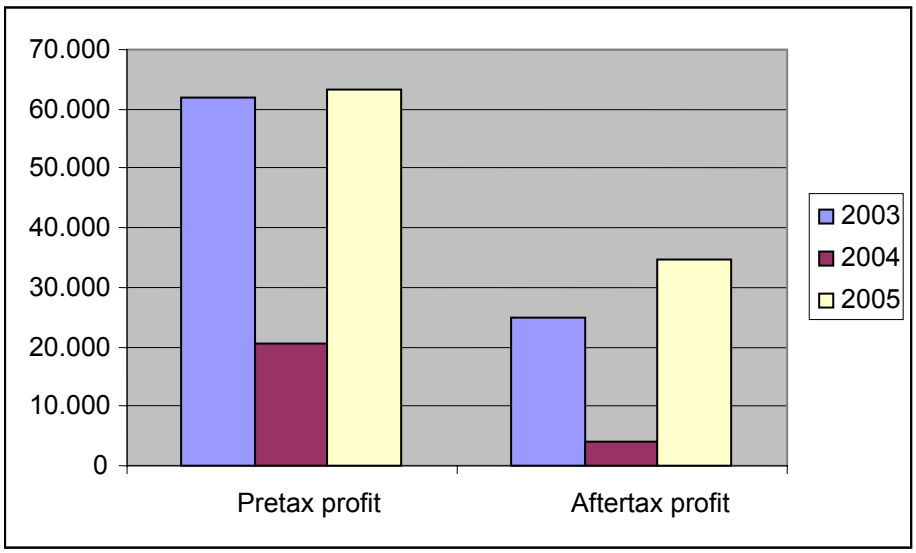


Chart 4

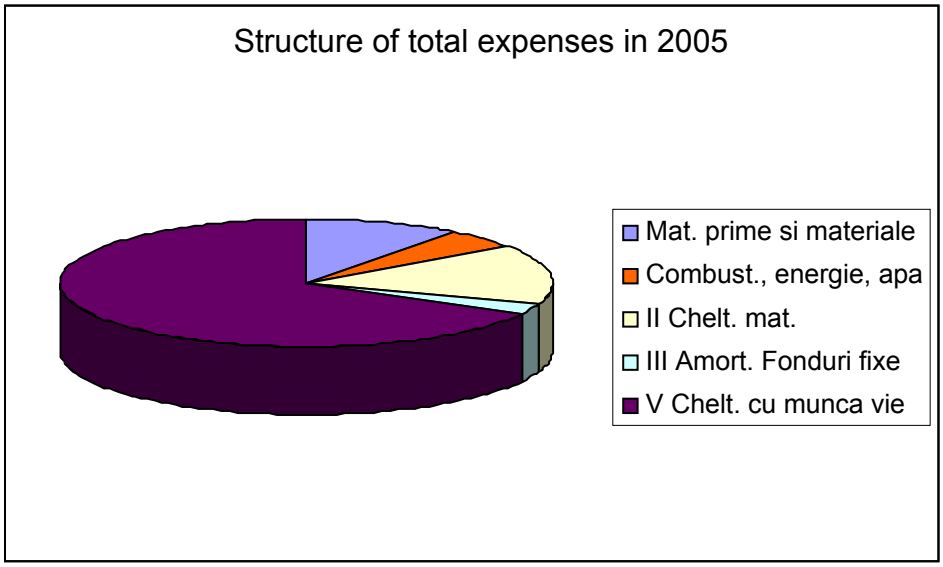


Chart 5

Total expenses impact considerably on profit and institute activity as a whole. Overspending obviously puts a lot of pressure on any organization that needs to make more money to keep afloat. Chart 5 shows the structure of institute expenses in 2005. Raw materials accounted for about 6% of total expenses in 2003 and 2004, but rose to 8% in 2005. Some savings on overheads is also noticeable, as their share in overall expenses shrank by one percentage point year on year to 5% in 2004, and then to 4% in 2005. Labor costs, which represent the bulk of expenses, also decreased in percentage to 56% in 2004, down

from 61% a year earlier, and to 53% in 2005. Their share dropped mostly on the back of higher revenues, which after many lean years, stimulated a development of the research infrastructure paving the way to a recovery in this area.

Expenses per thousand RON of turnover are an important indicator of economic efficiency:

$$E1000 = (E/T) \times 1000$$ where: E = total expenses and T = turnover.

The value of E1000 indirectly reflects the structure of productivity via unit cost (c) and price per unit product (p). From this perspective, the results have been low compared to efforts for the past three years when the institute continued to spend more than RON 1,000 to deliver RON 1,000 of products (Chart 6). However, this is rather typical of scientific research that takes somewhat longer than other activities to materialize. As a result, process cycles often extend over more than a year, and part of 2005 expenses are immobilized in unfinished output and services the delivery of which is still underway.

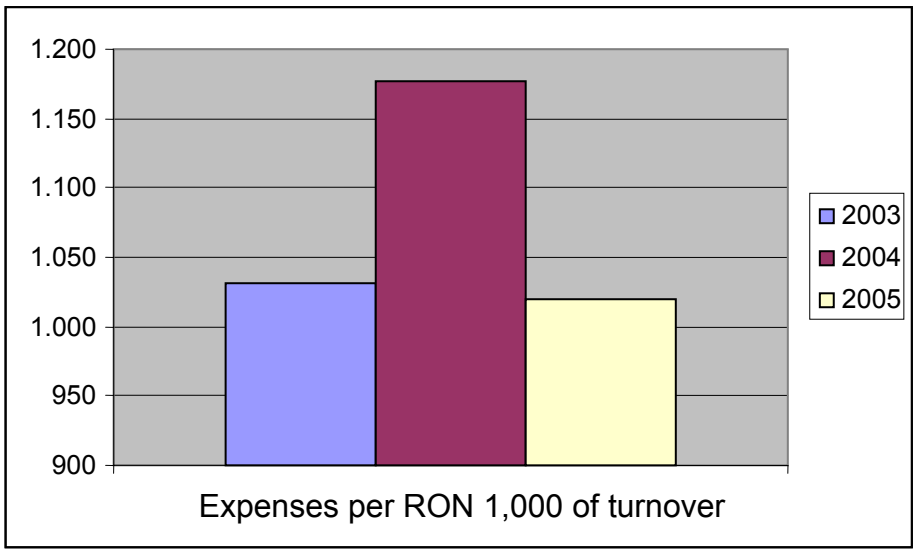


Chart 6

In the circumstances, the institute gets typically strapped for cash and would occasionally need some bank loans to get going. Yet borrowing is beyond bounds, as we administrate public goods on which interest is paid. As a consequence of this conundrum, E1000 specifically tops RON1,000 and the institute goes in arrears on its payments. The evolution of arrears for the period 2003–2006 is shown in Chart 7.

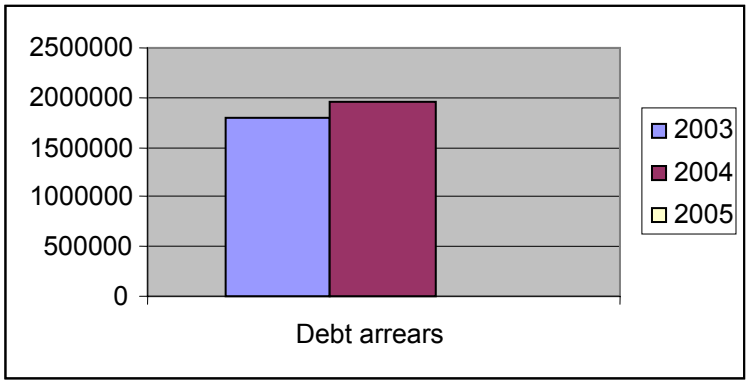


Chart 7

Thanks to management efforts to cut costs by a restructuring program applied in 2005 and at the same time boost revenues by winning more funds in project competitions under the National Research Authority Research Excellence Program (CEEX), IFIN-HH successfully settled its arrears in 2005. Debts still appearing on the balance sheet were owed for new equipment acquisitions in late 2005 and had been pay back by the end of February 2006.

Assets (A), which may be fixed (FA) or current (AR), and liabilities (L) are the two basic concepts of financial management that illustrate the institute's commercial and legal relations with fellow other organizations and the state government.

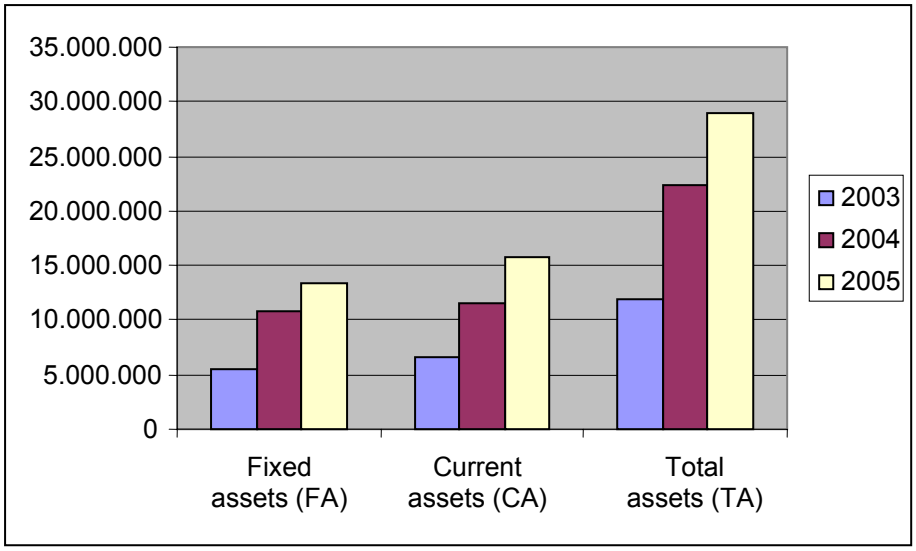


Chart 8

Chart 8 reflects the brisk dynamics (by an index of 1.87) of total assets in the period 2003–2004, as a result of a sharp upsurge in fixed assets (index 2.00), following equipment acquisitions under various research contracts. Current assets, which include materials, finished goods, cash, monies due, and all it takes for ordinary work, were up 4.4% in 2004, compared with an increase by only 1.15% in turnover, which proves good solvency and the potential for smooth operation without major crunches. Current assets rotation improved to 1.65 in 2005, up from 1.62 a year earlier, indicating a rise in productivity. Also, the institute made remarkable efforts to cut down the share of finished goods, which led to higher accounts receivable and cash (78%, up from 61% in 2004), and consolidated its finances.

4. MANAGEMENT

4.1. Top management

Management Board: 7 members
Board of Directors: 5 members
Scientific Council: 23
Heads of research & development divisions: 11
Heads of departments and administrative-auxiliary services: 13

The Management Board held 12 meetings in 2005, and the Board of Directors held 39, including 12 to which various heads of divisions and departments, depending on the agenda, were invited.

4.2. Divisions and departments

The various departments and administrative services, depending on their specific activity, operate under direct coordination of a director.

The research & development divisions have a high degree of autonomy. Depending on their specific tasks, they are coordinated by top management members, as follows:

WHO	IS IN CHARGE	OF WHAT:
- director general		management and human resources
- scientific director		scientific activity
- technical-administrative director		technical and administration issues
- economic director		commercial activity
- nuclear safety director*		nuclear safety
- scientific secretary		scientific events, dissemination, etc.

*See **Appendix 3: IFIN-HH Organization Chart***

4.3. Economic Service

Economic department

Three offices – finances, accounting, and contracting – ensure the economic functioning of the institute.

The *financial office* is responsible for calculating wages and other payments employees may be entitled to (e.g., vacation paychecks, overtime, night rates, etc.); calculating and paying salary-related taxes and charges to local authorities, central government, and various funds; preparing and submitting payroll tax reports; dispensing and receiving payments in cash or otherwise through bank and cash desk; checking and processing deductions.

* The technical-administrative director temporarily fills the position which is currently open.

Accounting is responsible for collecting, recording, and processing specific data, particularly documents used to draw up the balance sheet; recording all economic and financial operations in the ledger; etc.

The tasks of the *contracting office* include: executing financing contracts; checking contractual paperwork; keeping track of commercial contracts; preparing price decisions; keeping employee records; preparing payrolls; preparing and supplying statistic data.

Procurement and Foreign Trade Department

This group is responsible for procurement, investment, import and export deals, and deliveries.

4.4. Administrative Service

Main administrative activities in 2005:

- Ensuring technical conditions for the operation of IFIN-HH facilities and equipments according to the norms in force:
  - Lifting and pressure equipments under supervision of ISCIR
  - Natural gas transport and distribution network
  - Electricity supply

- Efficient utilization of resources:
  - Cutting power distribution loss in relations with subconsumers.
  - Mounting cold water and heating meters in most buildings and isolating them from main supply by shutoff valves.
  - Carrying out high quality repairs and fixture changes on the divisions' requests.
  - Checking up technical conditions at the power station and making only strictly necessary repairs.
  - Cutting fixed telephone expenses as part of institute overhead.
  - Renegotiating power acquisition contract to take advantage of IFIN-HH status as eligible consumer.
  - Terminating natural gas and power supply contracts with non-IFIN-HH consumers.
  - Transferring fire brigade utility supply to the county council in accordance with revised legislation in this area.
  - Making extra income from waste utilization.

- Ensuring legal operation conditions
  - Preparing and submitting documents to seek environmental license.
  - Taking steps to transfer management of offsite sewage to the local community.
  - Testing IFIN-HH wastewater discharges to document need of a water treatment station.

4.5. Assistance and control services

Legal Department:

- 20 court actions (labor and commercial litigations);
- review and acceptance of 251 research, commercial, and economic contracts;
- participation in 41 auction and tender selection panels;
- review and acceptance of personnel related papers (decisions, petitions, etc.);
- dispensing legal counsel to management and employees.

Financial Audit and Control Department:

- 13 regular verifications and an additional 6 on request of the management were conducted in 2005. The checks were carried out at both central and department levels, and focused on the correct management of IFIN-HH assets; observance of the laws in force, internal regulations, and management decisions; accurate supervision of project and contract costs, etc.
- No damages or claims were reported and no sanctions were imposed as a result of the verifications.
- Following the verifications, the department suggested 35 corrective measures, 20 of which were implemented; implementation of 12 others is underway, while 3 were only partly carried out for lack of necessary funding or technical conditions.
- On management request, the department checked the situation of the institute's real estate properties, following numerous asset separations, cessions, etc., under several government decisions over the past decade.

Human Resources Department:

- Keeping personnel records (hire and fire records; personnel dynamics, etc.);
- Implementing a restructuring program – February 2005;
- Holding hiring and promotion tests.
- Issuing some 800 papers to former employees; issuing various papers to current employees;
- Updating individual employment records;
- Handling paperwork related to working trips abroad;
- Preparing, negotiating, registering, and revising the collective labor agreement;
- Providing secretarial assistance to board meetings.

5. RESULTS

5.1. Theoretical Physics Division

5.1.1. Main results

- ***Exotic nuclei*** (BR-NA-2)[†]. Modeling of break-up reactions of proton-halo nuclei at intermediate energies; structural information on weakly bound nuclei. [N.I. Ashwood, *F. Carstoiu* et al., Phys. Rev C 72 (2005) 024314 si *V. Baran* et al., Phys. Rep. 410 (2005) 335.]
- ***Cluster decay*** (BR-NA-2). Decay width calculation on the spin levels of fragments emitted in 252Cf nucleus cold fission; width measurement on spin was advanced as an experimental way to determine neutron density in neutron-rich exotic fragments [*D.N. Poenaru, R.A. Gherghescu* and W. Greiner, Nucl. Phys. A 747 (2005) 182.]
- ***Double beta decay and neutrino physics*** (BR-NA-5). Deduction of limits on electron neutrino mass by combining theoretical calculations, experimental lifetime values in double beta decay, cosmological data, and neutrino oscillation parameters. [*S. Stoica*, "Exotic Nuclei and Nuclear & Particle Astrophysics", Mamaia, June 13-24, 2005.]
- ***Quantum models with extended symmetries*** (BR-MI-3). Detailed study of the general form of causal commutation relations for models with extended symmetries; the positivity condition of the scalar product was found to impose tough restrictions on physically relevant models. [*I. Caprini* and J. Fisher, Phys. Rev. D 71 (2005) 094017.]
- ***Quantum-dynamical symmetries in curved spaces*** (BR-MI-1). Classical and quantum symmetries and conservation laws were studied for geodesic motions in spaces curved under the influence of gravitational interactions; the Atiyah-Patodi-Singer index was calculated, and the gravity anomaly in the generalized Taub-Newman-Unti-Tamburino curved space was evaluated. [I. Cotaescu, S. Moroianu and *M. Visinescu***,** J. Math**.** A 38 (2005) 7005.]
- ***Localized and extended structures in nonlinear reaction-diffusion systems*** (BR-MI-4). Statistical investigation of the modulational instability in discrete nonlinear systems: nonlinear Schrödinger equation, Ablowitz-Ladik equation, and discrete deformable NLS equation. [*D. Grecu, A. Visinescu* et al., TMPh, 144 (2005) 924.]
- ***Space-time vector solitons in bimodal nonlinear systems*** (BR-MI-4). Families of spatiotemporal (2-component) vector solitons were identified in bimodal systems. The advantage of using vector solitons in nonlinear processes was demonstrated: due to their lower chemical potential, vector solitons are more stable than their scalar counterparts. [*D. Mihalache, D. Mazilu* et al., Phys. Rev. Lett. 95 (2005) 023902; *N.C. Panoiu*,…, *D. Mazilu and D. Mihalache*, Phys. Rev. E 71 (2005) 036615.]
- ***Parametrizations of complex Hadamard matrices*** (BR-PF-2). Determining conditions for the equivalence of two Hadamard matrices; establishing a theorem on the existence of solutions and finding an upper limit on their number. [*P. Dita*, J. Phys. A 38 (2005) 2657.]
- ***Nuclear structure models*** (BR-NA-1). Development of a shell model with complex wave functions and of a self-consistent QRPA method with restored symmetries and nuclear spectrum description. [R. Betan , R.J. Liotta, *N. Sandulescu*, T. Verste, Phys. Rev. C 72 (2005) 054322; R. Betan,..,*N. Sandulescu*,…, J. Phys. G 31 (2005) S1329; *D.S. Delion*, P. Schuck, J. Dukelsky, Phys. Rev. C 72 (2005) 064305.] Description of nuclear shape phase

[†] Acronyms refer to IFIN-HH research areas, as listed in Section 1.

transitions by a coherent state model [A.A. Raduta and A. Faessler, J. Phys. G 31 (2005) 873].

- ***Contributions to an artificial limit on the time-dependent Schrödinger equation*** (BR-MI-5). Improved convergence conditions to the numerical resolution of resonance problems via time-dependent two-dimensional Schrödinger equation with applications to the study of proton emission from spherical and deformed nuclei in time-dependent formalism. Tunneling problems, decay rates, and half-times were calculated. [N. Carjan, *M. Rizea* and D. Strottman, Com. Phys. Commun. 173 (2005) 41.]
- ***Statistical processes and models in condensed matter physics*** (BR-AM-1,2). Calculation of low spectrum branches of a quantum particle coupled to a Bose field [*N. Angelescu*, R.A. Minlos and V.A. Zagrebnov, Rev. Math. Phys. 17 (2005) 1111]. Probability distributions in the time series of statistical events (that satisfy scaling rules) and their application to seismic predictions [B. F. Apostol, *L.C. Cune si M. Apostol*, in *Of Geophysical Episodes – An Introduction to Theoretical Seismology*, apoma, MB (2005).] Eccentricity development for orbits of three gravitational bodies. [M. Apostol, J. Theor. Phys. 120, 1 (2005).]

5.1.2. Other results

- BR-NA-1,5: Description of collective excitations and pairing correlations in neutron stars; description of nuclear excitations in a nuclear model based on boson developments; description of elastic proton scattering on the exotic nucleus ^{17}Fe; synthesis of A=98-114 nuclei in isobaric reaction channels; description of even-even isotopes of Ti; computation of nuclear matrix elements for neutrino double beta decay in deformed nuclei; new results in full-RQRPA approximation; analysis of prompt dipole gamma emission; time-scale calibration for fragments from nuclear cluster decay; dynamical fission studies; isospin transport at Fermi energies.
- BR-PF-5: Special solutions for Ricci flow equation in 2D; Dirac operators in curved spaces and role of Killing-Yano tensors; freezing of perturbative QCD in Minkowski space; bounds on the slope and curvature of scalar Kpi form factor at zero momentum transfer; massive gravitation as quantum gauge theory.
- BR-MI-2: Coherent state Lie algebras were realized by first-order differential operators with holomorphic polynomial coefficients on Kaehler coherent state orbits. Explicit formulas involving the Bernoulli numbers and structure constants were proved for semisimple Lie groups.
- BR-MI-5: Multicolor solitons in two-dimensional lattices; decoherence in open quantum systems; coherent state representations of Lie algebras by holomorphic differential operators; modulational instability of coupled nonlinear equations; development of a coupled chain model.

5.1.3. Excellence milestones

International agreements and collaborations

- JINR Dubna (see Section 2.2.1): Titeica-Markov and Hulubei-Meshcheryakov agreements.
- CERN-Geneva (see Section 2.2.2): participation in ATLAS and LHCb.
- Polytechnic Institute, Univ. of Barcelona, 2002–2005, Fundamental studies for optical solutions for the transport information storage [D. Mihalache].

- DFG-supported Romanian-German cooperation project, 2005–2007, Stability of heavy and superheavy elements [D. Poenaru].
- Collaboration convention between Cote d'Azur Observatory, France, and IFIN-HH, 2003-2006, Neutron star physics; Neutrino physics [S. Stoica].
- Collaboration agreement with the University of Gent, Belgium, 2005–2007, Special algorithms for solving Schrödinger equations and development of a high-accuracy MATLAB software [L. Ixaru].
- Other collaborations: GANIL; Los Alamos; MPI-Heidelberg, Univ. of Iowa; Univ. of Frankfurt. Univ. of Texas A&M; Birmingham School of Physics; Inst. Of Theoretical Physics, Univ. of Zürich; Univ. of Barcelona; Univ. of Dresden; Univ. of Bern; Univ. of Mannheim; CEN Bordeaux, Univ. of Gent, Univ. of Sao Paulo.

Scientific productivity: 53 ISI articles; ~ 40 other publications, 16 invited lectures; 32 oral communications; ~ 15 scientific seminars.

Staff qualification: 1 member of the Romanian Academy, 14 doctoral thesis supervisors, 2 university professors, 11 associate professors, 1 lecturer, 42 physics PhDs, 13 international journal referees, 8 national project evaluators, 29 members of international science associations, 4 board members of international science journals, 1 international award, 1 national award.

Internal and international scientific events organized in 2005:

- Summer School in "Exotic Nuclei and Nuclear/Particle Astrophysics," Mamaia, June 13–24, 2005; S. Stoica and R.Tribble.
- Workshop on "Low-x physics," Sinaia, June 28– July 3, 2005; I. Caprini and S. Stoica.
- Summer School in "Trends in Contemporary Optics," Sinaia, September 25 –October 8, 2005; I. Mihalache and T. Tudor.
- 3-rd International Workshop on Quantum Physics and Communications, QPC2005, Dubna, Russia, June 30–July 3, 2005; G. Adam.
- Exotic nuclei in relativistic and non-relativistic models, CEA-Saclay, November 2005; N. Sandulescu.
- Nuclear Shell Model, CEA-Saclay, June 2005, N. Sandulescu.

5.2. Particle Physics Division

5.2.1. Main results

- ***Participation in the installation and startup of ATLAS detector*** (BR-PF-1). The Tile Hadron Calorimeter, in which the division's ATLAS group is involved, was used in the first real event ever observed with the ATLAS detector June 21, 2005. Tilecal's premiere recording of cosmic muon events, a result *Nature* announced in July 2005, was a major milestone on the road to the installation and startup of ATLAS in UX15 underground experimental hall at CERN's LHC.
- ***Study of decay modes of the charm baryon Λ_c^+*** (BR-PF-1, 3). As part of the FOCUS collaboration, the branching ratios relative to the decay channels $\Lambda_c^+ \rightarrow \Lambda\pi^+$, $\Lambda_c^+ \rightarrow \Lambda\pi^+ \pi^+ \pi^-$ si $\Lambda_c^+ \rightarrow \Lambda K^+ K^0$ were determined in terms of the reference channel $\Lambda_c^+ \rightarrow pK^+ \pi^-$ with higher accuracy than existing results published in the latest (2004) edition of the Particle Data Group [J.M.Link, .. , *D.Pantea*, .. et al., Phys. Lett. B624:22-30, 2005].
- ***New results in the search for charmed pentaquark baryons*** (BR-PF-1, 3). In 2004, the H1 collaboration at Germany's DESY laboratory reported the detection of the first charmed pentaquark $q^4\bar{q}$ as a narrow peak at mass of 3099 MeV $\pm$ 3 (stat) $\pm$5(sist.) MeV/c^2 in $D^{*-}p$ system. In this paper, FOCUS collaboration, which analyzed a statistically superior sample than H1's, said it had found no trace of any pentaquark with charm. Our results are in agreement with those of recent ALEPH (CERN) and ZEUS (DESY) experiments, which also invalidated the H1 result [J.M.Link, .. , *D.Pantea*, .. et al., Phys.Lett.B622:229-238, 2005].
- ***Precision measurements of kaonic hydrogen, an exotic kaon-proton state of atomic type*** (BR-PF-1). Using Charged Coupled Devices (CCD), to measure the energy of x rays emitted in the transitions to the ground state of kaonic hydrogen, the DEAR experiment provided the most precise values yet obtained for the shift and width of the 1*s* state due to the K^-p strong interaction. DEAR also became the first experiment to observe transitions from different excited states, clearly identifying K_α, K_β and K_γ lines. The landmark results [G.Beer, .., *M.Bragadireanu, T.Ponta*, .. et al., Phys.Rev.Lett.94:212302, 2005.] were announced in various publications, including CERN Courier Vol. 45, No. 6 (2005).
- ***New measurements of J/ψsuppression in Pb-Pb collisions at 158 GeV per nucleon*** (BR-PF-1,3). Using the improved NA50 device, new experimental data were obtained with respect to the normal suppression of J/Psi and Psi' mesons in proton-nucleus collisions. The results confirmed the anomalous suppression of J/Psi and Psi' mesons in Pb-Pb collisions at 158 GeV per nucleon, which pointed to the presence of a deconfined state of matter, the quark-gluon plasma [B.Alessandro, .. *C.Alexa, V.Boldea, S.Dita*, … et al., Eur.Phys.J. C39:335-345, 2005].
- ***New results on the Cherenkov effect*** (BR-PF-1). A new mechanism was introduced for coherent gamma generation, called Super-Cherenkov Radiation (SCR). Generation is expected to take place once the Cherenkov condition $\cos\theta_{sc} = v_{xph}\, v_{\gamma ph} \leq 1$, where v_{xph} is the phase speed of a charged particle in the medium, has been satisfied. Experimental tests of SCR observed with RICH detectors were presented *[D.B.Ion*, M.L.Ion Rom.J.Phys.50:947-956,2005].

5.2.2. Other results

- GRID-ATLAS node goes into operation at IFIN-HH Particle Physics Division. The process consisted of several stages: (i) development of a minimal 5-server hardware configuration for the ATLAS testbed, on which LCG middleware was successfully installed;

(ii) registration of the division's GRID-ATLAS node with the Grid Operations Center (see http://goc.grid.sinica.edu.tw/gstat/RO-02-NIPNE/); (iii) periodical updates of LCG middleware; (iv) extending the configuration to 50 CPUs and 4.5 TB storage capacity through investments under the division's projects under CEEX, CERES, and CORINT.

5.2.3. Excellence milestones

International collaborations:

- JINR Dubna (see Section 2.2.1): CDF.
- CERN Geneva (see Section 2.2.2**)**: ATLAS, LHCb, NA50.
- European Commission (see Section 2.2.4**)**: project supported under FP6: I3HP-JRA10 (SIDDHARTA)
- INFN Italy (see Section 2.2.5): FOCUS with INFN Pavia; CDF and ATLAS with INFN Pisa; DEAR, SIDDHARTA, and VIP with LNF.
- IN2P3-France (see Section 2.2.6)**:** ATLAS with CPP Marseilles and LLR Paris.
- GSI Darmstadt: PANDA (collaboration started in 2005, LoI 2005, MoU drafting underway) experiment under project FAIR.

Scientific productivity: 19 ISI articles; 2 papers in Rom. J. Physics, 5 papers in electronic archive. Total no. citations: 79.

Staff qualification: 1 doctoral thesis supervisor, 1 associate professor, 13 physics PhDs, 2 national project evaluators, 3 members of international science associations.

Other notable results: RO-02-NIPNE, Romania's second Grid node officially registered with LCG, went into operation at IFIN-HH Particle Physics Division in 2005.

5.3. Nuclear Physics Division

5.3.1. Main results

- ***Exotic nuclei*** (BR-NA-1). Exotic nuclei far from stability were for the first time observed and first spectroscopic measurements of their properties were conducted. Example: the nucleus with N=Z+1 ^{91}Rh [*N. Marginean, C. Rusu, D. Bucurescu*, …, *M. Ionescu-Bujor, A. Iordachescu*, …, Phys. Rev. C72(2005)014302]. Observation of the excited state 0+ in ^{44}S was interpreted as experimental evidence of shape coexistence in this nucleus and erosion of the magic nature of N=28 in neutron-rich nuclei [S. Grevy, *F. Negoita, I. Stefan, ..., R. Borcea, A. Buta, ..., D. Pantelica*, …, Eur. Phys. J. A25, Suppl. 1(2005)111].
- ***Phase transitions in the nuclear structure*** (BR-NA-1). Critical point symmetries, e.g. the X(5) symmetry in the ^{166}Hf, were explored [E.A. McCutchan, *N.V. Zamfir* et al., Phys. Rev. C71(2005)024309]. The X(5) symmetry in the interacting boson model was described [E.A. McCutchan, *N.V. Zamfir*, R.F. Casten, Phys. Rev. C71(2005)034309].
- ***Dynamical one-particle effects in fission cross-sections at threshold*** (BR-NA-2). A new model, based on the interaction between one-particle effects and resonances in the second potential well, was developed to account for intermediate resonances in the neutron-induced effective fission cross section [*M. Mirea* et al., J.Phys. G31(2005)1165].
- ***New modeling of nuclear multifragmentation phenomena*** (BR-NA-3).Volume was redefined as a basic thermodynamic observable and estimated in the case of nuclear

multifragmentation reactions. A potential determination of the freeze-out volume using kinetic energy spectra of intermediate-mass fragments was studied [*Ad. R. Raduta* et al., Phys. Lett B623(2005)43; Phys. Rev. C72 (2005) 057603].

- ***New data on the equation of state for nuclear matter*** (BR-NA-3). Measurements of the excitation function of elliptic flow at midrapidity in Au+Au collisions at beam energies from 0.09 to 1.49 GeV per nucleon. New information on the equation of state of compressed nuclear matter is obtained by comparisons to microscopic transport model calculations [*A. Andronic* and FOPI-Collaboration, Phys. Lett. B612(2005)173].
- ***New remarks on model parameters used in recent nuclear data evaluations*** (BR-NA-4). A nuclear temperature-dependent nuclear density was introduced in the double-folding model designed for calculating α–particle optical model potentials (OMP), and differences between the potentials describing elastic scattering and those describing the emission of these particles were explained [*M. Avrigeanu* et al., Nucl. Phys. A764,245(2006)] [*M. Avrigeanu, ... V. Avrigeanu*, Nucl. Phys. A759(2005)327; P. Reimer, *V. Avrigeanu*, Phys. Rev. C71(2005)04617].
- ***Detection of atmospheric radio flashes from high energy cosmic rays*** (BR-NA-5). The detection of radio waves associated with cosmic ray air showers by the KASCADE-Grande system is expected to help determine the composition of ultrahigh energy cosmic rays and detect high energy neutrinos [A. Falcke,…, *A.F. Badea*, … *A. Bercuci*, …, *I.M. Brancusi*, …,*B. Mitrica*,…, *M. Petcu*, …,*G. Toma* et al., *Nature*, 19 May 2005].
- ***Lifetime of $\pi^+\pi^-$ atom*** (BR-AM-3). Determination of the $\pi^+\pi^-$ atom lifetime at CERN's DIRAC. The preshower detector of this facility, entirely made by experts at IFIN-HH, was used online in zero and first level trigger system, and offline in selecting and rejecting background events (electron pairs). The results confirmed the concepts of the Chiral Perturbation Theory, a nonperturbative QCD component, a field that right now can hardly be explored anywhere else in the world [B. Adeva… *M. Pentia* et al., Nucl. Phys. B619(2005)50].
- ***Variational calculation of the isospin mixing effect on the Fermi superallowed beta decay in the mass region A=70*** (BR-NA-1). Variational procedures were for the first time used for studying the influence of Coulomb interaction-induced isospin mixing on the Fermi superallowed beta decay in two nucleus isovector triplets with A=70. The results were in agreement with existing data, and predictions were made that strong non-analog Fermi transitions might be identified experimentally [A. Petrovici, K. W. Schmid, O. Radu, A. Faessler, Nucl. Phys. A747(2005)44].
- ***Advanced radiation detectors and related electronics*** (AR-ADS-2, TD-MP-1). Fabrication of one-third of the 108 TRD modules (transition radiation detectors) for the ALICE experiment, which in turn account for 20 percent of the total number of modules that are being made at 5 European laboratories. Making of TRD and RPC (Resistive Plate Counter) for high counting rates and increased efficiency for CBM project. Original front-end electronics for TRD and RTC detectors [CORINT – ALICE Project].

5.3.2. Other results

- BR-NA-1: New high spin states were identified in $^{92\text{-}96}$Zr nuclei populated in fusion-fission reactions; the level scheme was extended, and spins and parities were tentatively assigned based on weak coupling arguments. Spherical shell model calculations were also extended to high spins, and the energy of the observed levels could be reproduced. However, further calculations within a broader model space will be necessary to provide a consistent interpretation of all of the new states that were identified [*D. Pantelica, I. Stefan, N. Nica* et al., Phys. Rev. C72 (2005) 024304].

- BR-NA-4: Measurements were performed to characterize a broad variety of materials: PZT thin films [*D.Pantelica, ..., P. Ionescu, F. Negoita*, Nucl. Instrum. Meth. B240(2005)400.], Al-doped ZnO [E. Gyorgy,...*D.Pantelica*, App. Surf. Sci. 248(2005)147.], as well as implants and defects in $MgAl_2O_4$ single crystals [*D. Pantelica, P. Ionescu, F. Negoita, N. Scintee* et al., Nucl. Instrum. Meth. B240(2005)376].
- BR-AM-4: Phase transitions in ferroelectrics were explained by neutron scattering measurements of the main parameters describing the molecular dynamics of NH_3 groups in triglycine sulfate and NH_4 groups in ammonium phosphate [*V. Tripadus, A. Radulescu* et al., Chemical Physics (in the press)].
- BR-NA-5: The geometric distribution of high energy (>100GeV) hadrons at the core of air showers was studied using the central detector (calorimeter) at KASCADE-Grande. Hypothesized interaction mechanisms at ultrahigh energies were tested by comparison with simulation results [*T.Antoni,..., A.F. Badea, ... A. Bercuci, ..., I.M. Brancusi, ..., M. Petcu* et al. Phys. Rev. D71(2005)072002].

5.3.3. Excellence milestones

International collaborations:

- JINR Dubna (see Section 2.2.1), CERN Geneva (Sec. 2.2.2), IAEA Vienna (Sec. 2.2.3)
- European Commission – FP6 (Sec. 2.2.4): EURONS, EURISOL
- INFN Italy (Sec. 2.2.5), IN2P3 France (Sec. 2.2.6)
- Participation in FAIR (GSI Germany) and SPIRAL-2 (GANIL France)
- "Structure of Exotic Nuclei" Project with DFG Germany (2002–2007; A. Faessler, A. Petrovici)
- bilateral agreements with universities and research centers

Scientific productivity:

Research area		Journals		Conferences
		ISI	Non-ISI	
1.	Atomic physics	2	-	1
2.	Nuclear structure	32	2	9
3.	Nuclear interactions	3	-	2
4.	Hadron matter	8	-	13
5.	Nuclear interactions in atmosphere	5	1	3
6.	Nuclear data evaluation	4	-	3
7.	Nuclear method applications	7	2	14
8.	Neutron physics	2	-	2
	TOTAL	63	5	47

Staff qualification: 1 corresponding member of the Romanian Academy, 11 doctoral thesis supervisors, 9 associate professors, 56 physics PhDs, 11 PhD candidates, 6 international journal referees, 7 MA candidates, 22 project managers.

Scientific events organized in 2005:

- International Workshop on "Transition Radiation Detectors – Present & Future," ALICE & CBM Collaborations, September 24–28, 2005, Cheile Gradistei, Romania.
- Meeting of EWON (East-West Outreach Network) and SEENet (South-East European Network in Nuclear Physics), an international event under FP6 EURONS; May 13-14, 2005, Bucharest.

5.4. Tandem Accelerator Division

5.4.1. Main activities/results

- Production activity: 16 different ion species ranging from protons to Cu-63 with energies of 3 to 100 MeV were delivered to beneficiaries in basic and applied nuclear and atomic physics; total running hours: 3300 (see chart below).
- R & D activity under Nucleus Program; theme PN 03-20 02 04: "Utilization of Tandem-ECR accelerated ion beams for materials characterization and environmental studies." A negative ion source was built, mounted, and tested on an optical test stand with added electrons on lithium vapors, to produce helium ions and other ion species. Early results were promising.
- Research activity under CEEX Project No. 103/2005 (in association with the National Inst. for R & D in Earth Physics); objective: receiving warning 30 sec ahead of a major earthquake. A study on the anti-seismic protection of the Tandem accelerator was conducted.

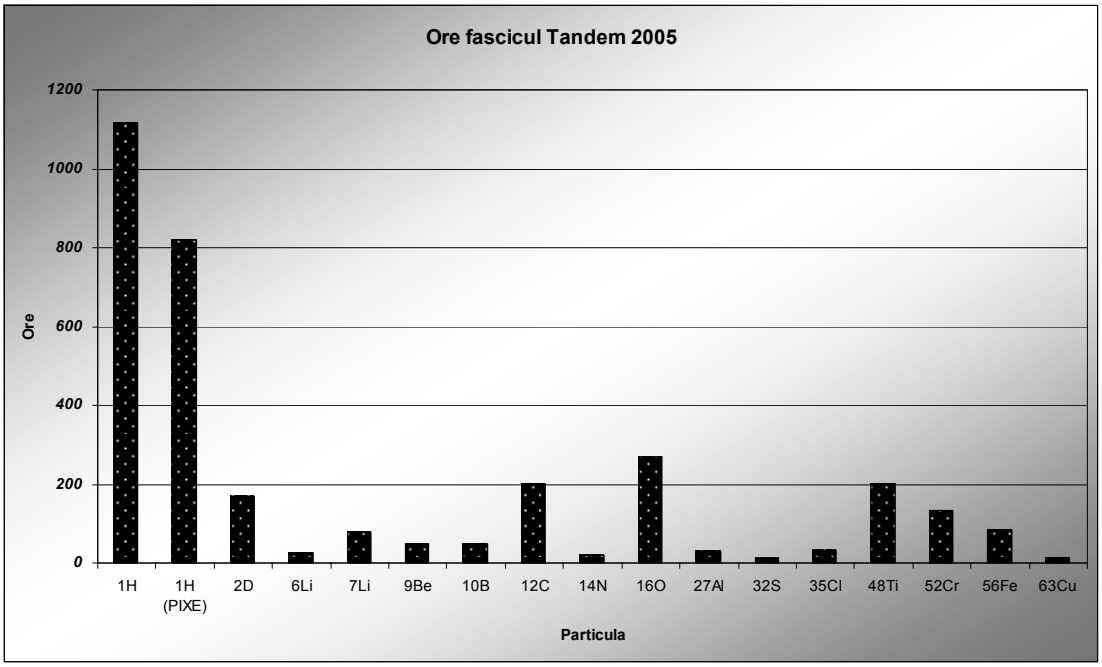


Chart: Utilization of Tandem accelerator beam hours in 2005

5.4.2. Other activities/results

Tandem Accelerator:

- Participation in R & D activities on European level: EURISOL and EURONS projects under FP6.
- Routine maintenance and repairs (300 hrs.): The vacuum systems and different supply sources that were badly outdated and worn out were fixed.
- Pressure vessel licensing: The national pressure vessel board ISCIR renewed the licenses of the Tandem gas storage tanks following hydraulic testing at 20 bar.

14 GHz ECR ion source (RECRIS):

- Defects at the microwave generator and a supply source were mended, and beam generation and transport were tested.

5.4.3. Excellence milestones

International collaborations:
Participation in the European EURISOL Project (see Section 2.2.4).

Scientific productivity: a contribution to a book on electrostatic accelerators published by Springer Verlag, Germany; several papers in ISI-rated journals; contributions to international science meetings.

5.5. Life and Environmental Physics Division

5.5.1. Main results

- ***Lymphocyte response to in vitro irradiation in increased oxidative stress pathology – multiple sclerosis*** (BR-LE-1). As part of a project under the *Bilateral Science and Technology Cooperation Program with the Flemish Community, 2005–2006*, we checked for the existence in multiple sclerosis patients of plasma-associated ambient factors that would boost chromosome aberration effects following in vitro irradiation of the lymphocytes. We tested on monocyte-free cultures of lymphocytes the cytogenetic effects radioinduced in T-lymphocyte subsets from multiple sclerosis patients [*I. Petcu, D. Savu*, A. Vral, H. Thierens, L De Ridder, prezentare poster la ERR 2005, 5-8 Sept. University of Leicester, UK].
- ***FRET and detection of membrane rafts*** (BR-LE-1). We finalized the development of a model to analyze data obtained by FRET (Förster resonance energy transfer) in cases where rafts are thought to exist in the cell membranes. The model was in agreement with relevant FRET data in the literature, lending yet more weight to the hypothesized existence of membrane rafts [*M. A. Acasandrei*, R. E. Dale, M. van de Ven and M. Ameloot, Chemical Physics Letters, 419, 469-473 (2006)].
- ***Tritium transfer to terrestrial and aquatic environments, explicitly including organically bound tritium, and taking energetic metabolism into consideration*** (BR-LE-2). A dynamic model of tritium transfer to aquatic environment including organically bound tritium, was developed for the first time. Energetic metabolism was considered in order to assess the transfer rates of tritiated and carbonated organic compounds. The first generic, no-calibration, model of tritium and carbon transfer to mammals was developed [*D. Galeriu*, R. Heling, and *A. Melintescu*, Fusion Science and Technology, 48, 779 and 795 (2005)].
- ***Original models, methods, and computation codes in the emerging field of quantitative analysis of risk and complex system vulnerability, with an emphasis on critical infrastructures*** (BR-LE-3). Models based on physical analogies (cooperative behaviors in multi-component systems), phase-portrait analysis of system dynamics (iteration maps or differential processes), cellular automaton concept, and matricial filtering of evaluation surveys (methods of Analytical Hierarchical Process-AHP-type) [*A. Gheorghe* and *D. Vamanu*, Int. J. Critical Infrastructures, vol. 1, no. 4, 2005, pp. 312-330 (2005)].
- ***Development and adaptation to Romanian conditions of RODOS and RAT expert systems*** (AR-SRP-1). Expert systems are designed for helping decision makers in the event of a nuclear accident or radiological emergency and are used in nuclear alert exercises. The systems assess radiological facts, including radionuclide activities and public exposure, in the aftermath of the accident and indicate the steps that have to be taken to contain the consequences [Participation in the nuclear alert exercise ConvEx-3, organized by the General Board for Emergencies, May 11–12, 2005].

- ***TL dosimetric system for individual monitoring, Model SD-TL*** (AR-SRP-2). The system involves the use of thermoluminescence dosemeters to measure absorbed doses in nuclear personnel and the general public. Technical specifications were prepared for the TL dosimetric system for individual monitoring – Model SD-TL [Radiological Safety License No. ST 075/2005].
- ***Preliminaries to the establishment of an underground laboratory for measurements in ultra-low background radiation*** (AR-RNB-1). Three salt mines at Slanic, Praid, and Cacica were radiologically mapped; the site for the future underground laboratory was selected, and technical solutions for the building of the experimental test stand were decided [Progress report, VIASAN Project PF-D01-PT00-1059, Contr. 65].
- ***Application of Cs-137 as an environmental tracer, an alternative to classical methods*** (AR-RNB-1). Cs-137 sedimentation rate was estimated in Romanian reservoirs and ravines (Perieni area) [*R.Margineanu, N.Popa, C. Olteanu*, oral presentation, Agriculture and Food Safety within the Context of European Union Directives, Tekirdag, Turkey, July 14-15, 2005].

5.5.2. Other results

- AR-RNB-1: Participation in spectrometric, radiometric, and radiological measurements of spent filters, historic waste, and obsolete radioactive sources in controlled areas at the Radwaste Treatment Station, Radioisotope Production Center, TEXAS Bunker, etc.
- AR-RNB-4: Initiating the creation of a laboratory to test the biocompatibility of medical materials, including some radioactive labeled products.

5.5.3. Excellence milestones

International collaborations:

- Participation as an observer and consultant in projects under EURANOS (European approach to nuclear and radiological emergency management and rehabilitation strategies) for biosphere risk assessment (FP 6 EURATOM – Sec. II.2.4)
- Participation under FP 6 in intercomparison of low activity samples by the Low Radiation International Center (LOWRAD)
- Participation in the IAEA's EMRAS program for the development of radiation safety assessment models
- Participation in IAEA CRP-12328 Project for soil erosion assessment by environmental tracer techniques
- Participation in the IAEA's network of Analytical Laboratories Monitoring Environmental Radioactivity – ALMERA
- Bilateral cooperation with the University of Gent, Belgium, on assessing lymphocyte response to in vitro irradiation in increased oxidative stress pathology – multiple sclerosis
- Participation in EURISOL by contributing computation codes and data libraries for the environmental and health impact assessment of particle accelerators in EURISOL category (Radioactive Ion Beam Facilities).

Staff qualification: 1 doctoral thesis supervisor; 3 international journals referees.

Specialized services (SpSe-6): Photodosimetric monitoring of nuclear facility personnel; internal human contamination monitoring and dose assignment by body counters; dosimetric monitoring using DIT-MF-type thermoluminescence dosemeters; environmental

radioactivity monitoring on the IFIN-HH site and radionuclide assessment in environmental samples.

Scientific productivity: 8 ISI articles; 12 non-ISI articles; 1 book; 10 invited lectures and 19 communications at scientific meetings.

5.6. Applied Nuclear Physics Division

5.6.1. Main results

Advanced materials studies and experiments:

- AR-NTA-1: Irradiations and analyses were conducted as part of a comparative study on potential materials to be used in quartz windows and data transmission optical fibers in future fusion reactors [EURATOM Progress Reports].
- AR-NTA-2: The neutron capture cross-section of the heaviest stable element ^{209}Bi was determined; it is to be applied in a future nuclear transmutation facility that will address the problem of long-lived radioactive waste [CERES 3-56 Progress Reports].
- AR-NTA-3: An AMS-based method to diagnose fusion processes in Tokamak reactors was developed; it helps to accurately determine operating parameters such as magnetic confinement and fusion efficiency [CALIST Progress Report].
- TD-AL-2: Results of our elemental analysis of a highly alloyed steel fabricated by the Corrosion and Metals Research Institute were included in the certification documents the Sevres-based European Commission of Iron and Steel Standardization issued for the material in October 2005. That steel thus became known as "European Certified Reference Material no. 379-1" [INFRAS 609 Progress Reports].

Advanced detection systems:

- AR-ADS-1: Studies were conducted on the cumulative particle generation in 4π geometry and the construction of the SPHERE spectrometer, NUCLOTRON's first experimental line for high energy interactions [Progress Report under SPHERE Project carried out in cooperation with JINR Dubna (see Section 2.2.1)].
- AR-ADS-1: Archeometric elemental analyses were carried out by X-ray fluorescence, and operations kicked off to develop a small X-ray scanner with 3D reconstruction for archeological items. This line of research is part of multidisciplinary efforts to evaluate and preserve national heritage [CEEX 70 and CEEX 72 Progress Report].
- AR-ADS-2: Research was carried out to develop resistive-plate chamber (RPC) detectors for positron emission tomography. A prototype of the RPC detector was fabricated and tested at 0.511 MeV gamma radiation. [The prototype was displayed at the International Hanover Fair in Germany.]
- AR-ADS-3: We did a simulation of a PET scanner using RPC detectors; work menus and reconstruction algorithms were used to this end. This type of detectors has helped introduce a rectangular geometry for quantum gamma detection in coincidence. FilteredBackprojection and Statistic (Maximum Likelihood) algorithms were implemented in 2D and 3D cases, and the results confirmed the viability of this approach. These structures can work as PET scanners providing 3D imaging for the entire body of a patient [CERES 3-104 Progress Report].

- AR-ADS-3: Performance tests were run on OnLine Software part of ATLAS data acquisition system in order to validate a software version for use in real beam tests. [CERES 4-1 Progress Report].

Environmental and medical applications:

- AR-SRP-2: The method used by alpha track etched detectors was homologated [PN-03-20-05-01 Project, 5th Progress Report].
- AR-SRP-2: ^{18}F was obtained by bombarding a ^{18}O-enriched water target and the injectable compound was tested for the first time in Romania on preclinical phantoms at the PET scanner of the Central Military Hospital in Bucharest [VIASAN-194 Progress Report].

5.6.2. Other results

- AR-ADS-1: Activity related to the commissioning of ATLAS, LHCb, and CMS detectors. Intense activities were carried out in 2005 at various subdetector systems: ATLAS – muon subdetector (40 man-months); LHCb – ECAL and HCAL subdetectors (18 man-months); CMS – inner core mechanical system (24 man-months).
- Five division researchers worked with colleagues at the Nuclear Physics Division to develop detection systems (TRD; RPC; CDV) for use under FOPI and ALICE projects at GSI Darmstadt and CERN, respectively.
- Two division experts took part in DFN DIRAC (CERN) and EURISOL projects.

5.6.3. Excellence milestones

International collaborations: JINR Dubna (see Sec. 2.2.1); CERN Geneva (Sec. 2.2.2) – ATLAS and LHCb.

Scientific productivity: 8 ISI articles, 6 non-ISI papers, 1 invited lecture, and 9 communications at scientific meetings.

Staff qualification: 14 physics PhDs.

Scientific events organized in 2005: International Workshop on "Ionizing Radiation Applications to Industry, Health, and Environment"– IWIRad 2005, Bucharest, June 20–21, 2005.

5.7. Cyclotron Applications Division

5.7.1. Main activities/results

- ***Positron annihilation studies*** (BR-AM-3). Evidence was found of the so-called "quantum beats" in the hyperfine orthopositronium (o-Ps) interaction in a magnetic field and in vacuum. An original method called ADPAD (Age Dependent Perturbed Angular Distribution in Magnetic Field) was used to analyze the hyperfine interaction involving o-Ps. Depolarization and relaxation processes were found in the o-Ps interactions with different gases. [Results were presented in progress reports under projects CERES 3-27 and 4-121 and in a lecture on "Positron Physics" delivered at the National Physics Conference 2005.]

- ***Studies and characterizations by nuclear methods using accelerated beams of micro- and nanostructured materials*** (BR-AM-3). Elemental and structural analyses were performed on TiNiNb-type single- and multilayered shape memory alloys designed for medical applications. [Results were presented in a progress report on "Establishing which RBS analysis methods to use on alloys and thin films depending on their composition and elemental concentration."]
- ***Nuclear infrastructure and instrumentation developments*** (TD-MP-2). Acquisition systems of mixer-router type for a time spectrometer with four STOP detectors. Computerized control of irradiation system; this piece of equipment introduces specific control and monitoring systems in industrial automation applications in order to ensure computerized control of the supply and transport of accelerated ion beams and ensure acquisition in the process [Financed under INFRAS program following our presentation of the progress report "Infrastructural acquisition and development"].
- ***Progress in seeking accreditation of laboratories using nuclear methods and beam irradiation for characterization and testing*** (TD-AL-2,3). Quality documents were prepared, as required under SR EN/ISO 17025, and testing/trials were carried out with procured/homegrown equipment. Equipments for computerized beam control and RBS dara acquisition were put into operation and tested. [Results were presented in stages 2 and 3 of INFRAS-249, which were devoted to preparing documents for SMC implementation.] Participation in Project CEEX-83 (M4) and implementation of first acquisition stage (high-purity Ge detector and high-resolution gamma spectrometric system).
- ***Production of positron-emitting short-lived radionuclides*** (TT-TM-2). ^{48}V and ^{18}F for use in positron-emission tomography, were obtained by proton and deuteron irradiation. ^{48}V sources were used for setting/calibrating the PET scanner, and ^{18}F for radiopharmaceutical production.
- ***Supply of accelerated particle beams*** (SpSe-1). The cyclotron provided some 1,500 hours of beam time in 2005.
- ***Supply of materials irradiation and characterization by nuclear techniques*** (AR-NTA-1, SpSe-3,7). Optical fibers and optoelectronic components were irradiated under cooperation with the FUSION Program of EURATOM. Neutron irradiation was used to induce scintillator and optical fiber defects. Ionic crystals were irradiated to activate some color centers. Nanolayered materials were characterized by using accelerated heavy ion (N) beams; resolutions up to 15–20 nm depth were obtained. [Results were presented at two international conferences.]

5.7.2. Other activities/results

Students from the Faculty of Electronics and Telecommunications of the Bucharest Polytechnic University held lab classes at the Cyclotron. One of them picked the RBS method as subject for the graduation paper.

5.7.2. Excellence milestones

Staff qualification: 1 corresponding member of the Romanian Academy who also supervises doctoral papers in physics.

5.8. Radioisotope Research and Production Division

5.8.1. Main activities/results

- ***Study of basic radiolytic and self-radiolytic processes*** (BR-MI-5, AR-RNB-2). Original quantum chemistry models for the assessment of basic radiolytic processes and experimental studies by FTIR spectroscopy, ESR, NMR, etc. Application range: radioactive waste management (Cernavoda NPP, Romania; FZK Germany); nanotechnologies (nanotubes); technological irradiation. [CEEX M1/05-D10-47; CERES 4-217 and 3-90; C. Postolache, Lidia Matei, Gh. Ionita *Fusion Science and Technology* (2005) **48**, 688-691; 2nd Prize for basic research at National Research Salon in 2005.]
- ***Radiopharmaceutical research and launch of new products*** (AR-RNB-3,4; TT-TM-1). Technologies for the making of radioactive raw materials ($Na_2{}^{99}MoO_4$; $Na^{186,188}ReO_4$; $^{153}SmCl_3$); fabrication technology of ^{188}Re(Sn)HEDP; SCINTIFIN-MEDRONAT kit; method for obtaining the MAb ^{125}I CEA marker; technological line design and implementation of QA system on radiopharmaceutical fabrication lines [CEEX 26, 19 and 5/2005; VIASAN 367/2004 and 284/2003; CERES 4-5/2004; PN 03-20-04-04; IAEA: 12122/RO; D. Niculae, V. Lungu, D. Chiper; *Radioterapia Cancerului Osos şi a Metastazelor Osoase Generalizate* (Radiotherapy for Treatment of Bone Cancer and Generalized Bone Metastases), ISBN 973-0-03802-3/2005; Z.Szucs, D.Dudu, Catalina Cimpeanu, A.Luca, Elena Duta, Maria Sahagia, *Journal of Radioanaytical and Nuclear Chemistry*, (2005) 265, 507-509; Marketing License.]
- ***Development of IRMA-TSH Neonatal Kit model*** (AR-SRP-3, TT-TM-1) to be used in endocrinology clinics in order to establish doses of thyroid stimulating hormone (TSH); early detection of hypothyroidism in infants will allow putting them on treatment rapidly and averting the risk of mental retardation [PN 03-20-05-04 Progress Report].
- ***Radionuclide metrology*** (AR-SRP-3). Premiere absolute measurement of ^{222}Rn by liquid scintillation method; development of a new method for the absolute calibration of ^{99m}Tc; evaluation of IFIN-HH's TDCR system as part of an international intercomparison exercise including TDCR systems of POLATOM, Poland, LNHB-CEA/DIMRI, France, and CSIR-NML, South Africa; participation in two key ^{131}I and 133Ba- intercomparisons by sending calibrated solution vials to BIPM laboratory. [CERES 3-99; PN 03-20-04-02; E.L.Grigorescu, A.C.Razdolescu, M.Sahagia, P.Cassette, Fusion Science and Technology 48, 1 (2005) 382–38; A.C.Razdolescu, M.Sahagia, E.L.Grigorescu, Romanian Journal of Physics, 50, 9-10 (2005) 957-962.]
- ***Homologations of products and technologies and securing fabrication licenses*** (TT-TI-2). SR-^{192}Ir sources used in nondestructive gamma flaw detection were homologated and cleared for fabrication. Manufacturing license was obtained for 60-Co sources used in steel and chemical industries.
- ***Laboratory accreditation*** (TD-AL-1). QA manual and procedures were prepared to seek accreditation for the Radionuclide Metrology Lab and another Lab for Testing and Certification of Radiopharmaceuticals, Radiochemicals, and Radioactive Sources [CEEX (M IV) 25/2005; INFRAS 240/2004.]
- ***Legal metrology in ionizing radiation field*** (SpSe-4). Bq- national radioactivity standard; laboratory for the calibration of radiometric devices in Health Ministry units.
- Monitoring of spent fuel storage ponds (AR-RNB-2, SpSe-8). Ensuring safe storage of spent nuclear fuel by permanent monitoring of storage water quality in the primary cooling circuit of the IFIN-HH VVR-S reactor now under decommissioning [Progress Report 12.12.2005 IAEA Contract 11967/RO; Addenda nos. 1, 2, 3/2005 to CCI 5124/2002].

- ***Assay of radioactive samples*** [SpSe-9]. Gamma spectrometry characterization of orphan sources, radioactive waste, building materials, etc.
- ***Radiopharmaceuticals and radioactive tracers*** (TT-TM-2, SSM-1). RON739,710-worth of sodium radioiodide in capsules and solution was delivered to health care units, including C.I. Parhon Institute of Endocrinology, Cluj Hospital for Adults, Cluj Institute of Oncology, and various county hospitals around the country.
- ***Radioactive sources for industry*** (TT-TI-1, SSM-2). Deliveries of ^{192} Ir radioactive sources for industrial use fetched the institute RON476,345 in 2005.

5.8.2. Other activities/results

- Use of radioisotope tracers in molecular biology, pharmacology, toxicology, etc. (BR-LE; AR-SPR-3). Synthesis of new classes of compounds with therapeutic (antiviral, antitumor) potential and radioisotope tracers. Application of radioactive tracers in research areas including biology, pharmacology, toxicology, etc. [CEEX 36/2005; CERES 3-133, 134]
- Nuclear training and advanced training (SpSe-10). Experimental work in applied physics by one master's degree candidate, 6 PhD candidates, and two graduate course lecturers.

5.8.3. Excellence milestones

International agreements and collaborations:
- IAEA Vienna, Austria, CRP. E2.10.05 – Contr. No.12921/ROM "Assurance of the traceability chain between IAEA, IFIN-HH–RML, and end-users – Romanian hospitals, for nuclear medicine radioactivity measurements"
- IAEA Vienna, Austria, CRP. Update decay data library for actinides – Contr.13341/ ROM–RBF "Improved decay data for important actinides"
- IAEA Vienna, Austria, RC12122/Ro "Comparative Laboratory Evaluation of Therapeutic Radiopharmaceuticals"
- Extension for the period 2005–2010 of a collaboration agreement in radionuclide metrology between IFIN-HH- Romania and LNE-CEA, LNHB, France
- Bilateral cooperation between IFIN-HH, Romania, and NCSR Demokritos, Athens, Greece: Preparation and Comparative Biological Evaluation of 188Re-phosphonates
- Joining COST B32 Project Proposal on Radionuclides in Targeted Therapy, under coordination of Professor Helmuth Maecke, Basel, Switzerland.

Scientific productivity: 13 ISI articles, 20 non-ISI articles, 1 book, 17 papers at international congress meetings, 18 papers at other conferences and symposiums, participation in 6 exhibitions.

Staff qualification: 1 doctoral thesis supervisor, 1 international journal referee, 1 member of an international journal board.

Affiliation to national and international scientific associations:
- IFIN-HH, represented by the Radioisotope Production Center (RPC), is a member of the Ionizing Radiation Advisory Board, Section 2, Radioactivity, of the International Bureau of Weights and Measures (BIPM), based in Sevres, France.
- International Committee of Radionuclide Metrology (ICRM), the world scientific forum in radionuclide metrology and its applications
- Romanian Radioprotection Society
- International Isotope Society: 14 members

- European Association of Nuclear Medicine: 3 members
- International Nuclear Chemistry Society: 2 members
- European Association of Research Managers and Administrators (EARMA): 2 members
- Balkan Union of Oncology: 7 members
- European Society for Therapeutic Radiology and Oncology (ESTRO): 2 members

5.9. Radioactive Waste Management Division

5.9.1. Main activities/results

- ***Collection, treatment, and storage of radioactive waste from nuclear units around the country*** (SpSe-2, TT-TE-1). Commercial orders and contracts were entered and carried out with 61 beneficiaries for the collection, conditioning, transport, and final disposal of radioactive waste. Contracts were worth a total RON 805,579. The division's aggregate earnings from commercial orders and contracts, research contracts, and ININ stood at RON 2,667,670.
- ***Transport and final disposal at Baita National Radioactive Waste Repository (NRWR) of conditioned radwaste parcels*** (SpSe-2). Radioactive waste was conditioned into a total 64 A-type parcels of 220 liters each, and moved to NRWR at Baita, Bihor; 29 parcels of 420 L each, resulting from the reconditioning of degraded 220 L parcels of historic radwaste, were transferred to NRWR.
- ***Collection, treatment, and storage of radioactive waste from within IFIN-HH*** (SpSe-2). A total 92 closed radioactive sources at different processing stages were collected from the IFIN-HH "TEXAS" building. Out of 316 kilos solid waste that was collected from within IFIN-HH, 284 kilos were processed, while the rest is still being processed or has been placed in medium-term storage.
- ***Making ready for the management of radioactive waste from the cleanup of the nuclear research reactor VVR-S*** (SpSe-2). 93 parcels of 220 L each were manufactured on request of the Nuclear Reactor Division to be used during the cleanup stage of decommissioning; radioactive wastes from the reactor cleanup were radiologically characterized.
- ***Management of radioactive waste from Spent Filter Storage*** (SpSe-2). The Spent Fuel Storage (SFS) handling system was rehabilitated. The covers of the 4 pits were lifted, and a preliminary report on the radiological findings was prepared. A work plan regarding the characterization and management of SFS radwaste will be finalized in 2006.
- ***Development of a technology to recondition Ra-226 sources for long-term intermediate storage*** (TD-DT-1). A laboratory was prepared for the management of ^{226}Ra sources by mounting in IAEA-supplied equipments (under ROM 4029-82784). Discarded ^{226}Ra sources are collected from all over the country and conditioned by the IFIN-HH Radioactive Waste Treatment Station (RWTS).
- ***Preliminary steps to seek notification of a spectrometric laboratory*** (TD-DT-1). Documents were prepared and submitted for review to the nuclear authority CNCAN to seek the notification of a Spectrometric Analysis Laboratory at the National Radioactive Waste Repository.
- ***Development of technologies for the conditioning and medium-term storage of radioactive waste*** (TD-DT-1). Studies and researches were conducted to develop new technologies for the conditioning and medium-term storage of radioactive waste. Technical

assistance proposals were initiated together with the IAEA [Progress Reports under the Nucleus Program PN-03-20-06-06].

- ***Ensuring optimum conditions for the management of radioactive waste collected from around the country and on site*** (SpSe-2, TT-TE-1).

5.9.2. Other activities/results

- Acquisition of dosimetric and spectrometric equipment.
- Dosimetric monitoring of professionally exposed personnel and general public living within the range of influence of RWTS and NRWR (SpSe-6).
- Keeping the access road to NRWR and equipment at both NRWR and RWTS in operating conditions.
- Specific research activities under PN 03 20 06 06 and PN 03 20 06 03.
- Participation in CEEX in association with the nuclear fuel station SCN Pitesti.

5.9.3. Excellence milestones

International collaborations:

- Training in "Orphan source search methods and equipment," organized in collaboration with the national nuclear authority CNCAN and Sandia Laboratories of the U.S.
- PHARE Project on "Preliminary Safety Analysis Report for Baita-Bihor repository:" a draft of this report has been prepared, with the final version to be finalized by August 2006.
- IAEA Project on "Ra-226 source conditioning in Romania:" finalized.
- Project in cooperation with the British Department of Trade and Industry (DTI) on the "Provision of facilities and training for the management of radioactive waste in Romania," no. 89177; contract no. NSP/05-C7C8C9 with RWE NUKEM: unfolding.
- Sitting on evaluation commissions on two IAEA documents (TECDOC): "Licence application for low and intermediate level predisposal waste management facilities" si „Methods to retrieve and verify old waste inventory data with special attention to spent sealed sources."
- Preparation of the IFIN-HH report as an integral part of Romania's Country Report to the Joint Convention on the Safety of Spent Fuel Management & Radioactive Waste and participation in the IAEA meeting on the convention.

Scientific productivity: 8 non-ISI papers, 4 communications to international conferences and symposiums.

Staff qualification: 3 PhDs, 3 PhD candidates, 1 member of IAEA evaluation commissions.

5.10. Technological Irradiation Division

5.10.1. Main activities/results

- ***Technological irradiations*** (SpSe-3). Industrial scale irradiations were applied mainly to sterilize medical supplies, laboratory instruments, and pharmaceuticals. IRASM is the country's only sterilization facility certified in accordance with EU requirements. Number of stable clients: 24. Total number of orders: 156. Earnings: €70,412, up 11.5% from 2004.
- ***Microbiological analyses*** (SpSe-7). Analyses were aimed at: (i) periodically checking air, water, and surfaces in the production halls of drug makers, as well as raw materials and end products in various industries, including pharmaceuticals. Number of stable clients: 10. Earnings: €58,990, up 40% from 2004; (ii) validating sterilization irradiation processes to meet ISO 11137 and extend QMS certification of IRASM. This activity was carried out under RELANSIN project 1905/2004. IRASM's microbiology lab is the only third party laboratory GLP authorized by the National Drug Agency (Authorization no. 1/2004).
- ***Securing notification of the Laboratory for Irradiated Food Detection*** (TD-AL-2). Notification means the laboratory is officially declared competent for monitoring the irradiated food market, has the necessary infrastructure to enforce nuclear safety provisions related to national security and EU accession, and observes Romanian and EU laws in force in the notified area. The tests that were conducted may be used by the competent public authorities in their reports to the EU. IRASM's Laboratory for Irradiated Food Detection is the country's only laboratory of this kind, the competence of which is certified by CNCAN Notification no. LI 02. The activity was carried out as part of projects PN 03-20 04 03 and CALIST 5111/2004.
- ***Starting procedures to seek RENAR accreditation for the Microbiology Laboratory*** (TD-AL-2). Accreditation by the national authority RENAR, added to the existing ANM license, will help expand client numbers. The activity was carried out as part of project PN 03-20-04-03.

5.10.2. Other activities/results

- ***Securing QMS recertification and increased certified competence by DQS Germany*** (TD-AL-2). QMS recertification also brought about recognition of IRASM's newly acquired competence in validating sterilization by irradiation, namely implementation of specific dosimetric and microbiological procedures and compliance with ISO 11137. As a result, clients now can now adjust treatment costs and benefit from an analytical instrument to monitor their own production flow. IRASM's QMS is currently certified ISO 9001, ISO 13485, EN 552, and ISO 11137. Certification expenses were covered out of the division's overhead expenses.
- ***Preliminary steps for setting up a physicochemical testing laboratory*** (TD-DI-2). Actions consisted of: a) securing approval to rehabilitate the derelict building of the former Fuel Distribution Station and change its purpose; b) preparing a design theme and execution project (commissioned from SITON); c) seeking urban planning compliance certificate; d) fixing the roof of the building; e) procuring some fixtures under projects CEEX(M4)-78/2005 and CEEX(M1)-6/2005; f) securing funding for other more expensive gear under a technical cooperation project with IAEA, with financing to be released in 2007–2008.

- ***Coupling IRASM to ESW*** (TD-DI-2). Under the project CERES 34-4/2003, to which IRASM was a partner, this first step was made to demonstrate the performance of the Early Seismic Warning system that is currently being installed in Romania to protect industrial facilities ahead of imminent major earthquakes.
- ***New applications of technological irradiation*** (TD-DT-2). IRASM is a partner in interdisciplinary projects aimed at creating new technologies and products that are expected to multiply the number of its clients. Among these projects are:
  - Increasing the degradability and bioavailability of some natural and manmade polymers – BIOTECH 3382/2003
  - New technological solutions to increase the population of the predatory bug *Podisus maculiventris* (Say) to protect agricultural crops from pests – AGRAL 330/2004
  - Producing sterile male fruit flies – AGRAL 313/2004
  - Developing technologies to reclaim degraded land – BIOTECH 4686/2004
  - Chitosan and its dietary, chemical, and pharmaceutical applications – BIOTECH 4741/2004
  - Products and technologies to protect national heritage items against pests – BIOTECH PRIORITAR 2004
  - Invasive and noninvasive medical devices made of hi-tech textile materials – CEEX(M1) – 15/2005
  - Converting biofuel fabrication byproducts into bioproducts designed for nutrition and plant protection – CEEX(M1) – CONVERTOL/2005

5.10.3. Excellence milestones

International agreements and collaborations:

- Participation in the regional project IAEA–RER/8/010 "Quality assurance methods and procedures for radiation technology"
- Training on "How to prepare a feasibility study for an irradiation facility," organized at IRASM on the IAEA request for a group of trainees from the Republic of Moldova
- Training on "The performance and operation of irradiation facilities," organized at IRASM on request of Hungaroster, Hungary, for operators of Estonia's first irradiation facility
- Irradiation treatments and microbiological analyses for Swedish companies.

5.11. Reactor Decommissioning Division

5.11.1. Main activities/results

- ***A new concept of decommissioning of nuclear facilities*** (SpSe-8). A model of how to convert a cost center into a profit center by the end of a decommissioning project [Award of Excellence of the American Nuclear Society at ANS DD&R Conference 2005].
- ***Innovative decontamination techniques using polymeric hydrogels*** (SpSe-8). Polymeric hydrogels can successfully replace removable films and can be safely used on both sides of the decontamination system. When applied to nonporous surfaces, the decontamination factor is as high as 90% [Progress report PN 03-20-06-03, also presented at ANS DD&R Conference 2005.]
- ***Estimating corrosion of aluminum spent fuel assemblies and rods*** (SpSe-8). Techniques for estimating the corrosion degree of spent nuclear fuel assemblies makes it

possible to predict the lifetimes of storage ponds and improve safety during storage [Communications at Intl. Conf. Vienna, December 2005].

- ***Radiological monitoring of environment and personnel during cleanup removal of used research equipment and materials from VVR-S nuclear reactor*** (AR-RNB-2). Developing techniques for the radiological characterization of materials and environmental factors and obtaining used materials through dismantling, handling, sorting, decontamination, and transport during the decommissioning of nuclear facilities [Progress Report under PN 03-20-06-02].

5.11.2. Other activities/results

SpSe-8:

- Radiological characterizations to help set routes for the evacuation of research and radioisotope production equipments from a nuclear facility
- Unconditional disposal of ferrous materials for recycling
- Radioactive waste management – characterization, sorting, packaging in authorized containers

TD-DT-3:

- Technologies for dismantling, cutting, sorting, packaging, and transport of radioactive waste were established during decommissioning preparations by using mechanical cutting devices, gaseous effluent control by HEPA filters, and individual protection equipment [Progress Report on Internal Collaboration Contract (ICC) under Government Decision 700/2005]

5.11.3. Excellence milestones

International agreements and collaborations:

- International collaboration under 3 international agreements financed with non-repayable funds: TCP –IAEA ROM 04/029; IFIN-HH-ANL-DoE- BOA 3j-oo201; and RRRFR Program for spent fuel repatriation.
- Technical Cooperation Project-IAEA-TCP ROM 04/029; US$987,000; 2003–2005. In 2005, IAEA funding was used to purchase US$180,000-worth of cleanup and decommissioning equipment; an IAEA mission visited the institute and implemented TCP activities to a degree of 112%.
- Bilateral cooperation project between IFIN-HH and Argonne National Laboratory of the US, BOA 3J-00201; US$152,000. Project 1 regarding the upgrading of HEPA ventilation in spent nuclear fuel storage was finalized; 2 others are underway and should be completed by September 4, 2006.
- Program to repatriate highly enriched S-36 fuel to the Russian Federation under RRRFR agreement between US DoE, Russian Federation, and Romania (via IFIN-HH and CNCAN). Task2 – Fuel Inspection, which is expected to cost US$156, 000, was contracted in 2005.

5.12. IT and Communication Department

5.12.1. Main activities/results

- AR-ACS-1,2: The department made a major contribution to elaborating the RON1.5 million CEEX COMCIP Project on "The study of complex physical phenomena by high-performance distributed computing methods." The first stage focused on modernizing the backbone network and IFIN-HH communication node that connects most institutions on Magurele Campus with RoEduNet and GEANT, the European research and education network.

Data communication speed between IFIN-HH and Bucharest Polytechnic University increased to 1 Gbps, up from 100 Mbps, through the installation of a 12-km single-mode fiber optic connection and related equipment, aimed at providing optimum technical conditions for international collaborations (RODOS, BRAHMS, etc.) and especially for the LHC Computing Grid project launched by CERN.

Tests were conducted to check signal attenuation, latency, and data transfer capacity under conditions of intense (700 Mbps) traffic simulation between IFIN-HH and RoEduNet.

Furthermore, new solutions were developed to improve Internet service quality by introducing redundant DNS services, and high-performance equipment was brought in to replace obsolete route, e-mail, and web servers.

- To help study and implement grid technologies, a prototype 5-computer cluster was created on which appropriate software was installed to seek certification as part of the Southeast European Grid (SEE-GRID).

5.12.2. Other activities/results [OtSe-1]:

- Supply of data communication and telephone services.
- Software administration, maintenance, and service for computer networks.
- Administration and development of web, e-mail, and database services.

5.12.3. Excellence milestones

International agreements and collaborations:
- LIT-JINR Dubna (Hulubei-Meshcheryakov Agreement) 2005–2007
- CERN (participation in ATLAS and DIRAC experiments) 2002–2007
- IN2P3 France (experimental physics collaboration under bilateral accord) 2005
- Collaboration with the Dept. of Computer Science, Purdue University, U.S.
- Participation in European grid projects EGEE and SEE-GRID
- Collaboration in grid and microelectronics research with the Univ. of Wuppertal, Germany.

Scientific productivity: 4 ISI articles, 2 non-ISI articles, 6 communications at international science meeting.

Staff qualification: 3 PhDs.

5.13. Library, Publishing, Dissemination, and Public Relations Department

5.13.1. Main activities/results

- Communication was ensured with online journals to which IFIN-HH has subscriptions (http://www.nipne.ro/inis/libb.html).
- A new database for newly acquired books has been configured.
- Subscriptions considerably more than in 2005 were entered for 2006.
- A server and Alephino system were acquired under the sectoral program to ensure compatibility with academic libraries.
- Online access to Zentralblatt MATH and Consortium MathSciNet was provided.
- A total 920 references were processed and entered in the INIS database, which put Romania in 11th place among top contributors to INIS.
- Ten issues of *Romanian Journal of Physics* comprising 128 papers appeared in 2005. Another 82 papers were published in four double issues of *Romanian Reports in Physics* that were put out last year.

5.13.2. Other activities/results

- Training in searching the INIS database was provided to Romanian users; training in INIS data supply was provided to national INIS centers in Brazil, Canada, and China.
- Periodicals and information were exchanged with over 200 centers in Romania and abroad.
- Posters, booklets, fliers, technical records, nuclear work permits, etc., totaling over 10,000 pages, were designed, edited, processed, and printed.
- The institute's annual reports for 2003 and 2004 were edited and published.
- Information on national and European calls for projects, international collaborations, and international and local science events were disseminated.
- Various materials were edited and entered in the institute's database and posted on the IFIN-HH website.
- Hundreds of pages of scientific papers and documents were translated from and into English.

5.13.3. Excellence milestones

- A total 352 papers were processed under a contractual arrangement between the institute's INIS group and Section Information Documentaire (SID) of the Département Patrimoine et Infrastructures (DPI) at the French Commissariat à l'Energie Atomique – CEA/Saclay.
- The department provided specialized assistance to the organization of 8 scientific events.

5.14. Nuclear Training Center

5.14.1. Main activities/results (SpSe-10)

- 23 training programs, including:
  12 level-1 programs:
  - Areas: radiation generators; parcel screening; nuclear techniques
  - Types: parcel inspection using radiation sources for (Romanian Intelligence Service, National Customs Agency); radiological safety during installation of nuclear equipment and operation of X-ray sources
  - Number of trainees: 238

  11 level-2 programs:
  - Areas: radiation generators; closed sources; open sources; radiodiagnosis; nuclear raw materials (mining and processing of uranium and thorium ore)
  - Types: radiological safety in radiodiagnosis, handling and operation of closed/open radioactive sources, radioactive waste treatment, mining of U and Th ores; operator and patient protection in nuclear medicine; handling and operation of radiation generators
  - Number of trainees: 159

  Total number of trainees: 397
- Complex 5-module program to train Nuclear Reactor Decommissioning Division personnel that will be involved in radiological characterization, cleanup, and fuel handling as part of decommissioning of the VVR-S research reactor of IFIN-HH.
  - Total training time: 236 h
  - Number of trainees: 23

5.14.2. Other activities/results

- Graduate, CNCAN-approved, 2nd level, advanced training program on "Applications of radioisotopes and radiation sources" (2 h)
- Review of Quality Management System documents to secure certification.

5.14.3. Excellence milestones

Collaboration was initiated with the University of Bucharest Faculty of Physics and Polytechnic University for the supply of remote training in the field of radiation protection.

5.15. Marketing and Technological Transfer Department[‡]

5.15.1. Main activities/results

- Study of the elastic/viscoelastic properties of composite materials by modeling and simulating their behavior under mechanical strain by the finite element method (AR-ADS-3). [Project CEEX 42/ 2005 (M1)].
- Precompetitive research on making an electronic inventory of the IFIN-HH archive (TD-DI-1).

[‡] Marketing was not part of the department's tasks until 2006. In 2005, it was still known as the Design, Development, and Technological Transfer Department.

- Optimizing water consumption at IFIN-HH; analyzing how known and suspected radioactive effluents are drained; analyzing radioactive water discharge at the Radioisotope Production Center and storage of potentially radioactive effluents; evaluating the way IRASM is connected to the utilities (TD-DI-1,2) [order 132/ 03.05.2005].
- Drawing situation plans (TD-DI-2) of the former fuel distribution station in view of IRASM's project to take over the building and turn it into a physicochemical test laboratory; checking and updating utilities infrastructure documentation at the cyclotron building (119/12.04.2005); situation plan for optimizing space use and revamping central heating at the Theoretical Physics Division building.
- Providing technological assistance to rehabilitating the source storage and measurement laboratory building (TD-DI-1) [Collaboration under PN 03-20-06-04: Historic waste treatment on Magurele Campus].
- Providing plans of the Tandem accelerator cranes to the lifting equipment authority ISCIR; providing various situation plans to the Environmental Protection Agency; providing radioactive effluent discharge plans to the nuclear authority CNCAN (TD-DI-1,2).
- Intelligent tritium monitor (TD-MP-3).
- Filter evaluation devices (TD-MP-3) [Under PN 03-20-05-03].
- Radiation exposure devices (TD-MP-2) [EURATOM Project]; preshower scintillation detectors – CERN DIRAC Project [CORINT 1/2004]; reaction chamber with goniometer [PN-03-20-03-02]; reaction chamber [PN-03-20-03-02].

5.15.2. Other activities/results

- Editing and printing reports of various scientific work for the Applied Physics and Environmental Physics divisions; printing posters for scientific meetings (OtSe-2).

5.16. Quality Assurance Department

5.16.1. Main activities/results

- QMS certification by CNCAN in accordance with Quality Management Standards regarding activities carried out at the Reactor Decommissioning Division.
- Accreditation and notification by RENAR and CNCAN of different IFIN-HH laboratories in accordance with quality standard SR EN ISO/CEI 17025:2001.
- Participation on the QA side in various R & D projects along with other IFIN-HH divisions and departments: "Study relative to the establishment of an underground laboratory for measurements in ultra-low (mBq) background radiation" [Project CEEX, M4, PF-DO1-PT00-1059]; "Accredited laboratory for personnel dosimetry and radioactivity measurement in food products and the environment" [Project CEEX, M4 , PR-CO-DO1-PT-002]; preparing project proposal for the "Accreditation and notification of IFIN-HH nuclear analytical technique laboratories in accordance with European standards" [PN 06-35-03-03].
- Contributions as a member of the National Advisory Committee to the review of CNCAN Quality Management Norms.
- Contributions to projects and activities organized by ROMATOM.
- QA presentations at international workshops IWIRAD-2005, Bucharest, and IWRSA 2005, IAEA.

5.16.2. Other activities/results

- Review and acceptance of QMS documents of IFIN-HH laboratories as part of accreditation process by CNCAN and BRML: Nuclear Testing Lab (CNCAN notification for IFIN-HH Metrology Dept.); Radioactivity and Dosimetry Calibration Lab (CNCAN for IFIN-HH Metrology Dept.); Certification/licensing by BRML of the Metrology Lab; Internal contamination monitoring – Human Body Counter – individual dosemeter to measure incorporated radioactivity (CNCAN certification for the Life and Environmental Physics Division).
- Monitoring the application of the IFIN-HH QMS by taking part in internal auditing and management reviews, and checking that corrective actions are duly implemented.
- Consultancy on audits/inspections by regulatory/certification/accreditation authorities CNCAN and RENAR.
- Drafting of QMS (Quality Manual on the conservation pending decommissioning of the VVR-S nuclear reactor, Code QM-C-00); QMS implementation and licensing by CNCAN of Reactor Decommissioning Division activity via Authorization of QMS in the nuclear area no. IFIN-HH/R-01/2004 (Ed.1 Rev. 1).
- Preparation of Section 12 "Quality Assurance" in the VVR-S Nuclear Reactor Decommissioning Plan under IAEA-financed project TCP ROM 04/029.
- Participation on the QA side in various projects along with other IFIN-HH departments: "Accreditation of the radionuclide metrology laboratory" – INFRAS Contract 240; "Accreditation of test laboratory for nuclear product certification" – INFRAS Contract 245; "Multiple intercomparison exercises in material characterization by extended nuclear techniques and at European level" – INFRAS Contract 246.

5.17. Radioprotection, Labor and Nuclear Safety, and Environmental Protection Department

5.17.1. Main activities/results

- ***Radiological characterization of the nuclear reactor*** (AR-SRP-2). As a result of this applied research, we were able to establish the steps that were to be taken for operator protection as well as the types and amounts of wastes decommissioning would involve, and therefore a cost estimate of the process [Nucleus Project PN 03- 20 06 05].

5.17.2. Other activities

- *Operational radiological protection:* Radiation field research; occupational exposure check; dosimetry; personnel training; protection gear; nuclear work permits.
- *Radiological safety:* Checking of the design characteristics of facilities and sources; operation of facilities and sources; safety evaluation; radiation field research; area measurements; zoning; source monitoring; waste effluents; safety measures; shielding; job assignment.
- *Auditing:* External/internal exposure attribution and recording; keeping records of nuclear sources; environmental and health monitoring; record auditing; emergency planning.
- *Personnel health monitoring:* Medical clearance; schedules; training; communications; records; archives.

- *Emergency action:* Planning; training; exercises; maintenance or emergency gear; communication; logistics; dose attribution; zoning; in situ measurements; first aid.
- *Publications:* Norms on monitoring radioactive releases from nuclear and X-ray facilities; norms on monitoring environmental radioactivity around nuclear or radiological facilities; RAPSEN web page.
- *Training:* training courses for nuclear reactor personnel.

5.18. Radiation Metrology, Testing, and Dosimetry Department

5.18.1. Main activities/results:

The department's competence in ionizing radiation metrology and testing was formally recognized (SpSe 4, 5):

- For the Metrology Lab: License no. B-042-05; Certificate no. B-12-20-05, CNCAN Notification no. LE 02/2005.
- For the Nuclear Testing Lab: CNCAN Notification no. LI 01/2005.

Securing these certificates and licenses has had a major influence as they enabled the Metrology Lab to carry out activities in the specific fields for which they were issued. Moreover, based on these documents, IFIN-HH has been able to keep its status as a designated institute for ionizing radiation metrology and representative of Romania in EUROMET. (European Collaboration in Measurement Standards-version 2005-06-13).

Applied research under PNCDI projects: INFRAS (1), CALIST (1), Nucleus (1), CEEX (2).

5.18.2. Other activities/results

Homologation of new products and technologies; securing CNCAN notifications of 2 labs as Calibration Lab and Testing Lab, respectively; securing BRML authorization for the Metrology Lab; securing BRML accreditation for the Calibration Lab.

5.18.3. Excellence milestones

Scientific productivity: 3 books: S. Bercea (co-author): Physics textbooks for 9^{th} and 10^{th} grades, Arts and Crafts School; approved by the Ministry of Education and Research; original Romanian version published in 2004; Hungarian version published in 2005; S. Bercea (co-author): "177 Solved Problems in Dosimetry and Radioprotection," Bucharest University Press, 2005; 2 communications at national conferences.

*See **Appendix 2: List of published papers and papers presented at scientific meetings in 2005.***

List of IFIN-HH projects under the National Research, Development & Innovation Programs in 2005

CEEX Module I: Complex projects of research & development

No.	Project Code	Name/Acronym of the project	Person in charge Surname/Name	Div./ Dept.
1.	PC-D01-PT11-722	Use of radioisotope-labeled compounds in molecular biology, pharmacology, and toxicology studies (BIOCMRAD)	Postolache Cristan	RPC
2.	PC-D10-PT04-255	Treatment and conditioning of tritium-containing solid waste, organic liquids, and closed sources arising from nuclear activities in Romania (DESTRIT)	Postolache Cristian	RPC
3.	PC-D10-PT07-1246	Experimentally and theoretically determined nuclear data for use in nuclear safety (DANTE)	Avrigeanu Vlad	NPD
4.	PC-D11-PT00-110	Advanced research on the atomic nucleus structure (CASN)	Bucurescu Dorel	NPD
5.	PC-D10-PT00-1099	Advanced studies of atomic interactions using accelerated ion beams and neutrinos (INTAFIN)	Ciortea Constantin	NPD
6.	PC-D11-PT00-111	Phase transitions, threshold nuclear states, and reactions of astrophysical relevance (TFSRA)	Zamfir Nicolae	NPD
7.	PC-D10-PT00-16	Archaeometallurgy studies, based on nuclear analytical methods, of some gold, silver, and bronze artefacts in Romanian museums (ARCHAEOMET)	Constantinescu Bogdan	ANPD
8.	PC-D11-PT00-28	CAT scan in archaeometry (TOMARH)	Florin Constantin	ANPD
9.	PC-D01-PT11-345	Research on preventative diagnosis and mitigating ionizing radiation effects on healthy tissues (RADMEDMAG)	Racolta Petre	ANPD
10.	PC-D04-PT10-650	Ultrasensitive in-depth AMS profiling of tritium and deuterium concentrations with applications to environmental physics, detritiation techniques, and diagnosis of fusion experiments (AMSPROFILING)	Stan Sion Catalin	ANPD
11.	PC-D11-PT03-284	Research by ATLAS-GRID-CFFNEALFMSA software on new physical phenomena in the LHC ATLAS experiment (CFFNEALFMSA)	Alexa Calin	PPD
12.	PC-D11-PT00-13	Particle physics research based on the minimum distance principle in quantum state space (CFPEBOP)	Dumitru B. Ion	PPD
13.	PC-D11-PT00-393	Advanced research in charm quark physics (FQC)	Pantea Dan	PPD
14.	PC-D11-PT00-4	Supramolecular aggregation and nanostructural transport (ASTRAN)	Apostol Marian	TPD
15.	PC-D11-PT00-1233	Study of complex physical phenomena by high-performance distributed computing methods (COMCIP)	Buzatu Florin	TPD
16.	PC-D11-PT00-59	Coherent structures versus chaotic behavior in complex nonlinear systems (COSHANS)	Carstea Stefan	TPD
17.	PC-D10-PT00-568	Binary quantum system dynamics (DISCUBI)	Gherghescu Radu	TPD
18.	PC-D11-PT00-2	Advanced researches in information physics (FIZINFO)	Isar Aurelian	TPD
19.	PC-D11-PT00-190	High-efficiency computing methods to resolve current physical problems (COMPUT)	Ixaru Liviu	TPD
20.	PC-D10-PT00-576	Nuclear structure, double beta decay, and dynamics of fusion, fission, and nuclear multifragmentation (SNDBDDFFM)	Raduta Apolodor	TPD
21.	PC-D10-PT11-506	Beam/decay investigation into the fundamental properties of shortlived radionuclides (RSHE)	Silisteanu Ion	TPD
22.	PC-D11-PT00-57	Advanced quantum theory research on fields and gravitation (CATCCG)	Visinescu Mihai	TPD
23.	PC-D02-PT00-767	Research on the development of ELISA/RIA techniques for detecting food chemical contaminants: trenbolone si nandrolone (ELITRENAND)	Dorobantu Ion	LEPD
24.	PC-D01-PT00-1059	Determining what conditions are necessary for the establishment of an underground laboratory in ultralow background radiation (MicroBq)	Margineanu Romul	LEPD
25.	PC-D02-PT00-764	Multiparameter food safety characterization – analytical and toxicological methods (CAMPSAAT)	Radu Mihai	LEPD
26.	PC-D11-PT00-325	Advanced models and methods for studying nuclide migration in the environment, ecosystem vulnerability, critical infrastructures, and the environmental and health impact of nuclear and industrial activities (MAMIN)	Vamanu Dan	LEPD

27.	PC-D11-PT11-558	Radiolabeled biomolecules for the target treatment of cancer and angiogenesis inhibition (BIOMARC)	Dana Niculae	RPC
28.	PC-D01-PT00-99	Physics of nuclear interactions and hadron matter phases: new results, research and development activities, and applications	Petrovici Mihai	NPD
29.	PC-D11-PT00-1039	Experimental and theoretical researches on cosmic rays and nuclear astrophysics (COSASTRO)	Brancus Iliana	NPD
30.	PC-D11-PT00-395	Advanced particle physics research (CAFPE)	Coca Cornelia	PPD
		Projects coordinated by entities other than IFIN-HH:		
31.	PC-D04-PT04-1286	3D and 2D structures in ternary shape-memory biocompatible alloys (BIOSMeTa)	Ivanov Eugen	Cyclotron
32.	PC-D11-PT04-776	Keeping abreast of current trends in plasma processing science (RACORD)	Zamfir Nicolae	NPD
33.	PC-D01-PT11-94	Study and clinical application of boron-10 neutron capture cancer therapy	Florin Constantin	ANPD
34.	PC-D07-PT21-1149	Nondestructive method for the evaluation of road layer characteristics (MNSR)	Tripadus Vasile	ANPD
35.	PC-D09-PT02-1251	Permanent satellite system with trajectory control (SISATJA)	Pantea Dan	PPD
36.	PC-D11-PT00-1256	Kinetic evolution and nonequilibrium stationary states (KENESS)	Angelescu Nicolae	TPD
37.	PC-D11-PT05-1174	Nonlinear structures and scalability limits for quantum logic with trapped ions (LOGICUANT)	Gheorghe Cezar	TPD
38.	PC-D11-PT00-147	New techniques in solid state nuclear magnetic resonance: methodological developments and applications (NT-SSNMR)	Grecu Dan	TPD
39.	PC-D11-PT00-203	Spatial and spatial-temporal optical solitons (SPASOL)	Mihalache Dumitru	TPD
40.	PC-D11-PT00-582	Theoretical and mathematical models for the description of basic aspects of atomic and nuclear processes (MTMDAFPAN)	Raduta Apolodor	TPD
41.	PC-D01-PT11-262	Development of centers for early diagnosis of heart diseases by screening population at risk of cardiac dysfunction (CARDIOSCREEN)	Petcu Ileana	LEPD
42.	PC-D01-PT04-475	Methods and mechanisms for the synthesis of crystalline nanoparticles with controlled shapes and dimensions for use in bionanotehnology, sensors, special coatings and catalysis (NANOCRIS)	Petcu Ileana	LEPD
43.	PC-D11-PT04-496	High temperature superconducting materials (MSTCR)	Sandu Elena	LEPD
44.	PC-D04-PT06-982	Invasive and noninvasive medical devices (HIGHTEX)	Ponta Corneliu	IRASM
45.	PC-D02-PT24-1020	Conversion of biofuel fabrication byproducts into bioproducts for use in nutrition and plant protection (SCINEA)	Ponta Corneliu	IRASM
46.	PC-D03-PT04-476	Study of the elastic/viscoelastic properties of composite materials by modeling and simulating their behavior under mechanical strain by the finite element method	Leonardo Serbina	Techn. Transfer

<u>CEEX</u> Module IV : Projects for the development of the evaluation and certification infrastructure

No.	**Project code**	**Name of project/acronym**	**Person in charge Surname/name**	**Div./ Dept.**
1.	CO-D11-PT00-5	Infrastructure and capability upgrade to EU standards of IFIN-HH RPC laboratory for testing and certification of radiopharmaceuticals, radiochemicals, and radioactive sources RPC-IFIN-HH (CPRLAB)	Campeanu Catalina	RPC
2.	CO-D01-PT00-119	Seeking accreditation extension by RENAR for the IFIN-HH laboratory for testing and certification of ionizing radiation detectors used in nuclear medicine (ALIN-MED)	Bercea Sorin	RMTDD
3.	CO-D10-PT00-118	Overhaul and expansion of the IFIN-HH laboratory for neutron testing and certification of nuclear field products (FNTEST)	Bercea Sorin	RMTDD
4.	C0-D01-PT00-2	Accreditation of a laboratory for personnel dosimetry and measurements of environmental and food product radioactivity (LADPM)	Stochioiu Ana	LEPD
5.	CO-D01-PT00-124	Seeking accreditation extension for the IRASM Center for identifying pathogenic microorganisms by molecular biology methods (BIOM)	Ponta Corneliu	IRASM

Note: IFIN-HH won funding under CEEX – Module III for an additional 6 projects that will not start unfolding until 2006.

SAFETY

No.	Contract	Name of project	Person in charge Surname/Name	Div./ Dept.	Implementation period
1.	34	The tritium uptake risk - an element of energy safety and of action in the event of a nuclear accident (SECTRIT)	Galeriu Dan	LEPD	2005-2006

CERES

No.	Contract	Name of project	Person in charge Surname/Name	Div./ Dept.	Implementation period
1.	C3-29	Study of nuclear matter in exotic isospin or temperature states induced by nuclear reactions at intermediate energies.	Borcea Catalin	NPD	2003-2005
2.	C3-58	Structure of neutron-deficient nuclei in A=70-100 transition zone, far from the line of beta stability.	Badica Teodor	NPD	2003-2005
3.	C3-11	High spin structures, exotic shapes, and isospin symmetry in 32S nuclei.	Bucurescu Dorel	NPD	2003-2005
4.	C3-32	Structure and reactions of neutron-rich nuclei.	Ionescu Amilcar	NPD	2003-2005
5.	C3-129	A new generation of exotic nucleus sources and detection methods.	Pop Amalia	NPD	2003-2005
6.	C3-12	Nuclear structure around a new shell closure.	Bujor Manuela	NPD	2003-2005
7.	C3-131	Phase transition signals in nuclear collisions at intermediate and relativistic energies.	Pop Amalia	NPD	2003-2005
8.	C3-130	Static and dynamic effects of water and heavy water in hydrated cement pastes, studied by slow neutron spectroscopy.	Padureanu Ion	NPD	2003-2005
9.	C3-122	Study of extreme states of matter.	Petrovici Mihai	NPD	2003-2005
10.	C3-111	Use of a granular multidetector for high-accuracy measurements of neutron cross-sections	Petrascu Horia	NPD	2003-2005
11.	C3-7	Complex dynamic structures in nonlinear systems.	Grecu Dan	TPD	2003-2005
12.	C3-16	Models and methods for studying property control in quantum systems and processes	Stefanescu Eliade	TPD	2003-2005
13.	C3-42	Geometric and axiomatic methods in quantum mechanics and field theory.	Grigore Dan	TPD	2003-2005
14.	C3-40	Formation,structure, and radioactivity of superheavy nuclei.	Silisteanu Ion	TPD	2003-2005
15.	C3-41	Study of the formation and decay of nuclei with loosely bound nucleons.	Silisteanu Ion	TPD	2003-2005
16.	C3-125	Complementary methods in hadron physics: perturbative quantum chromodynamics and internal structure models.	Caprini Irinel	TPD	2003-2005
17.	C3-54	Bosonic liquids and Bose-Einstein superfluid phases.	Apostol Marian	TPD	2003-2005
18.	C3-59	Muon pair generation in proton-nucleus and nucleus-nucleus collisions ultrarelativistic energies.	Dita Sanda	PPD	2003-2005
19.	C3-13	Study of dual anomalous Cherenkov effects.	Ion B. Dumitru	PPD	2003-2005
20.	C3-55	Investigation of some D meson decay channels.	Pantea Dan	PPD	2003-2005
21.	C3-100	Gamma radiation-induced structural and functional modifications of immunitary system components.	Dorobantu Ioan	LEPD	2003-2005
22.	C3-104	Image reconstruction algorithms in positron tomography.	Constantin Florin	ANPD	2003-2005
23.	C3-57	Determination of terrestrial erosion and deep lithosphere composition of radioisotopes	Stan Sion Catalin	ANPD	2003-2005
24.	C3-56	Determination of effective neutron capture cross sections for the heaviest stable neutron-excess element, 209 Bi.	Stan Sion Catalin	ANPD	2003-2005
25.	C3-98	Double perturbation method study of electric quadrupole momentums in 209 Po.	Nicolescu George	NPD	2003-2005
26.	C3-27	Hyperfine interaction of ortho-positronium (oPs) in weak magnetic field.	Ivanov Eugen	Cycl.	2003-2005
27.	C3-99	Absolute calibration of 99mTc,125I, 177Lu radionuclides to ensure traceability in nuclear medicine.	Sahagia Maria	RPC	2003-2005
28.	C3-31	Radioactive element transmutation studies by nuclear reactions.	Cutoiu Dan	NPD	2003-2005
29.	C4-75	Monte Carlo simulations in grid technology.	Preda Titi	PPD	2004-2006
30.	C4-122	Hadron interaction studies based on nonextensive optimal entropy.	Ion B Dumitru	PPD	2004-2006
31.	C4-146	Study of exotic-kaonic atoms with crossed beam particle accelerator,	Ponta Titus	PPD	2004-2006
32.	C4-131	Geometric and algebraic methods for quantum models of fundamental interactions.	Berceanu Stefan	TPD	2004-2006
33.	C4-123	Effective field theories in particle physics.	Micu Liliana	TPD	2004-2006
34.	C4-164	Phase transitions in ternary amphiphilic systems.	Buzatu D.Florin	TPD	2004-2006
35.	C4-162	Nuclear structure investigation by proton and cluster emissions.	Delion Doru	TPD	2004-2006

36.	C4-186	Electromagnetic radiation absorption in nanoscopic ferrofluids, with applications to cancer thermotherapy.	Grecu Dan	TPD	2004-2006
37.	C4-7	Advanced researches on atomic and magnetic interactions.	Apostol Marian	TPD	2004-2006
38.	C4-218	Investigation of new nuclei and processes produced by complete fusion reactions.	Silisteanu Ion	TPD	2004-2006
39.	C4-59	Study of exotic phenomena and microscopic nuclear systems.	Stoica Sabin	TPD	2004-2006
40.	C4-158	Classical and quantum correlations in complex physical systems.	Isar Aurelian	TPD	2004-2006
41.	C4-197	Statistics and dynamics of complex nuclear syistems.	Poenaru Dorin	TPD	2004-2006
42.	C4-161	Highly efficient numerical methods to study some physical processes and phenomena.	Ixaru Liviu	TPD	2004-2006
43.	C4-196	One-particle models for binary and ternary nuclear processes.	Gherghescu Radu	TPD	2004-2006
44.	C4-188	Nuclear processes in neutron stars and supermassive primordial stars.	Sandulescu Nicolae	TPD	2004-2006
45.	C4-189	Some fundamental aspects of the structure and dynamics of atomic nuclei.	Raduta Apolodor	TPD	2004-2006
46.	C4-163	Strongly correlated fermion systems investigated by many-body methods.	Buzatu D. Florin	TPD	2004-2006
47.	C4-219	Exotic nuclei-induced nuclear reactions with applications in nuclear structure and stellar astrophysics.	Carstoiu Florin	TPD	2004-2006
48.	C4-255	Algebraic methods for studying exotic nuclear states.	Misicu Serban	TPD	2004-2006
49.	C4-217	Study of fundamental radiolithic processes in hydrophobic isotope exchange catalysts.	Postolache Cristian	RPC	2004-2006
50.	C4-5	Development of new pharmaceuticals using the radionuclides 186,188Re, 153Sm, 99Mo.	Campeanu Catalina	RPC	2004-2006
51.	C4-125	Intruder states and shape coexistence in neutron deficient Pb nuclei.	Iordachescu Alexandru	NPD	2004-2006
52.	C4-13	Dynamic symmetries in near magic nuclei.	Cata-Danil Gheorghe	NPD	2004-2006
53.	C4-18	Nuclear structure and proton capture reactions in mass regions of astrophysical relevance.	Cata-Danil Irina	NPD	2004-2006
54.	C4-101	Structure of nuclei at neutron-emission stability limit, studied by radioactive beams	Borcea Catalin	NPD	2004-2006
55.	C4-79	Structure of high spin states in A=90–100 nuclei, populated by fusion-fission reactions.	Pantelica Dan	NPD	2004-2006
56.	C4-214	Ion-atom and ion-surface interactions at low and intermediate energies.	Ciortea Constantin	NPD	2004-2006
57.	C4-103	Modulation of gamma radiation emission.	Olariu Silviu	NPD	2004-2006
58.	C4-195	Nuclear structure far from stability.	Petrovici Alexandrina	NPD	2004-2006
59.	C4-97	Cosmic ray measurements of astrophysical and environmental relevance.	Brancus Iliana	NPD	2004-2006
60.	C4-72	Spectroscopy studies and mechanisms in fast neutron induced reactions	Corcalciuc Valentin	NPD	2004-2006
61.	C4-220	Effects on model membranes of oxidative stress induced by ionizing radiations.	Radu Mihai	LEPD	2004-2006
62.	C4-1	Databases for the configuration of data collection partitions, user programs, and tests for the advanced data acquisition system prototype ATLAS DAQ	Badescu Elisabeta	ANPD	2004-2006
63.	C4-121	Hyperfine interaction studies of orto-Positronium depolarization in interaction with gaseous media.	Ivanov Eugen	Cyclotron	2004-2006
64	CEE3	Nuclear interactions and hadron matter.	Petrovici Mihai	NPD	2002-2005
		Projects coordinated by entities other than IFIN-HH:			
65.	C3-34 Earth Phys. Group	Implementation of early seismic warning system in nuclear facilities of nuclear significance	Ponta Corneliu	IRASM	2003-2005
66.	C3-133 Biodyn. Gr.	Biological material irradiation with different radiation types and doses.	Fugaru Viorel	RPC	2003-2005
67.	C3-64 IFTM Gr.	Effects of heavy ion irradiation in alkali halogenide crystals	Dragusin Mitica	Reactor	2003-2005
68.	C3-90 IFTM Gr.	Energy and luminescence transfer in Mn- and Cu-doped nanowires	Postolache Cristian	RPC	2003-2005

69.	C3-103 Buc. Univ. Gr.	Cellular models for in vitro study of molecular mechanisms underlying skin injury repair.	Dorobantu Ioan	LEPD	2003-2005
70.	C3-132 Biodyn. Gr.	Rapid method for analyzing cell membrane modifications induced by ionizing radiation	Fugaru Viorel	RPC	2003-2005
71.	C4-187 Math.Inst. Gr	Mathematical modeling: abstract results and applications	Angelescu Nicolae	TPD	2004-2006
72.	C4-105 IFTM Gr.	Difference of dimensionability, morphology, and structural ordering degree on hydrogen storage in amorphous and nanostructured alloys.	Constantinescu Bogdan	ANPD	2004-2006
73.	C4-68 IFTM Gr.	Studies on the nonconventional synthesis and physicochemical properties of TiO2-Fex-Oy nanometric oxidic structures.	Constantinescu Bogdan	ANPD	2004-2006
74.	C4-116 Polytech. Univ. Gr.	Influence of the processing degree of metallic biomaterial surfaces on osseointegration processes in biological tissues.	Racolta Petru	ANPD	2004-2006
75.	C4-241 IFTM Gr.	Methods to create composites of high spin polarization ferromagnetic semimetals in polymer matrix	Sandu Elena	LEPD	2004-2006

BIOTECH

No.	Contract	Name of project	Person in charge Surname/Name	Div./ Dept.	Implementation period
1.	PP 457	Methods of cancer prevention and treatment in large animals and humans.	Fugaru Viorel	RPC	2004-2005
3.	4741	Chitosan – preparation biotechnologies, optimization of antimicrobial potential.	Ponta Coneliu	IRASM	2004-2006
4.	3382	Irradiation-increased degradability and bioavailability of natural and manmade polymers for use as carbon sources in biotechnology.	Ponta Coneliu	IRASM	2004-2005
5.	4686	Biotechnologies for the reclamation of degraded land by using bioproducts based on endomycotic fungi with nitrogen fixation capacity	Ponta Coneliu	IRASM	2004-2006
6.	Priority project 1076	Products and technologies for the protection (conservation) of heritage objects against biological damage (by microorganisms: bacteria, mildew, fungi, algae, etc.; or pests: moths, bugs, and roaches)	Ponta Coneliu	IRASM	2004-2006

VIASAN

No.	Contract	Name of project	Person in charge Surname/Name	Div./ Dept.	Implementation period
1.	282	Correlation of in vitro cellular radiosource with healthy tissue adverse reaction in cancer radiotherapy	Savu Diana	LEPD	2004-2005
2.	473	Studies to develop an immunoradiometric dosage kit for the Carcinoembrionic Antigen (CEA) – a major tumor marker tumoral in cancer management.	Borza Virginia	RPC	2004-2006
3.	194	Interdisciplinary research for the development of Romanian radiopharmaceuticals to align local medical diagnosis and treatment procedures with EC requirements – PET scans.	Racolta Petru	ANPD	2003-2005
4.	367	177 Lu-DOTA-OCTREOTATE in the radiotherapy and imaging of specific neuropeptide receptors in neuroendocrine tumors and neurodegenerative diseases.	Lungu Valeria	LEPD	2004-2006
5.	284	Bone cancer radiotherapy and preclinical evaluation of the radiopharmaceutical 188Re HEDP.	Niculae Dana	RPC	2004-2005

AEROSPATIAL

No.	Contract	Name of project	Person in charge Surname/Name	Div./ Dept.	Implementation period
1.	70	Automatic facility for the acquisition and processing of data of relevance for nuclear astrophysics	Boldea Venera	PPD	2003-2005
2.	110	Symmetries and supersymmetries in quantum gravitation and computational cosmologic modeling	Visinescu Mihai	TPD	2003-2005
3.	106	Studies on neutrinos and their role in astrophysics and cosmology	Stoica Sabin	TPD	2004-2006
4.	105	Nonlinearity, evolution, singularities, and stability in processes of astrophysical and cosmologic relevance.	Visinescu Mihai	TPD	2004-2006

AGRAL

No.	Contract	Name of project	Person in charge Surname/Name	Div./ Dept.	Implementation period
1.	247	Techniques of radionuclide transfer monitoring in water-soil-plant-crop agricultural systems.	Breban Domnica	LEPD	2003-2005
2.	340	Mitigating erosion impact on soil and water resources in hilly areas.	Margineanu Romul	LEPD	2004-2006
3.	369	Computer models for testing and predicting erosion evolution and its impact on the soil productivity of cultivated hillsides.	Margineanu Romul	LEPD	2004-2006
		Coordinated by other entities:			
4.	330 IFIN-HH partner	New technological solutions for raising and using predator heteroptera for crop protection	Ponta Corneliu	IRASM	2004-2006
5.	313 IFIN-HH partner.	Production of sterile male fruit flies and their use in tree protection	Ponta Corneliu	IRASM	2004-2006

INFRAS

No.	Contract	Name of project	Person in charge Surname/Name	Div./ Dept.	Implementation period
1.	249	Accreditation of a laboratory for the elemental and structural characterization of micro- and nanostructured materials by Rutherford backscattering spectrometry (RBS) using accelerated beams.	Dudu Dorin	Cyclotron	2004-2006
2.	240	Accreditation of a radionuclide metrology laboratory (activity measurements)	Sahagia Maria	RPC	2004-2006
3.	245	Accreditation of a testing laboratory for the certification of nuclear field products	Bercea Sorin	RMTDD	2004-2006
4.	246	Multiple intercomparison schemes in material and environmental characterizations by Gamma-Smart techniques widespread at European level	Cincu Emanuela	ANPD	2004-2006

RELANSIN

No.	Contract	Name of project	Person in charge Surname/Name	Div./ Dept.	Implementation period
1.	1905	Ionizing radiation treatment used for improving manufacturing techniques and launching new products by local medical and pharmaceutical producers.	Ponta Corneliu	IRASM	2004-2006

CALIST

No.	Contract	Name of project	Person in charge Surname/Name	Div./ Dept.	Implementation period
1.	5132	Creation and development of testing methods and techniques for the evaluation and certification of medical imaging devices in compliance with EU standards in force in Romania.	Bercea Sorin	RMTDD	2004-2006
2	5154	Certification of composite materials by the continuous linear application of epoxy resins used in the nuclear field.	Postolache Cristian	RPC	2004-2006
3	5111	Methods for the detection of ionizing radiation-treated food products.	Ponta Corneliu	IRASM	2004-2006

CORINT

No.	Contract	Name of project	Person in charge Surname/Name	Div./ Dept.
1	79	European Nuclear Structure Integrated Infrastructure Initiative - EURONS	Bucurescu Dorel	NPD
2	80	European facility for the production of radioactive ion beams by ISOL – EURISOL method	Negoita Florin	NPD

3	3	Contributions to the construction and testing of ATLAS detector, and to the evaluation of its investigative potential	Dita Sanda	PPD
4	58	Hadron physics	Petrovici Mihai	NPD
5	1	Preshower detector for the DIRAC experiment	Pentia Mircea	NPD
6	4729	Exotic states of hadron matter and in situ effects – ALICE	Petrovici Mihai	NPD
7	2	Study of B mesons and nonconservation of CP symmetry in LHCb experiment	Stoica Sabin	TPD
8	TT-1 Euratom	Analysis of fast neutron induced reactions for fusion reactor materials	Avrigeanu Vlad	NPD
9	TT-11 Euratom	Report on shift effects and ionization induced in KU-1 and KS-4V type samples by high-energy proton irradiation	Constantinescu Bogdan	ANPD
10	TT-16 Euratom	Evaluation of deuteron-activation data of some structured materials	Avrigeanu Marilena	NPD
11	TT-17 Euratom	Report on radiation-induced absorption in radiation resistant glasses selected as a result of atomic displacement effects in samples	Constantinescu Bogdan	ANPD
		Coordinated by other entities:		
12	77 ICI	Enabling Grids for E-sciencE *(*EGEE*).*	Petrovici Mihai	NPD
13	UT-1 Euratom INFLPR	Investigation on sapphire optical fiber behavior in gamma-irradiated UV-visible spectral region	Constantinescu Bogdan Vata Ion	ANPD DAC
14	UT-2 Euratom INFLPR	Investigation on gamma-irradiation effects on optical semiconductor detectors for sensor and optical communication applications	Constantinescu Bogdan	ANPD
15	TT Euratom INFLPR	Gamma irradiation effects on optoelectronic components (lasers with inbuilt semiconductors and detector)	Constantinescu Bogdan	ANPD

SECTORAL Plan

No.	Project Code	Name of project	Person in charge Surname/Name	Implementation period
1.	6 INFM	Research and development in a world of knowledge	Buzatu Florin	2004-2005
2.	83 CNCSIS	Elaboration based on strategic planning elements of a national RD & I strategy for the period 2007–2013	Buzatu Florin	2005-2006

NUCLEUS Program: ***Advanced research in nuclear physics and nuclear technique applications in related fields*** **(NIFIN-1, 2003–2005)**

Objective 1: *Modeling of fundamental processes in quantum systems by analytical, computational, and experimental methods*

No.	Project code	Name of project	Person in charge	Div.
1.	PN 03-20-01-01	Development of models, methods, and software applicable to the description of the physical properties of quantum systems	Stoica Sabin	TPD
2.	PN 03-20-01-02	Semiclassical, quantum properties and symmetries of the structure and dynamics of nuclear and atomic systems	Ursu Ioan	TPD
3.	PN 03-20-01-03	Modeling of quantum condensates with applications to atomic and molecular nano-aggregates, GRID methods and techniques for numerical applications	Apostol Marian	TPD
4.	PN 03-20-01-04	High-accuracy particle physics tests and measurements in large accelerator experiments	Pantea Dan	PPD

Objective 2: *Basic researches in nuclear and atomic physics; developments and applications of accelerated particle beams*

No.	Project code	Name of project	Person in charge	Div.
5.	PN 03-20-02-01	High-performance nuclear spectroscopy and special decay forms	Bucurescu Dorel	NPD
6.	PN 03-20-02-02	Extreme states of hadron matter	Petrovici Mihai	NPD
7.	PN 03-20-02-03	Atomic physics and condensed matter research using charged particle and neutron beams	Ciortea Cnstantin	NPD
8.	PN 03-20-02-04	Use of Tandem-ECR accelerated ion beams for material characterizations and environmental studies	Pantelica Dan	NPD
9.	PN 03-20-02-05	Experimental and theoretical researches on cosmic ray interactions and nuclear astrophysics	Brancus Iliana	NPD

Objective 3: *Life and environmental physics researches*

No.	Project code	Name of project	Person in charge	Div.
10.	PN 03-20-03-01	Physical phenomenology modeling of the geophysical migration of radionuclides and potential pollutants. Model implementation in expert systems for migration evaluation	Gheorghiu Adriana	LEPD
11.	PN 03-20-03-02	Evaluation of biological response to prolonged low-level exposure to physical and chemical factors in normal and pathologic circumstances; development of a nonconventional diagnosis and analysis methodology	Petcu Ileana	LEPD
12.	PN 03-20-03-03	Estimate of the effectiveness of soil conservation measures on Romanian hillsides by using existing soil radionuclides as environmental tracers	Margineanu Romul	LEPD

Objective 4: *Improving the competence, adequacy, and competitiveness of small-scale production and services: analyses, instruments, metrology*

No.	Project code	Name of project	Person in charge	Div.
13.	PN 03-20-04-01	New methods and technologies for interdisciplinary applications using cyclotron-accelerated beams	Dudu Dorin	Cyclotron
14.	PN 03-20-04-02	Ensuring the international equivalence of the Romanian activity standard within the EUROMET system, and certification of reference materials and standards	Sahagia Maria	RPC
15.	PN 03-20-04-03	Accreditation/notification by the competent national entities of a laboratory infrastructure for the implementation of national security and European integration laws	Bercea Sorin	RMTDD
16.	PN 03-20-04-04	Implementation of best practice and fabrication norms in the production of diagnosis and treatment radiopharmaceuticals	Postolache Cristian	RPC

Objective 5: *Strengthening of research & development directions with a potential for small-scale production and services*

No.	Project code	Name of project	Person in charge	Div.
17.	PN 03-20-05-01	High-sensitivity integrated laboratory based on atomic and nuclear techniques	Constantin Florin	ANPD
18.	PN 03-20-05-02	Development of advanced detection and data acquisition systems for nuclear physics experiments at low, medium, and high energies	Cruceru Ilie	ANPD
19.	PN 03-20-05-03	Integrated radioactivity monitoring system	Rusu Alexandru	ANPD
20.	PN 03-20-05-04	Development of radiopharmaceuticals for diagnosis and therapy	Borza Virginia	RPC

Objective 6: *Studies on radwaste treatment and the decommissioning of nuclear facilities*

No.	Project code	Name of project	Person in charge	Div.
21.	PN 03-20-06-01	Methods and computation codes for evaluating and predicting the health and environmental impact of nuclear decommissioning	Vamanu Dan	LEPD
22.	PN 03-20-06-02	Irradiation-obtained absorbents and flocculants used for the safe management of solid and liquid radioactive wastes, and hazardous toxic chemicals	Dragusin Mitica	Reactor
23.	PN 03-20-06-03	Evaluation of the radiological impact of mining and radwaste storage on the environment and residents around the National Radioactive Waste Repository at Baita, Bihor.	Dinescu Lucretia	RWTS
24.	PN 03-20-06-04	Plans for the decommissioning of historic radwaste storage on Magurele, Ilfov, site	Garlea Cristina	ANPD
25.	PN 03-20-06-05	Ensuring radiological safety by zoning of the VVR-S nuclear reactor in the runup to decommissioning	Floare Gabriel	RAPSEN
26	PN 03-20-06-06	Studies and researches on the upgrading of technologies for the treatment, conditioning, and final disposal of wastes arising from the production and use of radioistotopes and from the decommissioning of nuclear facilities	Dragolici Felicia	RWTS

Appendix 2

List of published papers and papers presented at scientific meetings in 2005

A) Articles in ISI-rated journals

1.	Oblate collectivity in the yrast structure of 194Pt	G.A. Jones, … D. Bucurescu, … M. Ionescu-Bujor, A. Iordachescu, … N. Marginean, … C.A. Ur …	Acta Physica Polonica B36, 1323 (2005)	NPD
2.	Effects of Crowding on the Thermal Stability of Heterogeneous Protein Solutions	F. Despa, D.P. Orgill and R.C. Lee	Ann. Biomed. Eng. 33 1125-1131 (2005)	TPD
3.	Biological water, its vital role in macromolecular structure and function	F. Despa	Ann. N.Y. Acad. Sci. 1066 (2005)	TPD
4.	Magnetic Resonance Imaging of Changes in Muscle Tissue Following Membrane Trauma	H. Gissel, F. Despa, J. Collins, D. Mustafi, K. Rojan, G. Karczmar and R.C. Lee	Ann. N.Y. Acad. Sci. 1066 (2005)	TPD
5.	Molecular Crowding Effects on Protein Stability	F. Despa, D.P. Orgill and R.C. Lee	Ann. N.Y. Acad. Sci. 1066 (2005)	TPD
6.	Massive Supersymmetric Quantum Gauge Theory	D. R. Grigore, M. Gut, G. Scharf	Annalen der Physik (Leipzig) 14, 520 (2005)	TPD
7.	Optically reconfigurable azobenzene polymer-based fiber Bragg filter	R. Lausten, P. Rochon, M. Ivanov, P. Cheben, S. Janz, P. Desjardins, J. Ripmeester, T. Siebert, A.Stolow	Applied Optics, 44 (33): 7039-7042 (2005)	RPC
8.	Pulsed-laser deposition of inclined ZnO, of GaPO4 and of novel composite thin films	JD. Pedarnig, M. Peruzzi, I. Vrejoiu, DG. Matei, M. Dinescu, D. Bauerle	Applied Physics A-Materials Science & Processing, 81 (2): 339-343 (2005)	420
9.	Temperature-dependent light intensity controlled optical switching in azobenzene polymers	M. Ivanov, D. Ilieva, G. Minchev, T. Petrova, V. Dragostinova, T. Todorov, L. Nikolova	Applied Physics Letters, 86 (18) (2005)	RPC
10.	Growth of Al doped ZnO thin films by a syncronized two laser system	E. Gyorgy, J. Santiso, A. Giannoudakos, M. Kompitsas, I. N. Mihailescu, D. Pantelica	Applied Surface Science 248,147-150(2005)	NPD
11.	Properties of ZnO thin films prepared by radio-frequency plasma beam assisted laser ablation	N. Scarisoreanu, D.G. Matei, G. Dinescu, G. Epurescu, C. Ghica, L.C.Nistor, M. Dinescu	Applied Surface Science, 247 (1-4): 518-525 (2005)	420
12.	Structural and electrical characterization of PLZT 22/20/80 relaxor films obtained by PLD and RF-PLD	F. Craciun, M. Dinescu, P. Verardi, N. Scarisoreanu, A. Moldovan, A. Purice, C. Galassi	Applied Surface Science, 248 (1-4): 329-333 (2005)	420
13.	Glass and glass ceramic materials obtained by pulsed laser deposition in the BaO-TiO2-B2O3 system	L. Boroica, R. Medianu, M. Dinescu, I. Boroica	Applied Surface Science, 248 (1-4): 381-387 (2005)	420
14.	KASCADE measurements of energy spectra for mass groups of cosmic rays: results and open problems	T.Antoni, W.D.Apel, A.F.Badea, K.Bekk, A.Bercuci, H.Bluemer, H.Bozdog, I.M.Brancus, A-A.Chilingarian, K.Daumiller, P.Doll, R.Engel, J.Engler, F.Fessler, H.J.Gils, R.Glasstetter, A.Haungs, D.Heck, J.R.Hoerandel, K.H.Kampert, H.O.Klages, G.Maier, H-J.Mathes, H.J.Mayer, J.Mielke, M.Mueller, R.Obenland, J.Oehlschlaeger, S.Ostapchenko, M.Petcu, H.Rebel, A.Risse, M.Risse, M.Roth, G.Schatz, H.Schieler, J.Scholz, T.Thouw, H.Ulrich, J.van Buren, A.Vardanyan, A.Weindl, J. Wochele, J.Zabierowski	Astropart.Phys., 24, 1-25 (2005)	NPD
15.	Orientation behavior of retinal photoreceptors in alternating electric fields	M. Radu, M. Ionescu, N. Irimescu, K. Iliescu, R. Pologea-Moraru, E. Kovacs	Biophysical Journal, 89, 3548-3554 (2005)	LEPD

16.	Novel Planar glucose biosensors for continuous monitoring huse	F. Ricci, D. Moscone, C. S. Tuta, G. Palleschi, A. Amine, A. Poscia, F. Valgimigli, D. Messeri	Biosensors & Bioelectronics, 20, 1992 – 2000 (2005)	RPC
17.	The diagnostic significance of different types of dysmorphic erythrocytes in urine	S. Giju, V. Dumitracu, D. Grecu, C. Flangea	Clinical Chemistry, 51: A104-A104 Suppl. 6 (2005)	TPD
18.	Analytic methods for obstruction to integrability in discrete dynamical systems	O. Costin, M.D. Kruskal	Communications on Pure and Applied Mathematics, 58 (6): 723-749 (2005)	TPD
19.	Improved boundary conditions for the decay of low lying metastable proton states in a time-dependent approach	N. Carjan, M. Rizea, D. Strottman	Computer Physics Communications, 173, 41-60 (2005)	TPD
20.	The ultraught project: The network as an integrated and managed resource for data-intensive science	H. Newman, J. Bunn, I. Legrand, S. Low, D. Nae, S. Ravot, C. Steenberg, X. Su, M. Thomas, F. Van Lingen, Y. Xia, R. Cavanaugh, S. McKee	Computing in Science & Engineering, 7 (6): 38-47 (2005)	NPD
21.	Molecular dynamics in triglycine sulphate by cold neutron spectroscopy	V. Tripadus, A. Radulescu, J. Pieper, A. Buchsteiner, A. Podlesniak, S. Janssen, A. Serban	Elsevier "Chemical Physics" (2005)	NPD
22.	Two-proton small-angle correlations in central heavy-ion collisions: A beam-energy- and system-size-dependent study	R. Kotte, J.P. Alard, A. Andronic, V. Barret, Z. Basrak, N. Bastid, M.L. Benabderrahmane, R. Caplar, E.Cordier, P. Crochet, P. Dupieux, M. Dzelalija, Z. Fodor, I. Gasparic, A. Gobbi, Y. Grishkin, O.N.Hartmann, N. Herrmann, K.D. Hildenbrand, B.Hong, J. Kecskemeti, Y.J. Kim, M. Kirejczyk, P. Koczon, M. Korolija, T. Kress, A. Lebedev, Y. Leifels, X. Lopez, M. Merschmeyer, J. Mosner, W. Neubert, D. Pelte, M. Petrovici, F. Rami, W. Reisdorf, B. de Schauenburg, A. Schuttauf, Z. Seres, B. Sikora, K..S. Sim, V. Simion, K. Siwek-Wilczynska, V. Smolyankin, G. Stoicea, Z. Tyminski, P. Wagner, K. Wisniewski, D. Wohlfarth, Z.G. Xiao, Y. Yushmanov, A. Zhilin	European Physical Journal A 23 (2): 271-278 (2005)	NPD
23.	Microcanonical studies on isoscaling	A.R. Raduta	European Physical Journal A 24 (1): 85-92 (2005)	NPD
24.	Lifetimes of proton unstable states in 113I measured by the particle-X-ray coincidence technique	Z. Janas, L. Batist, R. Borcea, J. Doring, M. Gierlik, M. Karny, R. Kirchner, M. La Commara, S. Mandal, C. Mazzocchi, F. Moroz, S. Orlov, A. Plochocki, E. Roeckl, J. Zylicz	European Physical Journal A 24, (2005)	NPD
25.	Study of 19Na at SPIRAL	F. de Oliveira Santos, P. Himpe, M. Lewitowicz, I. Stefan, N. Smirnova, N.L. Achouri, J.C. Angelique, C. Angulo, L. Axelsson, D. Baiborodin, F. Becker, M. Belleguic, E. Berthoumieux, B. Blank, C. Borcea, A. Cassimi, J.M. Daugas, G.de France, F.Dembinski, C.E.Demonchy, Z.Dlouhy, P.Dolegieviez, C.Donzaud, G.Georgiev, L.Giot, S.Grevy, D.Guillemaud-Mueller, V.Lapoux, E.Lienard, M.J.Lopez Jimenez, K.Markenroth, I.Matea, W.Mittig, F.Negoita, G.Neyens, N.Orr, F.Pougheon, P.Roussel-Chomaz, M.G.Saint-Laurent, F.Sarazin, H.Savajols, M.Sawicka, O.Sorlin, M.Stanoiu, C.Stodel, G.Thiamova, D.Verney and A.C.C.Villari	European Physical Journal A 24, 237 (2005)	NPD
26.	Momentum-dependent mean field in pi0 production in Nb + Nb collisions	G.Russo, A.Insolia, U.Lombardo, N. Sandulescu	European Physical Journal A 24, 389 (2005)	TPD
27.	Freeze-out volume in multifragmentation - dynamical simulations	M. Parlog, G. Tabacaru, J.P. Wieleczko, J.D. Frankland, B. Borderie, A. Chbihi, M. Colonna, M.F. Rivet	European Physical Journal A 25 (2): 223-228 (2005)	NPD
28.	Observation of the 0+2 state in 44S	S. Grevy, F. Negoita, I. Stefan, N.L. Achouri, J.C. Angelique, B. Bastin, R. Borcea, A. Buta, J.M. Daugas, F.De Oliveira, O. Giarmana, C. Jollet, B. Laurent, M. Lazar, E. Lienard, F. Marechal, J. Mrazek, D. Pantelica, Y. Penionzhkevich, S. Pietri, O. Sorlin, M. Stanoiu, C. Stodel and M. G. St-Laurent	European Physical Journal A 25, Suppl. 1, 111 (2005)	NPD
29.	First observation of 54Zn and its decay by two-proton emission	B. Blank, N. Adimi, A. Bey, G. Canchel, C. Dossat, A.Fleury, J.Giovinazzo, I.Matea, F.De Oliveira, I.Stefan, G.Georgiev, S.Grevy, J.C.Thomas, C.Borcea, D.Cortina, M.Caamano, M.Stanoiu, F.Aksouh	European Physical Journal A 25, Suppl. 1, 169 (2005)	NPD

30.	The EXODET apparatus: Features and first experimental results	M. Romoli, M. Mazzocco, E. Vardaci, M. di Pietro, A. de Francesco, R. Bonetti, A. de Rosa, T. Glodariu, A. Guglielmetti, G. Inglima, M. La Commara, B. Martin, V. Masone, P. Parascandolo, D. Pierroutsakou, M. Sandoli, P. Scopel, C. Signorini, F. Soramel, L. Stroe, J. Greene, A. Heinz, D. Henderson, C.L. Jiang, E.F. Moore, R.C. Pardo, K.E. Rehm, A. Wuosmaa, J.F. Liang	European Physical Journal A 25: 289-290 Suppl. 1, (2005)	NPD
31.	Systematics in the structure of low-lying, non-yrast band-head configurations of strongly deformed nuclei	G. Popa, A. Aprahamian, A. Georgieva, J.P. Draayer	European Physical Journal A 25: 451-452 Suppl. 1 (2005)	NPD
32.	Partial fusion of a weakly bound projectile with heavy target at energies above the Coulomb barrier	Z.H. Liu, C. Signorini, M. Mazzocco, M. Ruan, H.Q. Zhang, T. Glodariu, Y.W. Wu, F. Soramel, G.J. Lin, F. Yang	European Physical Journal A 26 (1): 73-77 (2005)	NPD
33.	Analytical relationship for the cranking inertia	D. N. Poenaru, R. A. Gherghescu, and W. Greiner	European Physical Journal A, 24, 355-359 (2005)	TPD
34.	Exotic nuclei near Ni-78 in a shell model approach	A.F. Lisetskiy, B.A. Brown, M. Horoi	European Physical Journal A, 25: 95-96 Suppl. 1 (2005)	TPD
35.	On-line production of Rb and Cs isotopes from uranium carbide targets	A.Andrighetto, O. Bajeat, A.E. Barzakh, S. Essabaa, D.V. Fedorov, A.M. Ionan, V.S. Ivanov, R. Leroy, G. Lhersonneau, K.A. Mezilev, F.V. Moroz, S.Y.Orlov, V.N. Panteleev, L. Stroe, L.B. Tecchio, A. Villari, Y.M. Volkov, X.F. Wang	European Physical Journal A23 (2): 257-264 (2005)	NPD
36.	A new measurement of J/psi suppression in Pb-Pb collisions at 158-GeV per nucleon	B. Alessandro,V. Boldea, S. Dita, C. Alexa S. Constantinescu et al. NA50 Collaboration	European Physical Journal C39:335-345 (2005)	PPD ITCD
37.	The J/psi normal nuclear absorption	S. Dita, G. Borges, S. Constantinescu et al., NA50 Collaboration	European Physical Journal C43:161-165,2005	PPD
38.	Ab initio no-core shell model	J.P. Vary, S. Stoica, et al.	European Physics Journal A, Volume 25, p.475, (2005)	TPD
39.	Distribution of Niobium and Zirconium microelements in ceramic materials	E. Dimitriu, R.Ramer, A. Calboreanu	Feroelectrics, 27, 123 (2005)	NPD
40.	The dynamic of tritium-including OBT- in the aquatic food chain	D. Galeriu, R. Heling and A. Melintescu	Fusion Science and Technology, 48, 1 779-782 (2005)	LEPD
41.	EXODET: A new approach to detection systems for RIB nuclear physics based on ASIC chips developed for high-energy experiments	M. Romoli, M. Di Pietro, E. Vardaci, A. De Francesco, M. Mazzocco, R. Bonetti, A. de Rosa, T. Glodariu, A. Guglielmetti, G. Inglima, M. La Commara, B. Martin, V. Masone, P. Parascandolo, D. Pierroutsakou, M. Sandoli, P. Scopel, C. Signorini, F. Soramel, L. Stroe	IEEE Transactions on Nuclear Science 52 (5): 1860-1864, 3, (2005)	NPD
42.	Distributed computing grid experiences in CMS	J. Andreeva, A. Anjum, T. Barrass, D. Bonacorsi, J. Bunn, P. Capiluppi, M. Corvo, N. Darmenov, N. de Filippis, F. Donno, G. Donvito, G. Eulisse, A. Fanfani, F. Fanzago, A. Filine, C. Grandi, J.M. Hernandez, V. Innocente, A. Jan, S. Lacaprara, I. Legrand, S. Metson, H. Newman, D. Newbold, A. Pierro, L. Silvestris, C. Steenberg, H. Stockinger, L. Taylor, M. Thomas, L. Tuura, T. Wildish, F. van Lingen	IEEE Transactions on Nuclear Science, 52 (4): 884-890 (2005)	NPD
43.	Dielectric barrier discharge technique in improving the wettability and adhesion properties of polymer surfaces	N. Dumitrascu, I. Topala, G. Popa	IEEE Transactions on Plasma Science, 33 (5): 1710-1714 (2005)	NPD
44.	How to calibrate the time scale of emission of intermediate mass fragments	J. Wilczynski, E. De Filippo, A. Pagano, F. Amorini, A. Anzalone, L. Auditore, V. Baran, I. Berceanu, J. Blicharska, J. Brzychczyk, A. Bonasera, B. Borderie, R. Bogault, M. Bruno, G. Cardella, S. Cavallaro, M.B. Chatterjee, A. Chbihi, J. Cibor, M. Colonna, M. D'Agostino, R. Dayras, M. Di Toro, J. Frankland, E. Galichet, W. Gawlikowicz, E. Geraci, F. Giustolisi, A. Grzeszczuk, P. Guazzoni, D. Guinet, M. Iacono-Manno, S. Kowalski, E. La Guidara, G. Lanzano, G. Lanzalone, N. Le	Int. J. Mod. Phys. E-Nucl. Phys. 14 (3): 353-357 (2005)	TPD

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45.	Kaonic hydrogen measurement with DEAR at DAPHNE	M. Cargnelli, G. Beer, A. Bragadireanu, C. Curceanu (Petrascu), J. Egger, H. Fuhrman, C. Guaraldo, M. Iliescu, T. Ishiwatari, K. Itakashi, M. Iwasaki, P. Kienle, T. Koike, B. Lauss, V. Lucherini, L. Ludhova, J. Marton, F. Mulhauser, T. Ponta, L. Schaller, R. Seki, D. Sirghi, F. Sirghi, J. .Zmeskal	Int. J.Mod.Phys. A, 20, 341-348 (2005)	PPD
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47.	Indirect measurements around the knee: recent results from KASCADE	H. Ulrich et al. (The KASCADE Collaboration)	Int.J.Mod.Phys. A, 20, 6774-6776 (2005)	ANPD
48.	Reconstruction of total muon number in KASCADE-GRANDE	J. Van Buren, T. Antoni, W.D. Apel, F. Badea, K. Bekk, A. Bercuci, M. Bertaina, H. Blumer, H. Bozdog, I.M. Brancus, M. Bruggemann, P. Buchholz, C. Buttner, A. Chiavassa, K. Daumiller, F. Di Pierro, P. Doll, R. Engel, J. Engler, F. Fessler, P.L. Ghia, H.J. Gils, R. Glasstetter, A. Haungs, D. Heck, J.R. Horandel, K.H. Kampert, H.O. Klages, Y. Kolotaev, G. Maier, H.J. Mathes, H.J. Mayer, J. Milke, B. Mitrica, C. Morello, M. Muller, G. Navarra, R. Obenland, J. Oehlschlager, S. Ostapchenko, S. Over, M. Petcu, S. Plewnia, H. Rebel, A. Risse, M. Roth, H. Schieler, J. Scholz, M. Stumpert, T. Thouw, G. Toma, G.C. Trinchero, H. Ulrich, S. Valchierotti, W. Walkowiak, A. Weindl, J. Wochele, J. Zabierowski, S. Zagromski, D. Zimmermann	Int.J.Mod.Phys. A, 20, 6855-6857 (2005)	NPD
49.	Primary energy estimation and mass discrimination by EAS lateral charged particle distributions simulated for KASCADE-Grande	I. M. Brancus, B. Mitrica, G. Toma, O. Sima, H. Rebel, A. Haungs, A. F. Badea, J. Oehlschlaeger	Int.J.Mod.Phys.A20: 6784-6786 (2005)	NPD
50.	The detection of the high-energy EAS muon component with the lst detector of KASCADE-GRANDE	A. Bercuci, T. Antoni, W.D. Apel, F. Badea, K. Bekk, M. Bertaina, H. Blumer, H. Bozdog, I.M. Brancus, M. Bruggemann, P. Buchholz, C. Buttner, A. Chiavassa, K. Daumiller, F. Di Pierro, P. Doll, R. Engel, J. Engler, F. Fessler, P.L. Ghia, H.J. Gils, R. Glasstetter, A. Haungs, D. Heck, J.R. Horandel, K.H. Kampert, H.O. Klages, Y. Kolotaev, G. Maier, H.J. Mathes, H.J. Mayer, J. Milke, B. Mitrica, C. Morello, M. Muller, G. Navarra, R. Obenland, J. Oehlschlager, S. Ostapchenko, S. Over, M. Petcu, S. Plewnia, H. Rebel, A. Risse, M. Roth, H. Schieler, J. Scholz, M. Stumpert, T. Thouw, G. Toma, G.C. Trinchero, H. Ulrich, S. Valchierotti, J. Van Buren, W. Walkowiak, A. Weindl, J. Wochele, J. Zabierowski, S. Zagromski, D. Zimmermann	Int.J.Mod.Phys.A20:6781-6783 (2005)	NPD
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53.	On the electronic transport and optical properties of ZnTe thin films	G.I. Rusu, P. Prepelita, N. Apetroaei, G. Popa	J. Optoelectron. Adv. M. , 7 (2): 829-835 (2005)	NPD
54.	Polyethyleneterephthalate (PET) films interactions with low energy oxygen ions	M. Gheorghiu, M. Aflori, D. Dorohoi, G. Popa	J. Optoelectron. Adv. M. , 7 (2): 841-844 (2005)	NPD
55.	Electrical and optical diagnosis of a cavity hollow-cathode post-discharge used as a sputtering source	P.C. Balan, R. Apetrei, D. Luca, C. Ionita, R. Schrittwieser, G. Popa	J. Optoelectron. Adv. M. , 7 (5): 2459-2464 (2005)	NPD
56.	On the secondary electron emission in DC magnetron discharge	C. Costin, G. Popa, G. Gousset	J. Optoelectron. Adv. M. , 7 (5): 2465-2469 (2005)	NPD
57.	Argon rf plasma treatment of PET films for silicon films adhesion improvement	I.A. Rusu, G. Popa, S.O. Saied, J.L. Sullivan	J. Optoelectron. Adv. M. , 7 (5): 2529-2534 (2005)	NPD
58.	Influence of dielectric barrier discharge treatments on the surface properties of polyamide-6 films	G. Borcia, N. Dumitrascu, G. Popa	J. Optoelectron. Adv. M. , 7 (5): 2535-2538 (2005)	NPD
59.	Correlation between surface modifications induced on PET/TiO2 sample by DBD plasma produced in He/N-2 gas mixture and plasma parameters	A.S. Chiper, N. Apetroaei, G. Popa	J. Optoelectron. Adv. M. , 7 (5): 2561-2570 (2005)	NPD
60.	Dysprosium doped CaSO4 for high sensitivity X and gamma-rays detectors	A. Stochioiu, M. Sahagia, I. Georgescu, F. Scarlat	J. Optoelectron. Adv. M., 7, 3, 1657-1663 (2005)	RPC
61.	Archetypal energy landscapes: dynamical diagnosis	F. Despa, D. J. Wales, R. S. Berry	J. Chem. Phys. 122 024103 (2005)	TPD
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63.	Growth and characterization of a-axis textured ZnO thin films	L.C. Nistor, C. Ghica, D. Matei, G. Dinescu, M. Dinescu, G. Van Tendeloo	J. Cryst. Growt., 277 (1-4): 26-31, (2005)	420
64.	Upward movement of tritium from contaminated ground-waters: a numerical analysis	Y. Belot, B.M. Watkins, O. Edlund, D. Galeriu, G. Guinois, A.V. Golubev, C. Meurville, W. Raskob, M. Täschner and H. Yamazawa	J. Environ. Radioactiv. , 84, 2 259-270 (2005)	LEPD
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66.	Processing and characterization of ferroelectric thin films obtained by pulsed laser deposition	F. Craciun, M. Dinescu, P. Verardi, N. Scarisoreanu, A. Moldovan, A. Purice, C. Galassi,	J. Eur. Ceram. Soc., 25 (12): 2299-2303 (2005)	420
67.	Proximity effect of vanadium on strain and spin-density waves in thin Cr films	E. Kravtsov, R. Brucas, B. Hjorvarsson, A. Hoser, G. McIntyre, A. Nefedov, F. Radu, A. Remhof, H. Zabel	J. Magn. Magn. Mater., 286: 425-431 (2005)	NPD

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69.	Automated identification of novel amphetamines using a pure neural network and neural networks coupled with principal component analysis	S. Gosav, M. Praisler, D.O. Dorohoi, G. Popa	J. Mol. Struct., 744: 821-825 Sp. Iss. SI 3 (2005)	NPD
70.	Kinetic (PIC) simulations for a plane probe in a collisional plasma	S. Teodoru, D. Tskhakaya, S. Kuhn, D.D. Tskhakaya, R. Schrittwieser, C. Ionita, G. Popa	J. Nucl. Mater. , 337 (1-3): 1111-1115 1 (2005)	NPD
71.	Spatiotemporal optical solitons	B.A. Malomed, D. Mihalache, F. Wise, L. Torner	J. Opt. B-Quantum S. O. 7 (5): R53-R72 (2005)	TPD
72.	Determination of the difussion coefficients for ternary systems by Gosting difusiometer; aparatus and method	D. Buzatu, C. Popa, E. Petrescu, F.D. Buzatu	J. Optoel. Adv. Mat., 7, 1079-1090 (2005)	TPD
73.	Dynamic light scattering: a useful optical method to probe common ion-effects in protein-salt aqueous solutions	D. Buzatu, O. Annunziata, E. Petrescu, C. Popa, F. D. Buzatu	J. Optoel. Adv. Mat., 7, 3161-3168 (2005)	TPD
74.	Finite-level systems, Hermitian operators, isometries and a novel parametrization of Stiefel and Grassmann manifolds	P. Dita	J. Phys. A – Math. Gen., 38, 2657-2668 (2005)	TPD
75.	Quantum anomalies for generalized Euclidean Taub-NUT metrics	I. I. Cotaescu, S. Moroianu, M. Visinescu	J. Phys. A:Math. Gen., 38, 7005-7019 (2005)	TPD
76.	Synthesis of ^{298}114 within isobaric reaction channels	Radu A. Gherghescu and Walter Greiner	J. Phys. G 31 1225-1231 (2005)	TPD
77.	The CLARA-PRISMA setup installed at LNL: first results	A. Gadea, N. Marginean, L. Corradi, S.M. Lenzi, C.A. Ur, E. Farnea, G. de Angelis, E. Fioretto, D.R. Napoli, A.M. Stefanini, S. Szilner, M. Axiotis, B.R. Behera, A. Latina, C. Rusu, W. Zhimin, D. Bazzacco, S. Beghini, S. Lunardi, G. Montagnoli, R. Menegazzo, F. Scarlassara, F. Della Vedova, M. Nespolo, A. Bracco, F. Camera, S. Leoni, B. Million, M. Pignanelli, G. Pollarolo, M. Ttotta, P.G. Bizzeti, A.M. Bizzeti-Sona, D. Curien, P. Medina, M. Chambit, R. Chapman, X. Liang, S..J. Freeman, A. Smith, B.J. Varley, V. Pucknell, R. Lemmon	J. Phys. G Nucl. Partic., 31 (10): S1443-S1448 (2005)	NPD
78.	Towards a parity-dependent level density for astrophysics	D. Mocelj, T. Rauscher, F.K. Thielemann, G.M. Pinedo, K. Langanke, L. Pacearescu, A. Fassler	J. Phys. G Nucl. Partic., 31 (10): S1927-S1930 (2005)	TPD
79.	Dynamical single-particle effects in the threshold fission cross section	M. Mirea, L. Tassan-Got, C. Stephan, C.O. Bacri, P. Stoica and R.C. Bobulescu	J. Phys. G, 31, 1165-1181 (2005)	NPD
80.	Remarks on the shape transition from spherical to deformed gamma unstable nuclei	A. A. Raduta, A. Gheorghe and A. Faessler	J. Phys. G, 31, 337-353 (2005)	TPD
81.	Coherent state description of the shape phase transition in even-even Gd isotopes	A. A. Raduta and A. Faessler	J. Phys. G, 31, 873-901 (2005)	TPD
82.	Systematics of nuclear level density parameters	D. Bucurescu, T. von Egidy	J. Phys. G31(2005)S1675-S1680	NPD
83.	High-resolution study of the Gamow-Teller strength distribution starting from the ground state of 14N in the beta- and beta+ directions	A. Negret, T. Adachi, C. Baumer, A.M.van den Berg, G.P.A. Berg, P. von Brentano, D. Frekers, D. De Frenne, K. Fujita, Y. Fujita, E.-W. Grewe, P. Haefner, K. Hatanaka, M. Hunyadi, E. Jacobs, A. Korff, K. Nakanishi, L. Popescu, S. Rakers, Y. Sakemi, Y. Shimbara, Y. Shimizu, Y. Tameshige, A. Tamii, M. Uchida, H.J. Wortche and M. Yosoi	J. Phys. G31, S1931 (2005)	NPD

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85.	Ferroelectric (Na1/2Bi1/2)TiO3-BaTiO3 thin films obtained by pulsed laser deposition	M. Dinescu, F. Craciun, N. Scarisoreanu, P. Verardi, A. Moldovan, A. Purice, A. Sanson, C. Galassi	J. Phys. IV, 128: 77-80, (2005)	420
86.	Metallic ferromagnetism in the presence of orbital degeneracy	S. Cojocaru, R. Citro, M. Marinaro	J. Phys.: Condens. Matter, 17, 1113-1126 (2005)	TPD
87.	Production and chemical separation of V-48	Z. Szucs, D. Dudu, C. Cimpeanu, A. Luca, E. Duta, M. Sahagia	J. Radioanal. Nucl. Ch., 265 (3): 507-509 (2005)	Cycl. RPC
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89.	Population of yrast states in 191Os using deep-inelastic reactions	G.A. Jones, Zs. Podolyak, P.M. Walker, P.H. Regan, G.de Angelis, M. Axiotis, D. Bazzacco, P.G. Bizzeti, F. Brandolini, R. Broda, D. Bucurescu, E. Farnea, W. Gelletly, A. Gadea, M. Ionescu-Bujor, A. Iordachescu, Th. Kroll, S.D. Langdown, S. Lunardi, N. Marginean, T. Martinez, N.H. Medina, B. Quintana, B. Rubio, C.A. Ur, J.J. Valiente-Dobon, S.J. Williams, Y.H. Zhang	J.Phys.(London) G, 31, S1891 (2005)	NPD
90.	Spectroscopy around N = 20 shell closure: beta-n decay study of 35Al	C.Timis, J.C.Angelique, A.Buta, N.L.Achouri, D.Baiborodin, P.Baumann, C.Borcea, S.Courtin, P.Dessagne, Z.Dlouhy, J.M.Daugas, S.Grevy, D.Guillemaud-Mueller, A.Knipper, F.R.Lecolley, J.L.Lecouey, M.Lewitowicz, E.Lienard, S.M.Lukyanov, F.M. Marques, C. Miehe, J. Mrazek, F. Negoita, F. Nowacki, F.de Oliveira, N.A. Orr, J. Peter, S. Pietri, Yu.E. Penionzhkevich, E. Poirier, M. Stanoiu, G. Walter	J.Phys.(London) G, 31, S1965 (2005)	NPD
91.	J/psi production and suppression at SPS energies	S. Dita, P. Cortese,V. Boldea, C. Alexa et al. (NA50 Collaboration)	J.Phys.G, 31:S809-S816, (2005)	PPD
92.	Magnetic induction and domain walls in magnetic thin films at remanence	F. Radu, V. Leiner, K. Westerholt, H. Zabel, J. McCord, A. Vorobiev, J. Major, D. Jullien, A. Humblot, F. Tasset	Journal of Physics-Condensed Matter, 17 (10): 1711-1718 16 (2005)	NPD
93.	Properties of La and Nb-modified PZT thin films grown by radio frequency assisted pulsed laser deposition	P. Verardi, F. Craciun, M. Dinescu, N. Scarisoreanu, A. Moldovan, A. Purice, C. Galassi	Mater. Sci. Eng. B - Solid State Materials for Advanced Technology, 118 (1-3): 39-43 25 (2005)	420
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95.	The p-wave threshold effect and quasiresonant scattering	C. Hategan, G. Graw, H. Comisel	Mod. Phys. Lett	NPD
96.	Global fits to the Cabibbo-Kobayashi-Maskawa matrix: unitarity condition method versus standard unitarity triangles approach	P. Dita	Mod. Phys. Lett. A, 20, 23, 1709-1721 (2005)	TPD
97.	A simple signal of noncommutative space	Ciprian Acatrinei	Mod. Phys. Lett. .A, 20:1437-1442, (2005)	TPD
98.	Special solutions for Ricci flow equation in 2D using the linearization approach	S. A. Carstea, M. Visinescu	Mod. Phys. Lett. A, 20, 2393-3002 (2005)	TPD
99.	Detection and imaging of atmospheric radio flashes from cosmic ray air showers	H. Falcke, W.D. Apel, A.F. Badea, L. Bahren, K. Bekk, A. Bercuci, M. Bertaina, P.L. Biermann, J. Blumer, H. Bozdog, I.M. Brancus, S. Buitink, M. Bruggemann, P. Buchholz, H. Butcher, A. Chiavassa, K. Daumiller, A.G. de Bruyn, C.M. de Vos, F. Di Pierro, P. Doll, R. Engel, H. Gemmeke, P.L. Ghia, R. Glasstetter, C. Grupen, A. Haungs, D. Heck, J.R. Horandel, A. Horneffer, T. Huege, K.H. Kampert, G.W. Kant, U. Klein, Y.	Nature, 435 (7040): 313-316 19 (2005)	NPD

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100.	Fragmentation studies with the CHIMERA detector at LNS in Catania: recent progress	A. Pagano, M. Alderighi, F. Amorini, A. Anzalone, N. Arena, L. Auditore, V. Baran, M. Bartolucci, I. Berceanu, J. Blicharska, J. Brzychczyk, A. Bonasera, B. Borderie, R. Bougault, M. Bruno, G. Cardella, S. Cavallaro, M.B. Chatterjee, A. Chbihi, J. Cibor, M. Colonna, M. D'Agostino, R. Dayras, E. De Filippo, M. Di Toro, W. Gawlikowicz, E. Geraci, F. Giustolisi, A. Grzeszczuk, P. Guazzoni, D. Guinet, M. Iacono-Manno, S. Kowalski, E. La Guidara, G. Lanzano, G. Lanzalone, N. Le Neindre, S. Li, S. Lo Nigro, C. Maiolino, Z. Majka, G. Manfredi, T. Paduszynski, T. Papa, M. Petrovici, E. Piasecki, S. Pirrone, R. Planeta, G. Politi, A. Pop, F. Porto, M.F. Rivet, E. Rosato, F. Rizzo, S. Russo, P. Russotto, M. Sassi, G. Sechi, V. Simion, K. Siwek-Wilczynska, I. Skwira, M.L. Sperduto, J.C. Steckmeyer, L. Swiderski, A. Trifiro, M. Trimarchi, G. Vannini, M. Vigilante, J.P. Wieleczko, J. Wilczynski, H. Wu, Z. Xiao, L. Zetta, W. Zipper	Nucl. Phys. A, 734: 504-511 (2004)	TPD
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102.	Nuclear structure of Te-127 studied with (n, gamma) and ((d)over-right-arrow, p) reactions and interpreted with IBFM and QPM	J. Honzatko, V. Bondarenko, I. Tomandl, T. von Egidy, H.F. Wirth, D. Bucurescu, V.Y. Ponomarev, N. Marginean, R. Hertenberger, Y. Eisermann, G. Graw, L Rubacek	Nucl. Phys. A , 756 (3-4): 249-307 (2005)	NPD
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104.	Complex fission phenomena	D. N. Poenaru, R. A. Gherghescu, and W. Greiner	Nucl. Phys. A, 747, 182-205 (2005)	TPD
105.	Latest results on e(+)e(-) pair production in CERES	S. Yurevich, A. Andronic,...(group CERES Collaboration)	Nucl. Phys. A, 749: 160C-165C, 7 (2005)	NPD
106.	Correlations between signals of the liquid-gas phase transition in nuclei	M.F. Rivet, N. Le Neindre, J.P. Wieleczko, B. Borderie, A. Chbihi, J.D. Frankland, M. Parlog, M. Pichon, B. Tamain	Nucl. Phys. A, 749: 73C-82C, 7 (2005)	NPD
107.	The DEAR experiment: first results on kaonic hydrogen	J.Smeskal, G.Beer, A.Bragadireanu, M.Cargnelli, C.Curceanu (Petrascu), J.Egger, H.Fuhrman, C.Guaraldo, M.Iliescu, T.Ishiwatari, K.Itakashi, M.Iwasaki, P.Kienle, B.Lauss, V.Lucherini, L.Ludhova, J.Marton, F.Mulhauser, T.Ponta, L.Schaller, R.Seki, D.Sirghi and F.Sirghi	Nucl. Phys. A, 754, 369-374 (2005)	PPD
108.	Detailed spectroscopy of ^{113}Cd through transfer reactions	D. Bucurescu, Y. Eisermann, G. Graw, R. Hertenberger, H.-F. Wirth, Yu.V. Ponomarev	Nucl. Phys. A, 756, 54 (2005)	NPD
109.	Can one measure the temperature dependence of the fusion reaction rates?	M. Horoi	Nucl. Phys. A, 758: 138C-141C, 25 (2005)	TPD
110.	Comparison of approaches for spin- and parity-dependent shell model nuclear level density	M. Horoi, M. Ghita, V. Zelevinsky	Nucl. Phys. A, 758: 142C-145C 25 (2005)	TPD
111.	Parity-dependence in the nuclear level density	D. Mocelj, T. Rauscher, K. Langanke, G.M. Pinedo, L. Pacearescu, A. Fassler, F.K. Thielemann	Nucl. Phys. A, 758: 154c-157c, (2005)	TPD

112.	Analysis of deuteron elastic scattering on Li-6,Li-7 up to 50 MeV	M. Avrigeanu, W. von Oertzen, U. Fischer, V. Avrigeanu	Nucl. Phys. A, 759 (3-4): 327-341 (2005)	NPD
113.	Non-anticommutative chiral singlet deformation of N = (1,1) gauge theory	S. Ferrara, E. Ivanov, O Lechtenfeld, E Sokatchev, B. Zupnik	Nucl. Phys. B, 704 (1-2): 154-180 (2005)	Cycl.
114.	Non-anticommutative deformation of N = (1,1) hypermultiplets	E. Ivanov, O. Lechtenfeld, B. Zupnik	Nucl. Phys. B, 707 (1-2): 69-86 (2005)	Cycl.
115.	N=8 mechanics in SU(2) x SU(2) harmonic superspace	S. Bellucci, E. Ivanov, A. Sutulin	Nucl. Phys. B, 722 (3): 299-329 (2005)	Cycl.
116.	Bounds on the slope and curvature of the scalar K pi form factor at zero momentum transfer	C. Bourrely and I. Caprini	Nucl. Phys. B, 722, 149 (2005)	TPD
117.	Dissecting the knee - Air shower measurements with KASCADE	J.R. Horandel, T. Antoni, W.D. Apel, A.F. Badea, K. Bekk, A. Bercuci, H. Blumer, H. Bozdog, I.M. Brancus, C. Buttner, A. Chilingarian, K. Daumiller, P. Doll, R. Engel, J. Engler, F. Fessler, H.J. Gils, R. Glasstetter, A. Haungs, D. Heck, K.H. Kampert, H.O. Klages, G. Maier, H.J. Mathes, H.J. Mayer, J. Milke, M. Muller, R. Obenland, J. Oehlschlager, S. Ostapchenko, M. Petcu, H. Rebel, A. Risse, M. Risse, M. Roth, G. Schatz, H. Schieler, J. Scholz, T. Thouw, H. Ulrich, J. van Buren, A. Vardanyan, A. Weindl, J. Wochele, J. Zabierowski	Nucl. Phys. B-Proceedings suppl., 138: 317-320 (2005)	NPD
118.	Development of uranium carbide targets for the on-line production of neutron-rich isotopes	V.N. Panteleev, A.E. Barzakh, D.V. Fedorov, A.M. Ionan, V.S. Ivanov, K.A. Mezilev, F.V. Moroz, S.Y. Orlov, Y.M. Volkov, A. Andrighetto, E. Del Piero, G. Lhersonneau, L. Stroe, V. Rizzi, L.B. Tecchio, M. Dubois, G. Gaubert, P. Jardin, N. Lecesne, R. Leroy, J.Y. Pacquet, M.G. Saint Laurent, A.C.C. Villari, O. Bajeat, S. Essabaa, C. Lau, M. Menna	Nucl. Instr. and Methods in Phys. Res. Section B - Beam Interactions with Materials and Atoms, 240 (4): 888-894 (2005)	NPD
119.	Studies on proton irradiation-induced modifications of KU1 quartz glass ultraviolet transmission properties	B. Constantinescu, R. Bugoi, M. Nemteanu, P. Ioan	Nucl. Instr. and Methods in Phys. Res. A. accepted 2005	ANPD
120.	Neutralization of noble gas ions on ionic insulators:Auger neutralization or double-electron capture	P. Rousseau, M. Gugiu, H. Khemliche, P. Roncin	Nucl. Instr. and Methods in Phys. Res. B, 230, 361–368 (2005)	NPD
121.	Romanian ancient gold objects provenance studies using micro-beam methods: the case of Pietroasa hoard	B. Constantinescu, R. Bugoi, V. Cojocaru, D. Voiculescu, D. Grambole, F. Herrmann, D. Ceccato	Nucl. Instr. and Methods in Phys. Res. B, 231, 541-545 (2005)	NPD, ANPD
122.	RBS, ERDA, TEM and SAED characterisation of sol-gel PZT films	D. Pantelica, F. Vasiliu, P. Ionescu, F. Negoita	Nucl. Instr. and Methods in Phys. Res. B, 240,400-404(2005)	NPD
123.	Electron/pion identification with ALICE TRD prototypes using a neural network algorithm	C. Adler, A. Andronic, V. Angelov, H. Appelshauser, C. Baumann, C. Blume, P. Braun-Munzinger, D. Bucher, O. Busch, V. Catanescu, S. Chernenko, M. Ciobanu, H. Daues, D. Emschermann, O. Fateev, Y. Foka, C. Garabatos, R. Glasow, H. Gottschlag, T. Gunji, H. Hamagaki, J. Hehner, N. Heine, N. Herrmann, M. Inuzuka, E. Kislov, T. Lehmann, V. Lindenstruth, C. Lippmann, W. Ludolphs, T. Mahmoud, A. Marin, D. Miskowiec, K. Oyama, Y. Panebratsev, V. Petracek, M. Petrovici, A. Radu, K. Reygers, I. Rusanov, A. Sandoval, R. Santo, R. Schicker, R.S. Simon, L. Smykov, H.K. Soltveit, J. Stachel, H. Stelzer, M.R. Stockmeier, G. Tsiledakis, W. Verhoeven, B. Vulpescu, J.P. Wessels, A. Wilk, B. Windelband, V. Yurevich, Y. Zanevsky, O. Zaudtke	Nucl. Instr. and Methods in Phys. Res. Section A - Accelerators Spectrometers Detectors And Associated Equipment, 552 (3): 364-371 1 (2005)	NPD

124.	Neutron yield from a thick C-13 target irradiated by 90 MeV protons	O. Alyakrinskiy, A. Andrighetto, M. Barbui, S. Brandenburg, M. Cinausero, B. Dalena, P. Dendooven, E E. Fioretto, G. Lhersonneau, W. Lyapin, G. Prete, G. Simonetti, L. Stroe, L.B. Tecchio, W.H. Trzaska	Nucl. Instr. and Methods in Phys. Res. Section A - Accelerators Spectrometers Detectors And Associated Equipment, 547 (2-3): 616-627 1 (2005)	NPD
125.	Position reconstruction in drift chambers operated with Xe, CO2 (15%)	C. Adler, A. Andronic, H. Appelshauser, J. Bielcikova, C. Blume, P. Braun-Munzinger, D. Bucher, O. Busch, V. Catanescu, M. Ciolanu, H. Daues, D. Emschermann, O. Fateev, P. Foka, C. Garabatos, T. Gunji, N. Herrmann, M. Inuzuka, M. Ivanov, E. Kislov, V. Lindenstruth, C. Lippmann, W. Ludolphs, T. Mahmoud, V. Petracek, M. Petrovici, S. Radomski, I. Rusanov, A. Sandoval, R. Santo, R. Schicker, K. Schwarz, R.S. Simon, L. Smykov, H.K. Soltveit, J. Stachel, H. Stelzer, G. Tsiledakis, B. Vulpescu, J.P. Wessels, B. Windelband, V. Yurevich, Y. Zanevsky, O. Zaudtke	Nucl. Instr. and Methods in Phys. Res. Section A - Accelerators Spectrometers Detectors And Associated Equipment, 540 (1): 140-157 11 (2005)	RPC
126.	The effect of highly ionising particles on the CMS silicon strip tracker	W. Adam....., O. Militaru.....	Nucl. Instr. and Methods in Phys. Res. Section A - Accelerators Spectrometers Detectors and Associated Equipment, 543 (2-3): 463-482 11 (2005)	ANPD
127.	Complementary use of ERDA and RBS/C for the determination of implanted atom and damage distributions in spinel	D. Pantelica, P. Ionescu, F. Negoita, N. Scintee, L. Thomé, S.E. Enescu and J. Jagielski	Nucl. Instr. and Methods in Phys. Res. Section B: Beam Interactions with Materials and Atoms, 240, 1-2, 376-380 (2005)	NPD
128.	NRBS, RBS, TEM and SAED characterisation of sol–gel PZT films	D. Pantelica, F. Vasiliu, P. Ionescu and F. Negoita	Nucl. Instr. and Methods in Phys. Res. Section B: Beam Interactions with Materials and Atoms, 240, 1-2, 400-404 (2005)	NPD
129.	Recent developments in the target-and-ion-source station for the SPIRAL II project at GANIL	P. Jardin, C. Barue, C. Canet, J. Cornell, M. Dubois, M. Dupuis, J.L. Flambard, G. Gaubert, C. Huet-Equilbec, N. Lecesne, P. Leheissier, F. Lemagnen, R. Leroy, J.Y. .Pacquet, L. Penescu, M.G. Saint Laurent, O. Tuske, A.C.C. Villari	Nucl. Instr. and Methods in Phys. Res. Section B-Beam Interactions with Materials and Atoms, 241 (1-4): 940-946 (2005)	NPD
130.	Measurement of isomeric states in 57Fe by single-crystal scintilation time spectrometer	V.A. Morozov, N,V. Morozova, T. Badica, Gh.Cata-Danil, D. Ghita, I.V. Popescu	Nucl. Instr. and Methods in Phys. Res., accepted, (2005)	NPD
131.	Application of genetic programming to high energy physics event selection	FOCUS Collaboration (J.M. Link, ..,D.Pantea, .., et al.)	Nucl. Instrum. Meth. A 551:504-527, (2005)	PPD
132.	K-shell ionization in (0.2-1.75) MeV/u Fe, Co + Cr and Fe + Cu collisions	C. Ciortea, I. Piticu, D. Fluerașu, D.E. Dumitriu, A. Enulescu, M.M. Gugiu, A.T. Radu, L.C. Penescu	Nucl. Instrum. Meth. B, 235, 1-4, 342-346 (2005)	Tandem
133.	Transverse momentum dependence of charmonium suppression in Pb - Pb collisions at the CERN SPS.	S. Dita et al., NA50 Collaboration	Nucl. Phys. .A, 749:243-250, (2005)	PPD
134.	Variational calculation of the effect of isospin mixing on superallowed Fermi beta decay in the A similar or equal to 70 mass region	A. Petrovici, K.W. Schmid, O. Radu, A. Faessler	Nucl. Phys. A, 747, 44 (2005)	NPD
135.	KASCADE: astrophysical results and test of hadronic interaction models	A. Haungs, T. Antoni, W.D. Apel, A.F. Badea, K. Bekk, A. Bercuci, H. Bluemer, H. Bozdog, I.M. Brancus, A-A. Chilingarian, K. Daumiller, P. Doll, R. Engel, J. Engler, F. Fessler, H.J. Gils, R. Glasstetter, D. Heck, J.R. Hoerandel, K.H. Kampert, H.O. Klages, G.Maier, H-J. Mathes, H.J. Mayer, J. Mielke, M. Mueller, R. Obenland, J. Oehlschlaeger, S. Ostapchenko, M. Petcu, H. Rebel, A. Risse, M. Risse, M. Roth, G. Schatz, H. Schieler, J. Scholz, T. Thouw, H. Ulrich, J. van Buren, A. Vardanyan, A. Weindl, J. Wochele, J. Zabierowski	Nucl. Phys. B, in press	NPD

136.	Optical Dyakonov surface waves at magnetic interfaces	L.C. Crasovan, D. Artigas, D. Mihalache, L. Torner	Optics Letters, 30 (22): 3075-3077 (2005)	TPD
137.	Stable spinning optical solitons in two and three dimensions	D. Mihalache	Opto-Electronics Review, 13 (2): 123-127 (2005)	TPD
138.	First measurement of the pi+pi- atom lifetime	B.Adeva, L.Afanasev, M.Benayoun, A.Benelli, Z.Berka, G.Caragheorghiopol, T.Cechak, S.Constantinescu, C.Detraz, A.Dondarev, D.Dreossi, D.Drijard, A.Dudarev, I.Evanghelou, M.Ferro-Luzzi, M.Gallas, J.Gerndt, R.Giacomich, P.Gianotti, D.Goldin, F.Gomez, A.Gorin, O.Gortchalov, C.Guaraldo, M.Hansroul, M.Iliescu, M.Jabitski, V.Kapoukhine, J.Kluson, M.Kobayashi, P.Kokkos, V.Komarov, A.Koulikov, A.Kouptsov, V.Krouglov, L.Krouglova, V.Kurochin, K.Kuroda, A.Lamberto, A.Lanaro, V.Lapshine, R.Lednitsky, P.Leruste, P.Levisandri, A.Lopez Aguera, V.Lucherini, T.Maki, N.Manthos, I.Mamilov, L.Montanet, J.Narjoux, L.Nemenov, M.Nikitin,T.Nunez Pardo, K.Okada, V.Olchevschii, A.Pazos, M.Pentia, A.Penzo, J.Perreau, C.Petrascu, M.Plo, T.Ponta, D.Pop, G.Rappazzo, A.Riazantsev, A.Rodriguez Fernandez, A.Romero, V.Rykaline, C.Santamarina, J.Saborido, J.Schacher, Ch.Schnetz, A.Sidorov, J.Smolik, F.Takeutchi, A.Tarasov, L.Tauscher, M.Tobar, S.Trusov, V.Utkin, P.Vazquez, O.Vazquez Doce, S.Vlachos, V.Yazkov, Y.Yoshimura and P.Zrelov	Phy. Lett. B, 619, 1-2, 50-60 (2005)	PPD, NPD
139.	Kinetic energy spectra for fragments and break-up density in multifragmentation	A.R. Raduta, B. Borderie, E. Bonnet, N. Le Neindre, S. Piantelli, M.F. Rivet	Phy. Lett. B, 623 (1-2): 43-47 (2005)	NPD
140.	IMF isotopic properties in semi-peripheral collisions at Fermi energies	R. Lionti, V. Baran, M. Colonna, M.Di Toro	Phy. Lett. B, 625, 33-40 (2005)	TPD
141.	Excitation function of elliptic flow in Au plus Au collisions and the nuclear matter equation of state	A. Andronic, V. Barret, Z. Basrak, N. Bastid, L. Benabderrahmane, G. Berek, R. Caplar, E. Cordier, P. Crochet, P. Dupieux, M. Dzelalija, Z. Fodor, I. Gasparic, Y. Grishkin, O.N. Hartmann, N. Herrmann, K.D. Hildenbrand, B. Hong, J. Kecskemeti, Y.J. Kim, M. Kirejczyk, P. Koczon, M. Korolija, R. Kotte, T. Kress, A. Lebedev, Y. Leifels, X. Lopez, A. Mangiarotti, M. Merschmeyer, W. Neubert, D. Pelte, M. Petrovici, F. Rami, W. Reisdorf, B. de Schauenburg, A. Schuttauf, Z. Seres, B. Sikora, K.S. Sim, V. Simion, K. Siwek-Wilczynska, V. Smolyankin, M.R. Stockmeier, G. Stoicea, Z. Tyminski, P. Wagner, K. Wisniewski, D. Wohlfarth, Z.G. Xiao, I. Yushmanov, A. Zhilin	Phy. Lett. B, 612 (3-4): 173-180 (2005)	NPD
142.	Hindered E4 decay of the 12(+) yrast trap in Fe-52	A. Gadea, S.M. Lenzi, D.R. Napoli, M. Axiotis, C.A. Ur, G. Martinez-Pinedo, M. Gorska, E. Roeckl, E. Caurier, F. Nowacki, G. de Angelis, L. Batist, R. Borcea, F. Brandolini, D. Cano-Ott, J. Doring, C. Fahlander, E. Farnea, H. Grawe, M. Hellstrom, Z. Janas, R. Kirchner, M. La Commara, C. Mazzocchi, E. Nacher, C. Plettner, A. Plochocki, B. Rubio, K. Schmidt, R. Schwengner, J.L. Tain, J. Zylicz	Phy. Lett. B, 619 (1-2): 88-94 (2005)	NPD
143.	Higher spins from non-linear realizations of OSp(1 vertical bar 8)	E. Ivanov, J. Lukierski	Phy. Lett. B, 624 (3-4): 304-315 (2005)	Cycl.
144.	Gauge invariant counterparts and quantization of systems under holonomic constraints	M. S. Krivoruchenko, A. Faessler, A. A. Raduta and M. Fuchs	Phy. Lett. B. 608, 164 (2005)	TPD
145.	New results for the two neutrino double beta decay in deformed nuclei with angular momentum projected basis	A. A. Raduta, C. M. Raduta and A. Escuderos	Phy. Rev. C, 71, 034317 (2005)	TPD
146.	Positive and negative parity dipole bands in octupole deformed nuclei	A. A. Raduta, C.M. Raduta and Amand Faessler	Phys. Lett. B	TPD
147.	Stable three-dimensional solitons in attractive Bose-Einstein condensates loaded in an optical lattice	D. Mihalache, D. Mazilu, F. Lederer, B.A. Malomed, L.C. Crasovan, Y.V. Kartashov, L. Torner	Phys. Rev. A, 72 (2): 021601, (2005)	TPD

148.	Exact soliton solutions and nonlinear modulation instability in spinor Bose-Einstein condensates	L. Li, Z.D. Li, B.A. Malomed, D. Mihalache, W.M. Liu	Phys. Rev. A, 72 (3): 033611 (2005)	TPD
149.	Quantum states of neutrons in magnetic thin films	F. Radu, V. Leiner, M. Wolff, V.K. Ignatovich, H Zabel	Phys. Rev. B, 71 (21): 214423 (2005)	NPD
150.	Renormalization of the electron-phonon interaction in presence of charge fluctuations	R. Citro, S. Cojocaru and M. Marinaro	Phys. Rev. B, 72, 115108 (2005)	TPD
151.	Macroscopic-microscopic deformation energy in fusion isobaric reactions	Radu A. Gherghescu and Nicolas Carjan	Phys. Rev. C, 71 054612/1--8 (2005)	TPD
152.	First identification of excited states in the N=Z+1 nucleus Ru-89	N. Marginean, C. Rusu, D. Bucurescu, C.R. Alvarez, C.A. Ur, D. Bazzacco, S. Lunardi, P. Pavan, G. de Angelis, M. Axiotis, E. Farnea, A. Gadea, M. Ionescu-Bujor, A. Iordachescu, W. Krolas, T. Kroll, S.M. Lenzi, T. Martinez, R. Menegazzo, D.R. Napoli, B. Quintana, P. Spolaore, Y.H. Zhang, J. Wrzesinski	Phys. Rev. C, 70 (4): 044302 (2004)	NPD
153.	Neutron to proton ratios of quasiprojectile and midrapidity emission in the Ni-58+Ni-58 reaction at 52 MeV/nucleon	D. Theriault, A. Vallee, L. Gingras, Y. Larochelle, R. Roy, A. April, L. Beaulieu, F. Grenier, F. Lemieux, J. Moisan, M. Samri, C. St-Pierre, S. Turbide, B. Borderie, R. Bougault, P. Buchet, J.L. Charvet, A. Chbihi, J. Colin, D. Cussol, R. Dayras, D. Durand, J.D. Frankland, E. Galichet, D. Guinet, B. Guiot, P. Lautesse, J.F. Lecolley, N. Le Neindre, O. Lopez, A.M. Maskay, L. Nalpas, M. Parlog, P. Pawlowski, M.F. Rivet, E. Rosato, J.C. Steckmeyer, B. Tamain; E. Vient, C. Volant, J.P. Wieleczko, S.J. Yennello, E. Martin, E.Winchester	Phys. Rev. C, 71 (1): 014610 (2005)	NPD
154.	High spin structure of S-34 and the proton-neutron coupling of intruder states	P. Mason, N. Marginean, S.M. Lenzi, M. Ionescu-Bujor, F. Della Vedova, D.R. Napoli, T. Otsuka, Y. Utsuno, F. Nowacki, M. Axiotis, D. Bazzacco, P.G. Bizzeti, A. Bizzeti-Sona, F. Brandolini, M. Cardona, G. de Angelis, E. Farnea, A. Gadea, D. Hojman, A. Iordachescu, C. Kalfas, T. Kroll, S. Lunardi, T. Martinez, C.M. Petrache, B. Quintana, R.V. Ribas, C.R. Alvarez, C.A. Ur, R. Vlastou, S. Zilio	Phys. Rev. C, 71 (1): 014316 (2005)	NPD
155.	Gamma-ray spectroscopy of Hf-166: X (5) in N > 90?	E.A. McCutchan, N.V. Zamfir, R.F. Casten, M.A. Caprio, H. Ai, H. Amro, C.W. Beausang, A.A. Hecht, D.A. Meyer, J.J. Ressler	Phys. Rev. C, 71 (2): 024309 (2005)	NPD
156.	Experimental overview of Ni plus Ni collisions at 32 MeV/nucleon: Discriminant analysis and duality in the decay modes of a fusionlike system	P. Lautesse, A.M. Maskay, E. Gerlic, P. Desesquelles, J.L. Laville, O. Lopez, B. Borderie, R. Dayras, A. Demeyer, D. Durand, J.D. Frankland, E. Galichet, D. Guinet, B. Guiot, N. Le Neindre, J. Marie, L. Nalpas, M. Parlog, M. Pichon, M.F. Rivet, E. Rosato, R. Roy, C. Schmitt, B. Tamain, E. Vient, M. Vigilante, C. Volant, J.P. Wieleczko	Phys. Rev. C, 71 (3): 034602 (2005)	NPD
157.	Model-independent tracking of criticality signals in nuclear multifragmentation data	J.D. Frankland, A. Chbihi, A. Mignon, M.L. Begemann-Blaich, R. Bittiger, B. Borderie, R. Bougault, J.L. Charvet, D. Cussol, R. Dayras, D. Durand, C. Escano-Rodriguez, E. Galichet, D. Guinet, P. Lautesse, A. Le Fevre, R. Legrain, N. Le Neindre, O. Lopez, J. Lukasik, U. Lynen, L. Manduci, J. Marie, W.F.J. Muller, L. Nalpas, H. Orth, M. Parlog, A. Pichon, M.F. Rivet, E. Rosato, R. Roy, A. Saija, C. Schwarz, C. Sfienti, B Tamain, W. Trautmann, A. Trzcinski, K. Turzo, A. Van Lauwe, E. Vient, M. Vigilante, C. Volant, J.R. Wieleczko, B. Zwieglinski	Phys. Rev. C, 71 (3): 034607 (2005)	NPD
158.	Charged pion production in Ru-96(44)+Ru-96(44) collisions at 400A and 1528A MeV	B. Hong, Y.J. Kim, N. Herrmann, M.R. Stockmeier, A. Andronic, V. Barret, Z. Basrak, N. Bastid, M.L. Benabderrahmane, R. Caplar, P. Crochet, P. Dupieux, M. Dzelalija, Z. Fodor, A. Gobbi, Y. Grishkin, O.N. Hartmann, K.D. Hildenbrand, J. Kecskemeti, M. Kirejczyk, P. Koczon, M. Korolija, R. Kotte, T. Kress, A. Lebedev, Y. Leifels, X. Lopez, A. Mangiarotti, M.	Phys. Rev. C, 71 (3): 034902 (2005)	NPD

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159.	Gamma-ray spectroscopy of Te-132 through beta decay of a Sb-132 radioactive beam	R.O. Hughes, N.V. Zamfir, D.C. Radford, C.J. Barton, C. Baktash, M.A. Caprio, R.F. Casten, A. Galindo-Uribarri, C.J. Gross, P.A. Hausladen, E.A. McCutchan, J.J. Ressler, D. Shapira, D.W. Stracener, C.H. Yu	Phys. Rev. C, 71 (4): 044311 (2005)	NPD
160.	Reaction mechanisms of fast neutrons on stable Mo isotopes below 21 MeV	P. Reimer, V. Avrigeanu, S.V. Chuvaev, A.A. Filatenkov, T. Glodariu, A. Koning, A.J.M. Plompen, S.M. Qaim, D.L. Smith, H. Weigmann	Phys. Rev. C, 71 (4): 044617 (2005)	NPD
161.	Precise measurement of K-shell fluorescence yield in iridium: An improved test of internal-conversion theory	N. Nica, J.C. Hardy, V.E. Iacob, J.R. Montague, M.B. Trzhaskovskaya	Phys. Rev. C, 71 (5): 054320 (2005)	NPD
162.	Evolution of the prompt dipole gamma-ray emission with incident energy in fusion reactions	D. Pierroutsakou, B. Martin, G. Inglima, A. Boiano, A. De Rosa, M. Di Pietro, M. La Commara, R. Mordente, M. Romoli, M. Sandoli, M. Trotta, E. Vardaci, T. Glodariu, M. Mazzocco, C. Signorini, L. Stroe, V. Baran, M. Colonna, M.D. Toro, N. Pellegriti	Phys. Rev. C, 71 (5): 054605 (2005)	NPD
163.	Dynamical fission in Sn-124+Ni-64 collision at 35A MeV	E. De Filippo, A. Pagano, E. Piasecki, F. Amorini, A. Anzalone, L. Auditore, V. Baran, I. Berceanu, J. Blicharska, J. Brzychczyk, A. Bonasera, B. Borderie, R. Bougault, M. Bruno, G. Cardella, S. Cavallaro, M.B. Chatterjee, A. Chbihi, M. Colonna, M. D'Agostino, R. Dayras, M. Di Toro, J. Frankland, E. Galichet, W. Gawlikowicz, E. Geraci, F. Giustolisi, A. Grzeszczuk, P. Guazzoni, D. Guinet, M. Iacono-Manno, S. Kowalski, E. La Guidara, G. Lanzano, G. Lanzalone, N.L. Neindre, S. Li, S. Lo Nigro, C. Maiolino, Z. Majka, M. Papa, M. Petrovici, S. Pirrone, R. Planeta, G. Politi, A. Pop, F. Porto, M.F. Rivet, E. Rosato, F. Rizzo, S. Russo, P. Russotto, M. Sassi, K. Schmidt, K. Siwek-Wilczynska, I. Skwira, M.L. Sperduto, J.C. Steckmeyer, L. Swiderski, A. Trifiro, M. Trimarchi, G. Vannini, M. Vigilante, J.P. Wieleczko, J. Wilczynski, H. Wu, Z. Xiao, L. Zetta, W. Zipper	Phys. Rev. C, 71 (6): 064604 (2005)	TPD
164.	Description of the two neutrino double beta decay in deformed nuclei with projected spherical single particle states	A.A. Raduta, C.M. Raduta, and A. Escuderos	Phys. Rev. C, 71 024307 (2005)	TPD
165.	High-spin states in the nuclei 91Y and 95Nb	D.Bucurescu, Zs.Podolyak, C. Rusu, G. de Angelis, Y.H. Zhang, G. Cata-Danil, I.Cata-Danil, M. Ivascu, N.~Marginean, R. Marginean, L.C. Mihailescu, G.A. Suliman, P.H. Regan, W. Gelletly, S.D. Langdown, J.J. Valiente Dobon, D.Bazzacco, S. Lunardi, C.A. Ur, M. Axiotis, A. Gadea, E.Farnea, M. Ionescu-Bujor, A. Iordachescu, Th. Kroll, T. Martinez, P.G. Bizzetti, R. Broda, N.H. Medina, B. Quintana, B. Rubio	Phys. Rev. C, 71, 034315 (2005)	NPD
166.	Isomeris Decay of 208Ra	J.J. Ressler, C.W. Beasang, H. Ai, H. Amro, M. Babilon, J.A. Caggiano, R.F. Casten, G. Gurdal, A. Heinz, R.O. Hughes, E.A. McCutchan, D.A. Meyer, C. Plettner, J. Qian,M.J.S. Sciacchitano, N.J. Thomas, E. Williams , and N.V. Zamfir	Phys. Rev. C, 71, 014302 (2005)	NPD
167.	Anomalous behavior of the first excited 0+ state in N=Z nuclei	K. Kaneko, R.F. Casten, M. Hasegawa, T. Mizusaki, J.Y. Zhang, E.A. McCutchan, N.V. Zamfir, and R. Kruecken	Phys. Rev. C, 71, 014319 (2005)	NPD
168.	Spin-isospin excitations in the medium-mass nucleus 58Co investigated with the (d,2He) reaction	M. Hagemann, C. Baumer, A. M. van den Berg, D. De Frenne, D. Frekers, V.M. Hannen, M.N. Harakeh, J. Heyse, M.A. de Huu, E. Jacobs, K. Langanke, G. Martinez-Pinedo, A. Negret, L. Popescu, S. Rakers, R. Schmidt and H.J. Wortche	Phys. Rev. C, 71, 014606 (2005)	NPD

169.	Expression for the number of J=0 pairs in even-even Ti isotopes	L. Zamick, A. Escuderos, S.J. Lee, A. L. Mekjan, E. Moya de Guerra, A. A. Raduta, P. Sarriguren	Phys. Rev. C, 71, 024307(2005)	TPD
170.	Determination of Gamow-Teller strength distribution from odd-odd nucleus 50V measured through 50V(d,2He)50Ti and astrophysical implications	C. Baumer, A. M. van den Berg, B. Davids, D. Frekers, D. De Frenne, E.-W. Grewe, P. Haefner, M.N. Harakeh, M. Hunyadi, M.A. de Huu, E. Jacobs, B.C. Junk, A. Korff, K. Langanke, G. Martinez-Pinedo, A. Negret, P. von Neumann-Cosel, L. Popescu, S. Rakers, A. Richter and H. J. Wörtche	Phys. Rev. C, 71, 024603 (2005)	NPD
171.	Bridging the gap between X(5) and the IBA	E.A. McCutchan, N.V. Zamfir, and R.F. Casten	Phys. Rev. C, 71, 034309 (2005)	NPD
172.	Collective excitations in the inner crust of neutron stars: supergiant resonances	E. Khan, N. Sandulescu, Nguyen Van Giai	Phys. Rev. C, 71, 042801R (2005)	TPD
173.	Measurement of the 2H(d,2He)2n reaction at Ed=171 MeV and implications for the neutron-neutron scattering length	C. Baumer, D. Frekers, D. De Frenne, E.-W. Grewe, P. Haefner, S. Hollstein, B.C. Junk, A. Korff, S. Rakers, R. Schmidt, A.M. van den Berg, B. Davids, M.N. Harakeh, M. Hunyadi, M.A. de Huu, H. J. Wörtche, N. Blasi,D. De Frenne, E. Jacobs, A. Negret, L. Popescu, R. De Leo, F. Hofmann, P. von Neumann-Cosel and A. Richter	Phys. Rev. C, 71, 044003, (2005)	NPD
174.	Convergence of particle-hole expansions for the description of nuclear correlations	N. Pillet, N. Sandulescu, Nguyen Van Giai, J.F. Berger	Phys. Rev. C, 71, 044306 (2005)	TPD
175.	Systematics of the alpha decay to vibrational states	S. Peltonen, D.S. Delion, J. Suhonen	Phys. Rev. C, 71, 044315/1-9 (2005)	TPD
176.	Level widths of 14O states studied in the high-resolution 14N(3He,t)14O reaction	A. Negret, T. Adachi, G.P.A. Berg, P. von Brentano, H. Fraiquin, D. De Frenne, H. Fujita, K. Fujita, Y. Fujita, K. Hatanaka, E. Jacobs, K. Nakanishi, L. Popescu, Y. Sakemi, Y. Shimbara, Y. Shimizu, Y. Tameshige, A. Tamii, M. Uchida and M. Yosoi	Phys. Rev. C, 71, 047303 (2005)	NPD
177.	Nuclear pairing: surface or bulk?	N. Sandulescu, P. Schuck, X. Vinias	Phys. Rev. C, 71, 054303 (2005)	TPD
178.	Description of light W, Os, and Pt nuclei in the Interacting Boson Model	E.A. McCutchan and N.V. Zamfir	Phys. Rev. C, 71, 054306 (2005)	NPD
179.	Low-lying GT+ strength in 116In from a (d,2He) reaction experiment and its implications for the 116Cd double beta decay	S. Rakers, C. Baumer, A.M. van den Berg, B. Davids, D. Frekers, D. De Frenne, E.-W. Grewe, P. Haefner, M.N. Harakeh, S. Hollstein, M. Hunyadi, E. Jacobs, B. C. Junk, A. Korff, A. Negret, L. Popescu, and H.J. Wortche	Phys. Rev. C, 71, 054313 (2005)	NPD
180.	Simple Interpretation of Shape Evolution in Pt isotopes without intruder states	E.A. McCutchan, R.F. Casten and N.V. Zamfir	Phys. Rev. C, 71, 061301 (2005)	NPD
181.	First analysis of anisotropic flow with Lee-Yang zeros	N. Bastid, A. Andronic, V. Barret, Z. Basrak, M.L. Benabderrahmane, R. Caplar, E. Cordier, P. Crochet, P. Dupieux, M. Dzelalija, Z. Fodor, I. Gasparic, A. Gobbi, Y. Grishkin, O.N. Hartmann, N. Herrmann, K.D. Hildenbrand, B. Hong, J. Kecskemeti, Y.J. Kim, M. Kirejczyk, P. Koczon, M. Korolija, R. Kotte, T. Kress, A. Lebedev, Y. Leifels, X. Lopez, A. Mangiarotti, V. Manko, M. Merschmeyer, D. Moisa, W. Neubert, D. Pelte, M. Petrovici, F. Rami, W. Reisdorf, A. Schuettauf, Z. Seres, B. Sikora, K.S. Sim, V. Simion, K. Siwek-Wilczynska, M.M. Smolarkiewicz, V. Smolyankin, I.J. Soliwoda, M.R. Stockmeier, G. Stoicea, Z. Tyminski, K. Wisniewski, D. Wohlfarth, Z. Xiao, I. Yushmanov, A. Zhilin, J.Y. Ollitrault, N. Borghini	Phys. Rev. C, 72 (1): 011901 (2005)	NPD
182.	High-energy two-neutron removal from Be-10	N.I. Ashwood, M. Freer, D.J. Millener, N.A. Orr, F. Carstoiu, S. Ahmed, J.C. Angelique, V. Bouchat, W.N. Catford, N.M. Clarke, N. Curtis, F. Hanappe, M. Horoi, Y. Kerckx, J.L. Lecouey, F.M. Marques, T. Materna, G. Normand, S. Pain, N. Soic, C. Timis, A. Unshakova, V.A. Ziman	Phys. Rev. C, 72 (2): 024314 (2005)	TPD

183.	Beta-decay of odd-A Ti-57 and V-59	S.N. Liddick, P.F. Mantica, R. Broda, B.A. Brown, M.P. Carpenter, A.D. Davies, B. Fornal, M. Horoi, R.V.F. Janssens, A.C. Morton, W.F. Mueller, J. Pavan, H. Schatz, A. Stolz, S.L. Tabor, B.E. Tomlin, M. Wiedeking	Phys. Rev. C, 72 (5): 054321 (2005)	TPD
184.	Break-up fragments excitation and the freeze-out volume	A.R. Raduta, E. Bonnet, B. Borderie, N. Le Neindre, M.F. Rivet	Phys. Rev. C, 72 (5): 057603 (2005)	NPD
185.	Isospin transport at Fermi energies	V. Baran, M. Colonna, M. Di Toro, M. Zielinska-Pfabe, H.H. Wolter	Phys. Rev. C, 72 (6): 064620 (2005)	TPD
186.	Self consistent random phase approximation and the restoration of symmetries within the three level Lipkin model	D.S. Delion, P.Schuck, J. Dukelsky	Phys. Rev. C, 72, 064305/1-18 (2005)	TPD
187.	Identification of excited states and shell model description of the N=Z+1 nucleus 91Rh	N. Marginean, C. Rusu, D. Bucurescu, C. Rossi Alvarez, C.A. Ur, D. Bazzacco, S. Lunardi, P. Pavan, G. de Angelis, M. Axiotis, E. Farnea, A. Gadea, M. Ionescu-Bujor, A. Iordachescu, W. Krolas, Th. Kroll, S.M. Lenzi, T. Martinez, R. Menegazzo, D.R. Napoli, B. Quintana, P. Spolaore, Y.H. Zhang, J. Wrzesinski	Phys. Rev. C, 72, 014302 (2005)	NPD
188.	High-spin states in 92-96Zr nuclei	D. Pantelica, I. Gh. Stefan, N. Nica, M.-G. Porquet, G. Duchêne, A. Astier, S. Courtin, I. Deloncle, F. Hoellinger, A. Bauchet, N. Buforn, L. Donadille, O. Dorvaux, J. Duprat, B. J. P. Gall, C. Gautherin, T. Kutsarova, S. Lalkovski, R. Lucas, M. Meyer, A. Minkova, A. Prévost, N. Redon, N. Schulz, H. Sergolle, O. Stézowski, Ts. Venkova, A. Wilson	Phys. Rev. C, 72, 024304-1-17 (2005)	NPD
189.	G factor of the 2+1 state of 160Er	A. Wolf, Z. Berant, N.V. Zamfir, E.A. McCutchan, A. Heinz, R.F. Casten, C. Plettner, N. Pietralla, H. Ai, K. Dusling, D.A. Meyer, J. Qian, J. Vinsen, R. Winkler, D. Swanson, E. Williams, and P.H. Reagan	Phys. Rev. C, 72, 027301 (2005)	NPD
190.	Werner-Wheeler mass tensor for fusionlike configuration	R. A. Gherghescu and D. N. Poenaru	Phys. Rev. C, 72, 027602/1-4 (2005)	TPD
191.	Systematics of nuclear level density parameters	T. von Egidy, D. Bucurescu	Phys. Rev. C, 72, 044311 (2005)	NPD
192.	New short-lived isomers in 84Y	M. Ionescu-Bujor, A. Iordachescu, D. Bucurescu, N. Marginean	Phys. Rev. C, 72, 044313 (2005)	NPD
193.	Octupole correlations in the Sm isotopes	M. Babilon, N.V. Zamfir, D. Kusnezov, E.A. McCutchan, and A. Zilges	Phys. Rev. C, 72, 064302 (2005)	NPD
194.	Correlations between the nuclear level density parameters	D. Bucurescu, T. von Egidy	Phys. Rev. C, 72, 067304 (2005)	NPD
195.	Time sequence and time scale of intermediate mass fragment emission	E.De Filippo, A.Pagano, J.Wilczynski, F.Amorini, A.Anzalone, L.Auditore, V.Baran, I.Berceanu, J.Blicharska, J.Brzychczyk, A.Bonasera, B.Borderie, R.Bougault, M.Bruno, G.Cardella, S.Cavallaro, M.B.Chatterjee, A.Chbihi, J.Cibor, M.Colonna, M.D'Agostino, R.Dayras, M.Di Toro, J.Frankland, E.Galichet, W.Gawlikowicz, E.Geraci, F.Giustolisi, A.Grzeszczuk, P.Guazzoni, D.Guinet, M.Iacono-Manno, S.Kowalski, E.La Guidara, G.Lanzano, G.Lanzalone, N.Le Neindre, S.Li, C.Maiolino, Z.Majka, M.Papa, M.Petrovici, E.Piasecki, S.Pirrone, R.Planeta, G.Politi, A.Pop, F.Porto, M.F.Rivet, E.Rosato, F.Rizzo, S.Russo, P.Russotto, M.Sassi, K.Schmidt, K.Siwek-Wilczynska, I.Skwira, M.L.Sperduto, L.Swiderski, A.Trifiro, M.Trimarchi, G.Vannini, M.Vigilante, J.P.Wieleczko, H.Wu, Z.Xiao, L.Zetta, W.Zipper	Phys. Rev. C, 71, 044602-1-044602-8 (2005)	NPD
196.	Beta decay of 95Ag	S.Harissopulos, J.Doring, M.La Commara, K.Schmidt, C.Mazzocchi, R.Borcea, S.Galanopoulos, M.Gorska, H.Grawe, M.Hellstrom, Z.Janas, R.Kirchner, E.Roeckl, I.P.Johnstone, R.Schwengner, L.D.Skouras	Phys. Rev. C, 72, 024303, (2005)	NPD
197.	Two-proton radioactivity studies with 45Fe and 48Ni	C. Dossat, A. Bey, B. Blank, G. Canchel, A. Fleury, J.Giovinazzo, I.Matea, F.de Oliveira Santos, G.Georgiev, S.Grevy, I.Stefan, J.C.Thomas, N.Adimi, C.Borcea, D.Cortina Gil, M.Caamano, M.Stanoiu, F.Aksouh, B.A.Brown, L.V.Grigorenko	Phys. Rev. C, 72, 054315 (2005)	NPD

198.	Search for neutron excitations across the N = 20 shell gap in 25-29Ne	M.Belleguic, F.Azaiez, Zs.Dombradi, D.Sohler, M.J.Lopez-Jimenez, T.Otsuka, M.G.Saint-Laurent, O.Sorlin, M.Stanoiu, Y.Utsuno, Yu.-E.Penionzhkevich, N.L.Achouri, J.C.Angelique, C.Borcea, C.Bourgeois, J.M.Daugas, F.De Oliveira-Santos, Z.Dlouhy, C.Donzaud, J.Duprat, Z.Elekes, S.Grevy, D.Guillemaud-Mueller, S.Leenhardt, M.Lewitowicz, S.M.Lukyanov, W.Mittig, M.G.Porquet, F.Pougheon, P.Roussel-Chomaz, H.Savajols, Y.Sobolev, C.Stodel, J.Timar	Phys. Rev. C, 72, 054316, (2005)	NPD
199.	Complex shell model representation including antibound states	R.Id Betan, R.J.Liotta, N.Sandulescu, T.Vertse, R.Wys	Phys. Rev. C, 72, 054322, (2005)	TPD
200.	Geometric structures in hadronic cores of extensive air showers observed by KASCADE	T. Antoni, W.D. Apel, F. Badea, K. Bekk, A. Bercuci, J. Blumer, H. Bozdog, I.M. Brancus, A. Chilingarian, K. Daumiller, P. Doll, R. Engel, J. Engler, F. Fessler, H.J. Gils, R. Glasstetter, A. Haungs, D. Heck, J.R. Horandel, K.H. Kampert, H.O. Klages, G.Maier, H.J. Mathes, H.J. Mayer, J. Milke, M. Muller, R. Obenland, J.Oehlschlager, S. Ostapchenko, M. Petcu, H. Rebel, A. Risse, M. Risse, M. Roth, G. Schatz, H. Schieler, J. Scholz, T. Thouw, H. Ulrich, J. van Buren, A. Vardanyan, A. Weindl, J. Wochele, J. Zabierowski	Phys. Rev. D, 71 (7): 072002 (2005)	NPD
201.	On the infrared freezing of perturbative QCD in the Minkowskian region	I. Caprini and J. Fischer	Phys. Rev. D, 71, 094017 (2005)	TPD
202.	Two-dimensional solitons with hidden and explicit vorticity in bimodal cubic-quintic media	A.S. Desyatnikov, D. Mihalache, D. Mazilu, B.A. Malomed, C. Denz, F. Lederer	Phys. Rev. E, 71 (2): 026615 (2), (2005)	TPD
203.	Quasistable two-dimensional solitons with hidden and explicit vorticity in a medium with competing nonlinearities	H. Leblond, B.A. Malomed, D. Mihalache	Phys. Rev. E, 71 (3): 036608 (2005)	TPD
204.	Parametric light bullets supported by quasi-phase-matched quadratically nonlinear crystals	N.C. Panoiu, R.M. Osgood, B.A. Malomed, F. Lederer, D. Mazilu, D. Mihalache	Phys. Rev. E, 71 (3): 036615 (2005)	TPD
205.	Generation, compression, and propagation of pulse trains in the nonlinear Schrodinger equation with distributed coefficients	L.Y. Wang, L. Li, Z. Li, G. Zhou, D. Mihalache	Phys. Rev. E, 72 (3): 036614 (2005)	TPD
206.	Multicolor vortex solitons in two-dimensional photonic lattices	ZY Xu, YV Kartashov, LC Crasovan, D Mihalache, L Torner	Phys. Rev. E, 71 (1): 016616 (2), (2005)	TPD
207.	Gamow-Teller strengths in proton-rich exotic nuclei deduced in the combined analysis of mirror transitions	Y. Fujita, T. Adachi, P. von Brentano, G.P.A. Berg, C. Fransen, D. De Frenne, H. Fujita, K. Fujita, K. Hatanaka, E. Jacobs, K. Nakanishi,A. Negret, N. Pietralla, L. Popescu, B. Rubio, Y. Sakemi, Y. Shimbara, Y. Shimizu, Y. Tameshige, A. Tamii, M. Yosoi, and K.O. Zell	Phys. Rev. Lett. , 95, 212501 (2005)	NPD
208.	First nuclear moment measurement with radioactive beams by the recoil-in-vacuum technique: the g factor of the 2(1)(+) state in Te-132	N.J. Stone, A.E. Stuchbery, M. Danchev, J. Pavan, C.L. Timlin, C. Baktash, C.J. Barton, J. Beene, N.Benczer-Koller, C.R. Bingham, J. Dupak, A. Galindo-Uribarri, C.J. Gross, G. Kumbartzki, D.C. Radford, J.R. Stone, and N.V. Zamfir	Phys. Rev. Lett., 94 (19): 192501 (2005)	NPD
209.	Stable spatiotemporal solitons in Bessel optical lattices	D. Mihalache, D. Mazilu, F. Lederer, B.A. Malomed, Y.V. Kartashov, L.C. Crasovan, L. Torner	Phys. Rev. Lett., 95 (2): 023902 (2005)	TPD
210.	Ni-68 (28)40: Magicity versus superfluidity	O. Sorlin, S. Leenhardt, C. Donzaud, J. Duprat, F. Azaiez, F. Nowacki, H. Grawe, Z. Dombradi, F. Amorini, A. Astier, D. Baiborodin, M. Belleguic, C. Borcea, C. Bourgeois, D.M. Cullen, Z. Dlouhy, E. Dragulescu, M. Gorska, S. Grevy, D. Guillemaud-	Phys. Rev. Lett., 88 (9), (2005) 092501	NPD

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211.	Use of electron correlation to make attosecond measurements without attosecond pulses	O.Smirnova, V.S. Yakovlev, M. Ivanov	Phys. Rev. Lett., 94 (21): 213001 (2005)	RPC
212.	Measurement of the Kaonic Hydrogen X-Ray Spectrum	G.Beer, A.Bragadireanu, M.Cargnelli, C.Curceanu (Petrascu), J.Egger, H.Fuhrman, C.Guaraldo, M.Iliescu, T.Ishiwatari, K.Itakashi, M.Iwasaki, P.Kienle, T.Koike, B.Lauss, V.Lucherini, L.Ludhova, J.Marton, F.Mulhauser, T.Ponta, L.Schaller, R.Seki, D.Sirghi, F.Sirghi and J.Zmeskal	Phys. Rev. Lett., 94, 212302 (2005)	PPD
213.	Reversing the training effect in exchange biased CoO/Co bilayers	S. Brems, D. Buntinx, K. Temst, C. Van Haesendonck, F. Radu, H. Zabel	Phys. Rev. Lett., 95 (15): 157202 (2005)	NPD
214.	Search for a strongly decaying neutral charmed pentaquark	FOCUS Collaboration (J.M. Link, ..,D.Pantea, .., et al.)	Phys.Lett. B, 622:229-238, (2005)	PPD
215.	Measurements of the Q**2 dependence of the D0 ---> K- MU+ NU and D0 ---> PI- MU+ NU form factors	FOCUS Collaboration (J.M. Link, ..,D.Pantea, .., et al.)	Phys.Lett.B, 607:233-242, (2005)	PPD
216.	Measurement of the branching ratio of the decay D0 ---> PI- MU+ NU relative to D0 ---> K- MU+ NU.	FOCUS Collaboration (J.M. Link, ..,D.Pantea, .., et al.)	Phys.Lett.B, 607:51-58, (2005)	PPD
217.	A study of D0 ---> K0(S) K0(S) X decay channels	FOCUS Collaboration (J.M. Link, ..,D.Pantea, .., et al.)	Phys.Lett.B, 607:59-66, (2005)	PPD
218.	Analysis of the semileptonic decay D0 ---> ANTI-K0 PI- MU+ NU	FOCUS Collaboration (J.M. Link, ..,D.Pantea, .., et al.)	Phys.Lett.B, 607:67-77, (2005)	PPD
219.	Study of the D0 ---> K+ K- PI+ PI-.	FOCUS Collaboration (J.M. Link, ..,D.Pantea, .., et al.)	Phys.Lett.B, 610:225-234, (2005)	PPD
220.	Measurement of the doubly cabibbo suppressed decay D0 ---> K+ PI- and a search for charm mixing	FOCUS Collaboration (J.M. Link, ..,D.Pantea, .., et al.)	Phys.Lett.B, 618:23-33, (2005)	PPD
221.	Hadronic mass spectrum analysis of D+ ---> K- PI+ MU+ NU decay and measurement of the K*(892)0 mass and width	FOCUS Collaboration (J.M. Link, ..,D.Pantea, .., et al.)	Phys.Lett.B, 621:72-80, (2005)	PPD
222.	Search for T Violation in Charm Meson Decays	FOCUS Collaboration (J.M. Link, .., D.Pantea, .., et al.)	Phys.Lett.B, 622:239-248, (2005)	PPD
223.	Search for lambda+(C) ---> P K+ PI- and D+(S) ---> K+ K+ PI- using genetic programming event selection.	FOCUS Collaboration (J.M. Link, ..,D.Pantea, .., et al.)	Phys.Lett.B, 624:166-172, (2005)	PPD
224.	Study of lambda+(C) cabibbo favored decays containing a lambda baryon in the final state	FOCUS Collaboration (J.M. Link, .., D.Pantea, .., et al.)	Phys.Lett.B, 624:22-30, (2005)	PPD
225.	First observation of 54Zn and its decay by two-proton emission	B.Blank, A.Bey, G.Canchel, C.Dossat, A.Fleury, J.Giovinazzo, I.Matea, N.Adimi, F.De Oliveira, I.Stefan, G.Georgiev, S.Grevy, J.C.Thomas, C.Borcea, D.Cortina, M.Caamano, M.Stanoiu, F.Aksouh, B.A.Brown, F.C.Barker, W.A.Richter	Phys.Rev.Lett., 94, 232501, (2005)	NPD
226.	A measurement of the D+(S) lifetime	FOCUS Collaboration (J.M. Link, .., D.Pantea, .., et al.)	Phys.Rev.Lett., 95:052003, (2005)	PPD

227.	Limits and degeneracies of discrete Painleve equations: a sequel	A. Ramani, R. Willox, B. Grammaticos, A. S. Carstea, J. Satsuma	Physica A, 347, 1-16, (2005)	TPD
228.	Ferromagnetism in orbitally degenerate Hubbard model	S. Cojocaru, R. Citro and M. Marinaro	Physica B, 359-361C, 678-680 (2005)	TPD
229.	Renormalization of the electron-phonon interaction in the Hubbard model	R. Citro, S. Cojocaru and M. Marinaro	Physica B, 359-361C, 696-698 (2005)	TPD
230.	Two-dimensional fluid approach to the dc magnetron discharge	C. Costin, L. Marques, G. Popa, G. Gousset	Plasma Sources Science & Technology, 14 (1): 168-176 (2005)	NPD
231.	Detection methods for cereal grains treated with low and high-energy electrons	M. Cutrubinis, H. Delincée, M. Stahl, O. Röder, H. J. Schaller	Radiation Physics and Chemistry, 72(5):639-644, 2005	IRASM
232.	14C and tritium dynamics in wild mammals: a metabolic model	D. Galeriu, N.A. Beresford, A. Melintescu, N.M.J. Crout, H. Takeda	Radioprotection, Suppl. 1, 40, S351-S357 (2005)	LEPD
233.	Comprehensive risk assessment for rail transportation of dangerous goods: a validated platform for decision support.	A. Gheorghe, J. Birchmeier, D. Vamanu, I. Papazoglou, W. Kroeger.	Reliability Engineering & System Safety, Elsevier, 88, 247-272, (2005)	LEPD
234.	Lower Spectral Branches for a particle coupled to a Bose field	N. Angelescu, R. A. Minlos and V. A. Zagrebnov	Rev. Math. Phys. 17, 1111 (2005)	TPD
235.	Comparison of measured and simulated lateral distributions for electrons and muons with KASCADE	W.D. Apel et al. (The KASCADE Collaboration)	Submited to Astropart.Phys. (2005)	ANPD
236.	Semiclassical description of a sixth order quadrupole boson Hamiltonian	A. A. Raduta, A. D. Aaron and I. I. Ursu	Submitted to Nucl. Phys. A.	TPD
237.	Influence of helium-dielectric barrier discharge treatments on the adhesion properties of polyamide-6 surfaces	G. Borcia, N. Dumitrascu, G. Popa	Surface & CoatingsTechnology, 197 (2-3): 316-321, (2005)	NPD
238.	Comparison of the operating characteristics of an opposed target magnetron using ferromagnetic and non-ferromagnetic targets	T. Moiseev, D.C. Cameron	Surface & CoatingsTechnology, 200 (1-4): 644-648, (2005)	LEPD
239.	Dirac-type operators on curved spaces and the role of the Killing-Yano tensors	M. Visinescu	Theor. Math. Phys. 144, 1054-1052 (2005)	TPD
240.	Statistical approach to modulational instability in nonlinear discrete systems	D. Grecu, A. Visinescu	Theor. Math. Phys., 144 (1): 927-934, (2005)	TPD
241.	Structural stability of indium oxide films deposited by spray pyrolysis during thermal annealing	G. Korotcenkov, V. Brinzari, M. Ivanov, A. Cerneavschi, J. Rodriguez, A. Cirera, A. Cornet, J. Morante	Thin Solid Films Mater, 479 (1-2): 38-51, (2005)	RPC
242.	Experimental results for change of H and Li ions stopping in metal foils with temperature	B. Pawlowski, M. Petrascu, J. Czerbniak, D. Pantelica, M. Moneta	Vacuum 78,439-444 , (2005)	NPD

B) Articles in non-ISI journals

1.	Dynamics of amino GI-Glycine molecule in triglycine sulphate by incoherent quasielastic neutron scattering	V. Tripadus, A. Radulescu, A. Buchsteiner, S. Janssen, D. Aranghel, C. Simion	Accepted for publication Rom. Journ. Phys., (2005)	NPD
2.	Redundancy and coverage problems in sensor networks	B. Carbunar, A. Grama, J. Vitek, O. Carbunar	ACM Transaction in Sensor Networks (TOSN)	ITCD
3.	Air Pollution and Vegetation	H. Harmens, G. Milles, F. Hyes, Williams, L. De Temmerman and the participants of the ICP Vegetation. Working Group on Effects of the UNECE Convention on Long-range Transboundary Air Pollution-31 de tari participante A. Lucaciu (chief investigator)- participant	Air Pollution and Vegetation - UNECE ICP – Vegetation- Annual Report 2003-2004- Vegetation United Nations Economic Commission for Europe International Cooperative Programme on Effects of Air Pollution on Natural Vegetation and Crops, Centre for Ecology and Hydrology.ICP Vegetation Coordination Centre, Centre for Ecology & Hydrology Natural Environment Research Council, Bangor, UK, July, (2005)	LEPD
4.	Dirac particles on curved spaces and quantum anomalies for generalized Taub-NUT metrics	M. Visinescu	Annals of the Univ.Craiova, 15, 45-49 (2005)	TPD
5.	Modulational instability and soliton generation in nonlinear evolution equations	D. Grecu, A. Visinescu, A. S. Carstea, A. T. Grecu	Annals of the University of Craiova, 15, 111-122, (2005)	TPD
6.	Modulational instability of derivative non-linear schrődinger equation	A.T. Grecu	Annals of Univ. Craiova, 15, 177-183 (2005)	TPD
7.	Production and chemical separation of 68-Ge	Z. Szucs, D. Dudu, C. Cimpeanu, A. Luca, E. Duta, M. Sahagia,	Annual Report of Institute of Nuclear Research of the Hungarian Academy of Sciences Debrecen, Hungary, in press (2005)	RPC
8.	Search for spontaneous muon emission from lead nuclei	L. Arrabito, D. Autiero, E. Barbuto, C. Bozza, S. Cecchini, L. Consiglio, M. Cozzi, N. D'Ambrosio, Y. Declais, G. De Lellis, G. De Rosa, M. De Serio, D. Di Ferdinando, A. Di Giovanni, N. Di Marco, L.S. Esposito, G. Giacomelli, M. Giorgini, G. Grella, M. Hauger, M. Ieva, D.B. Ion, I. Janicsko, F. Juget, I. Laktineh, G. Mandrioli, S. Manzoor, A. Margiotta, Migliozzi, Monacelli, M.T. Muciaccia, L. Patrizii, C. Pistillo, V. Popa, G. Romano, G. Rosa, Royole-Degieux, S. Simone, M. Sioli, C. Sirignano, G. Sirri, G. Sorrentino, M. Spurio, V. Tioukov	ArXiv hep-exp/0506078, (2005)	TPD
9.	Investigating the 2nd Knee: The KASCADE-GRANDE experiment	Andreas Haungs, W.D. Apel, F. Badea, K. Bekk, A. Bercuci, M. Bertaina, J. Blumer, H. Bozdog, I.M. Brancus, M. Bruggemann, P. Buchholz, A. Chiavassa, K. Daumiller, F. Di Pierro, P. Doll, R. Engel, J. Engler, P.L. Ghia, H.J. Gils, R. Glasstetter, C. Grupen, D. Heck, J.R. Horandel, K.-H. Kampert, H.O. Klages, Y. Kolotaev, G. Maier, H.J. Mathes, H.J. Mayer, J. Milke, B. Mitrica, C. Morello, M. Muller, G. Navarra, R. Obenland, J. Oehlschlager, S. Ostapchenko, S. Over, M. Petcu, T. Pierog, S. Plewnia, H. Rebel, A. Risse, M. Roth, H. Schieler, O. Sima, M. Stumpert, G. Toma, G.C. Trinchero, H. Ulrich, S. Valchierotti, J. van Buren, W. Walkowiak, A. Weindl, J. Wochele, J. Zabierowski, S Zagromski, D. Zimmermann	astro-ph/0508286	NPD
10.	A FADC-based data acquisition system for the KASCADE-GRANDE experiment	Wolfgang Walkowiak, T. Antoni, W.D. Apel, F. Badea, K. Bekk, A. Bercuci, M. Bertaina, J. Blumer, H. Bozdog, I.M. Brancus, M. Bruggemann, P. Buchholz, C. Buttner, A. Chiavassa, K. Daumiller, F. di Pierro, P. Doll, R. Engel, J. Engler, F. Fessler, P.L. Ghia, H.J. Gils, R. Glasstetter, A. Haungs, D. Heck, J.R. Horandel, K.-H. Kampert, H.O. Klages, Y. Kolotaev, G. Maier, H.J. Mathes, H.J. Mayer, J. Milke, B. Mitrica, C. Morello, M. Muller, G. Navarra, R. Obenland, J. Oehlschlager, S. Ostapchenko, S. Over, M. Petcu, S. Plewnia, H. Rebel, A. Risse, M. Roth, H. Schieler, J. Scholz, M. Stumpert, T. Thouw, G. Toma, G.C. Trinchero, H. Ulrich, S. Valchierotti, J. van Buren, A. Weindl, J. Wochele, J. Zabierowski, S. Azgromski, D. Zimmermann	astro-ph/0509335	NPD

11.	Combined lopes and KASCADE-GRANDE data analysis	Andreas Haungs, W.D. Apel, F. Badea, L. Bahren, K. Bekk, A. Bercuci, M. Bertaina, P.L. Biermann, J. Blumer, H. Bozdog, I.M. Brancus, M. Bruggemann, P. Buchholz, S. Buitink, H. Butcher, A. Chiavassa, K. Daumiller, A.G. De Bruyn, C.M. De Vos, F. Di Pierro, P. Doll, R. Engel, H. Falcke, H. Gemmeke, P.L. Ghia, R. Glasstetter, C. Grupen, D. Heck, J.R. Horandel, A. Horneffer, T. Huege, K.-H. Kampert, G.W. Kant, U. Klein, Y. Kolotaev, Y. Koopman, O. Kromer, J. Kuijpers, S. Lafebre, G. Maier, H.J. Mathes, H.J. Mayer, J. Milke, B. Mitrica, C. Morello, G. Navarra, S. Nehls, A. Nigl, R. Obenland, J. Oehlschlager, S. Ostapchenko, S. Over, H.J. Pepping, M. Petcu, J. Petrovic, T. Pierog, S. Plewnia, H. Rebel, A. Risse, M. Roth, H. Schieler, G. Schoonderbeek, O. Sima, M. Stumpert, G. Toma, G.C. Trinchero, H. Ulrich, J. Van Buren, W. Van Capellen, W. Walkowiak, A. Weindl, S. Wijnholds, J. Wochele, J. Zabierowski, J.A. Zensus, D. Zimmermann	astro-ph/0510352	NPD
12.	Absolute calibration of the lopes antenna system	S. Nehls, W.D. Apel, F. Badea, L. Bahren, K. Bekk, A. Bercuci, M. Bertaina, P.L. Biermann, J. Blumer, H. Bozdog, I.M. Brancus, M. Bruggemann, P. Buchholz, S. Buitink, A. Chiavassa, K. Daumiller, A.G. De Bruyn, C.M. De Vos, P. Doll, R. Engel, H. Falcke, H. Gemmeke, P.L. Ghia, R. Glasstetter, C. Grupen, A. Hakenjos, Andreas Haungs, D. Heck, J.R. Horandel, A. Horneffer, T. Huege, K.-H. Kampert, G..W. Kant, U. Klein, Y. Kolotaev, Y. Koopman, O. Kromer, J. Kuijpers, S. Lafebre, G. Maier, H.J. Mathes, H.J. Mayer, J. Milke, B. Mitrica, C. Morello, G. Navarra, A. Nigl, R. Obenland, J. Oehlschlager, S. Ostapchenko, S. Over, H.J. Pepping, M. Petcu, J. Petrovic, T. Pierog, S. Plewnia, H. Rebel, A. Risse, M. Roth, H. Schieler, G. Schoonderbeek, O. Sima, M. Stumpert, G. Toma, G.C. Trinchero, H. Ulrich, J. van Buren, W. Van Capellen, W. Walkowiak, A. Weindl, S. Wijnholds, J. Wochele, J. Zabierowski, J.A. Zensus, D. Zimmermann	astro-ph/0510353	NPD
13.	American and Romanian student approaches to solving simple electric and magnetic problems	G. J. Aubrecht and C. Raduta	Aurco J. 11, (51-65), (2005)	TPD
14.	Molecular alterations associated with burn injury	F. Despa, D. Orgill, J. Newalder and R.C. Lee	Burns 31, 568-577 (2005)	TPD
15.	M-theory compactifications on manifolds with G (2) structure	T. House, A. Micu	Classical Quant.Grav. Phys, 22 (9): 1709-1738, (2005)	PPD
16.	RODOS, a European decision support system for nuclear emergencies, adapted to Romanian conditions (in Romanian)	D. Slavnicu, D.Galeriu, D.Gheorghiu, A.Gheorghiu, Gh. Mateescu	Energia Nucleara, 17, 1-2, 29-31 (2005)	LEPD
17.	Principle of minimum complexity as a new principle in hadronic scattering	D.B. Ion and M.L.D. Ion	e-Print Archive: hep-ph/0512353	TPD
18.	Dirac operators on Kahlerian manifolds	I. I. Cotaescu, M. Visinescu	Facta Univesitatis, Nis, Serbia, 3, ...-... (2005) (in press)	TPD
19.	Endurance test for SCK-CEN mixed packing, proposed for water detritiation system at JET	Gh. Ionita, A. Bornea, I. Popescu, I. Stefanescu, N. Bidica, C. Varlam, C. Postolache, L. Matei	Fusion Science and Technology, 48, 1, 112-115 (2005)	RPC
20.	Energy metabolism and human dosimetry of tritium	D. Galeriu, H Takeda, A. Melintescu, A Trivedi	Fusion Science and Technology, 48, 1, 795-798, (2005)	LEPD
21.	Optimal parameter determination for tritiated water storage in polyacrylic networks	C. Postolache, L. Matei, R. Georgescu, Gh. Ionita	Fusion Technol., 48, 1, 220-223 (2005)	RPC
22.	Behavior of hydrofobic isotopic exchange catalysts in the presence of tritiated water	C. Postolache, L. Matei, Gh. Ionita	Fusion Technol., 48, 1, 688-691 (2005)	RPC
23.	Calibration of tritium monitors using saturated vapour of tritiated water	E.L.Grigorescu, A.C.Razdolescu, M.Sahagia, Cassette,	Fusion Technol., 48, 1 382 – 385, (2005)	RPC
24.	The dynamic of tritium- including OBT- in the aquatic food chain	D. Galeriu, R. Heling and A. Melintescu	Fusion Technol., 48, 1, 779-782	LEPD
25.	Portable intelligent tritium in air monitor	L.Purghel, R.C.Calin, D.Bartos	Fusion Technol.; Internat Journal of the American Nuclear Society	RMTD D

26.	Massive gravity as a quantum gauge theory	D. R. Grigore, G. Scharf	General Relativity and Gravitation 37, 1075	TPD
27.	Detection of maize treated with low and high-energy electrons	M. Cutrubinis, H. Delincée, M. Stahl, O. Röder, H. J. Schaller	Gesunde Pflanzen, 57:129-136, (2005)	IRASM
28.	Development of a test-setup for ALICE TRD-PASA	H.K Soltveit, V. Catanescu, J. Stachel	GSI Scientific Report, 247, GSI 2005-1, (2005)	ANPD
29.	Physics Performance Report, II	ALICE - Collaboration	http://alice.web.cern.ch/Alice/ppr/web/PPRVIIforCollaboration.html	NPD
30.	On the vulnerability of critical infrastructures: seeing it coming	A. Gheorghe, D. Vamanu	Int. J. Critical Infrastructures, 1, 2/3, 216-247, (2005)	LEPD
31.	Reading vulnerability in phase portraits: an exercise in probabilistic resilience assessment.	A. Gheorghe, D. Vamanu	Int. J. Critical Infrastructures, 1, 4, 312-330, (2005)	LEPD
32.	Risks in business design for critical infrastructures: the 'DASHBOARD' concept	A. Gheorghe, D. Vamanu	Int. J. Critical Infrstructures	LEPD
33.	A three-step algorithm for solving 2D inverse magnetostatic problems for magnetron design applications	T. Moiseev, D.C. Cameron	Inverse Problems Eng., 13 (3): 279-297, (2005)	LEPD
34.	Charged particle multiplicity in Pb - Pb collisions from the NA50 experiment.	C. Alexa, F.Prino,V.Boldea, S. Dita et al., NA50 Collaboration	J. Phys. Conf. Ser. 5, 86-96	PPD
35.	On distributions with isolated points and a condensation phenomenon	M. Apostol	J. Theor. Phys. 100, (2005)	TPD
36.	"Equivalent circuits" for pulse-operating thermoelements	M. Apostol and L. C. Cune	J. Theor. Phys. 101, (2005)	TPD
37.	Short-term seismic activity. Next-earthquake time-magnitude distributions	B.-F. Apostol, L. C. Cune and M. Apostol	J. Theor. Phys. 110, (2005)	TPD
38.	Scaling and universal power laws	B.-F. Apostol, L. C. Cune and M. Apostol	J. Theor. Phys. 111 (2005)	TPD
39.	Scaling and universal temporal distributions of nearest-neighbours pairs of earthquakes	B.-F. Apostol, L. C. Cune and M. Apostol	J. Theor. Phys. 112 (2005)	TPD
40.	"Rule 30" and its equation	M. Apostol	J. Theor. Phys. 113, (2005)	TPD
41.	Kepler's problem	M. Apostol	J. Theor. Phys. 114, (2005)	TPD
42.	A three-body problem: the Sun, the Earth and the Moon	M. Apostol	J. Theor. Phys. 115, (2005)	TPD
43.	A peculiar motion in Coulomb potential and a new route of quantizing the Hydrogen atom	M. Apostol	J. Theor. Phys. 116, (2005)	TPD
44.	Moon's problem. A three-body problem Moon's problem. A three-body problem (Lecture five of the Course of Theoretical Physics)	M. Apostol	J. Theor. Phys. 117, (2005)	TPD
45.	Theory of perturbation for a three-body gravitational bound state	M. Apostol	J. Theor. Phys. 118, (2005)	TPD
46.	Scaling and universal power laws in time series of seismic events	B. F. Apostol, M. Apostol and L. C. Cune	J. Theor. Phys. 119 (2005)	TPD
47.	Moon's Problem (A three-body problem). An Investigation into "Intractability" and "Uncomputability" in Theoretical Physics	M. Apostol	J. Theor. Phys. 120, (2005)	TPD
48.	Principles of earthquake forecasting. Short-term prediction. Application to Vrancea	B.-F. Apostol, L. C. Cune and M. Apostol	J. Theor. Phys. 121, (2005)	TPD
49.	Science and computations science and computations (Lecture three of the Course of Theoretical Physics)	M. Apostol	J. Theor. Phys. 97 (2005)	TPD
50.	On probabilities (Lecture four of the Course of Theoretical Physics)	M. Apostol	J. Theor. Phys. 98, (2005)	TPD
51.	Power-law distributions and avalanche phenomena	M. Apostol	J. Theor. Phys. 99, (2005)	TPD
52.	Pulsed dc operation of a Penning-type opposed target magnetron	T. Moiseev, D.C. Cameron	J. Vac. Sci. Technol. A, 23 (1): 66-71, (2005)	LEPD
53.	The effect of highly ionising particles on the CMS siliconstrip Tracker	M.Puscalau and CMS Tracker Italia group	NIM A543	LEPD
54.	Nuclear Data Sheets for A=252	N. Nica	Nuclear Data Sheets, 106 (4): 813, (2005)	NPD
55.	Retrospective review and future prospects of Russian-Romanian studies in life sciences using INAA at IBR-2 reactor in Dubna	M. Frontasyeva, O. Culicov, L. Dinescu, A. Pantelica and R. Mocanu	Ovidius University Annals of Chemistry, 16, 1: 76-80, (2005)	NPD

56.	Thirty-year experience in applying neutron activation for analysis of mineral and biological samples from the Romanian sector of the Danube River and the Black Sea	A.I. Pantelica, M.N. Salagean and I.I. Georgescu	Ovidius University Annals of Chemistry, 16, 1: 89-96, (2005)	NPD
57.	Kontrollierte Dotierung von Al:ZnO-Schichten durch PLD mit zwei Lasern und zwei Targets	M. Kompitsas, A. Giannoudakos, E. György, I. N. Mihailescu, J. Santiso, D. Pantelica	Photonik 37, 58-61, (2005)	NPD
58.	Reaction dynamics with exotic nuclei	V. Baran, M. Colonna, V. Greco, M. Di Toro	Physics Reports, 410 (5-6), 335-466 (2005)	TPD
59.	Fermi Pseudopotential and Borromean halo nuclei	C. Hategan, R.A. Ionescu	Proceedings of the Romanian Academy A6, 137 (2005)	NPD
60.	Test case of the long term preliminary performance assessment for the L&IL radioactive waste repository Baita Bihor, Romania	D. Ene	Radiat. Prot. Dosim., 115 (1-4): 433-436, 1 S, SI (2005)	NPD
61.	Micellar effect on tyrosine one-electron oxidation by azide radicals	A. Ionescu, D. Grand, C. Sicard-Roselli, C. Houée-Levin	Radiation Physics and Chemistry, 75, 497-506, (2005)	LEPD
62.	A versatile model for tritium transfer from atmosphere to plant and soil	A. Melintescu, D. Galeriu	Radioprotection, Suppl. 1, 40, S437-S442, (2005)	LEPD
63.	14C and tritium dynamics in wild mammals: a metabolic model	D. Galeriu, N.A. Beresford, A. Melintescu, N.M.J. Crout, H. Takeda	Radioprotection, Suppl. 1, 40, 351-357, (2005)	LEPD
64.	Bee's pollen moisture determination by halogen lamp infrared drying method	I. Gergen, F. Radu, M. Poiana	Rev. Chim., 56 (1): 54-56, (2005)	NPD
65.	Fluorescence resonance energy transfer and light scattering study of irreversible DNA conformational changes in the presence of a terbium chelate	N. Ilie, V. Fugaru, D. Baconi, D. Balalau, R. Boscencu	Rev. Chim., 56 (4): 355-358, (2005)	RPC
66.	Production and chemical separation of radioisotope 22 Na used for obtaining a 22 NaCl positron source (in Romanian)	C. Cîmpeanu, L. Crăciun, D. Dudu, M. Racolța, I. Mihalcea	Rev. Chim., 56 (5) 499-501, (2005)	RPC
67.	The changes of different types of phosphorus in bread by addition of germinated cereals flour	M.A. Poiana, I. Gergen, F. Radu, E. Alexa, A. Rivis	Rev. Chim., 56 (5): 511-514, (2005)	NPD
68.	Studies regarding the primary biodegradation of the alkaline metal abietic acid salts by means of a spectrophotometric method	F. Radu, A.X. Lupea, A. Borozan, S. Cacig	Rev. Chim., 56 (5): 559-563, (2005)	NPD
69.	Method for obtaining a 48V standard source for PET scans (in Romanian)	C. Cimpeanu, D. Dorin, Z. Szucs, Murgoci, I. Mihalcea	Rev. Chim., 56 (6) 628-631, (2005)	RPC
70.	Study on the influence of external fields on the liquid crystal properties of the lauric acid (in Romanian)	E. Slavnicu, M. Ghelmez, D. Slavnicu, A. Sterian, R. Trascu	Rev. Chim., 56, 10, 1024-1025 (2005)	LEPD
71.	Studies in laser field of some irradiated fatty acids in liquid crystal state	M. Ghelmez, E. Slavnicu, D. Slavnicu, C. Toma	Rev. Chim., 56, 7, 762-765, (2005)	LEPD
72.	Lauric acid response to the action of an external electric field (in Romanian)	E. Slavnicu, M.Ghelmez, D. Slavnicu, C. Papuc	Rev. Chim., 56, 9, 931-933, (2005)	LEPD
73.	Atomic force microscopy studies of Langmuir-Blodgett films. 2 Phase behavior of stearic acid monolayers	M. Tomoaia-Cotisel, G. Tomoaia, V.D. Pop, A. Mocanu, N. Apetroaei, G. Popa	Rev. Roum. Chim., 50 (5): 381-390, (2005)	NPD
74.	Atomic force microscopy studies of Langmuir-Blodgett films. 3 Phase behavior of dipalmitoyl phosphatidyl choline monolayers	M. Tomoaia-Cotisel, G. Tomoaia, V.D. Pop, A. Mocanu, O. Cozar, N. Apetroaei, G. Popa	Rev. Roum. Chim., 50 (6): 471-478, (2005)	NPD
75.	Conductimetric method applied to ternary lysozyme-NH4Cl-water solution	D. Buzatu, E. Petrescu, C. Popa and F.D. Buzatu	Rev. Roum. Chim., 50(3), 193-199 (2005)	TPD
76.	Spectroscopic imaging diagnostics for burning plasma experiments	D. Stutman, M. Finkenthal, G. Suliman, K. Tritz, L. Delgado-Aparicio, R. Kaita, D. Johnson, V. Soukhanovskii, M.J. May	Rev. Sci. Instrum. , 76 (2): 023505, (2005)	NPD
77.	Conductivity and viscosity measurements for binary lysozyme chloride aqueous solution and ternary lysozyme-salt-water solution	D. Buzatu, E. Petrescu, C. Popa, F.D. Buzatu	Rev.Chim. 56, 61-65, (2005)	TPD
78.	Importance of the of total serum homocysteine evaluation in patients with induced hypothyroidism (in Romanian)	M. Purice, F. Alexiu, V. Lungu, M. Giurcaneanu, Museteanu and L. Dumitriu	Revista Romana de Medicina de Laborator, 1, 1, 27-32, (2005)	RPC

79.	A holomorphic representation of Lie algebras semidirect sum of semisimple and Heisenberg algebras	S. Berceanu	Rom. J. Phys. 50, 73-84 (2005)	TPD
80.	Methods of radiological characterization areas of influence the warehouses of radioactive wastes historical	C. Gârlea, M. R. Calin, A. Petre, I. Gârlea, C. Kelerman	Rom. Jour. of Phys., 5-6/2006 (in press)	LEPD
81.	Results obtained by the radionuclide metrology Laboratory of IFIN-HH in International Comparisons, during the period 2002-2004	M. Sahagia, A.C. Razdolescu, E.L. Grigorescu, A. Luca, C. Ivan	Rom. Jour. Phys., 51, 1-2 19-23 (2005)	RPC
82.	Towards a self-consistent cluster emission theory	D.S. Delion, A. Sandulescu, W. Greiner	Rom. Journ. Phys. 50, 165-176, (2005)	TPD
83.	Exotic resonant states corresponding to poles situated at the attractors in the k-plane	N. Grama, C. Grama, I. Zamfirescu	Rom. Journ. Phys. 50, 177-185, (2005)	TPD
84.	Solitary waves in a 2-D « zig-zag » model of coupled chains: Acoustical sector	A. Visinescu, D. Grecu	Rom. Journ. Phys. 50, 365-375 (2005)	TPD
85.	Omnes representation with inelastic effects for hadronic form factors	I. Caprini	Rom. Journ. Phys. 50, 7 (2005)	TPD
86.	Neck influence on binary configuration shell effects	R.A. Gherghescu	Rom. Journ. Phys. 50, 889-903, (2005)	TPD
87.	Decoherence in open quantum systems	A. Isar	Rom. Journ. Phys., 50, 1-2, 147-156 (2005)	TPD
88.	Microscopic model for the nuclear inertia tensor	D. N. Poenaru, R. A. Gherghescu, and W. Greiner	Rom. Journ. Phys., 50, 187-199 (2005)	TPD
89.	Relativistic bound state wave functions	L. Micu	Rom. Journ. Phys., 50, 309-315	TPD
90.	Another method for a global fit of the Cabibbo-Kobayahi-Maskawa matrix	Dita	Rom. Journ. Phys., 50, 3-4, 279-287 (2005)	TPD
91.	Deformation effects in two-center shell model	R. A. Gherghescu, D. N. Poenaru, and W. Greiner	Rom. Journ. Phys., 50, 377-385 (2005)	TPD
92.	Investigation of the effect produced by the effective mass and the dissipation on the fission cross-section	M. Mirea and S. Stoica	Rom. Journ. Phys., 50, 517-531 (2005)	NPD
93.	An analytic description of spins effects in hadron-hadron scattering via PMD-SQS-optimum principle.	D. B. Ion and M. L. D. Ion and A. I. Sandru	Rom. Journ. Phys., 50, 5-6, 533-543, (2005)	TPD
94.	Super-Cerenkov radiation: Toward a new phenomenon produced by charged particles in refractive media	D. B. Ion and M. L. D. Ion	Rom. Journ. Phys., 50, 9-10, 947-956	TPD
95.	Comparative measurements of Ni-63, Cs-137 and Am-241	A.C. Razdolescu, M. Sahagia, E.L. Grigorescu	Rom. Journ. Phys., 50, 9-10, 957-962, (2005)	RPC
96.	Multielemental analysis of steels via atomic and nuclear methods	A. Ene, I.V. Popescu, T. Badica	Rom. Journ. Phys., 50, 963, (2005)	NPD
97.	Determination of Manganese in steels using proton-induced nuclear reactions	A. Ene, I.V.Popescu, T.Badica	Rom. Journ.Phys, 50, 7-8, 697-684, (2005)	NPD
98.	Inductively Coupled Plasma (ICP) and Total Dissolved Solids (TDS) measurements of surface waters from Ialomita river	C.Stihi, I.V. Popescu, A. Bancuta, V. Stihi, Gh. Valicu	Rom. Journ.Phys., 50, 9-10, 977-981, (2005)	NPD
99.	Detector characterization for efficiency calibration in different measurement geometries	M. Toma, L. Dinescu, O. Sima	Rom. Re Phys, 57, 3, 329-333	DMDR
100.	Some considerations on X-Ray Fluorescence use in museum measurements – the case of medieval silver coins	B. Constantinescu, R. Bugoi, E. Oberlaender – Tarnoveanu, K. Parvan	Rom. Re Phys., 57, 4, 1015-1025 (2005)	NPD, ANPD
101.	Bel-Robinson tensor for the Bianchi type I Universe	B. Saha, V. Rikhvitsky, M.Visinescu	Rom. Re Phys., 57, 518-530 (2005)	TPD
102.	Proton radioactivity in light rare-earth deformed nuclei	M. Ivascu, I. Cata-Danil, D. Bucurescu, G. Cata-Danil, L. Stroe, F. Soramel, C. Signorini, A. Gugleiemtti, R. Bonetti	Rom. Rep. Phys. 57, 671, (2005)	NPD
103.	Nuclear deformation and double fine structure in the binary cold fission	D.S. Delion, A. Sandulescu	Rom. Rep. Phys. 57, 693-713, (2005)	TPD
104.	Sub-barrier fusion reactions for synthesis of $^{298}114$	R. A. Gherghescu	Rom. Rep. Phys. 57, 741-749 (2005)	TPD
105.	Quantum to classical transition in the Lindblad theory of open quantum systems	A. Isar	Rom. Rep. Phys., 57, 4, 573-583 (2005)	TPD

106.	Calculation of nuclear level density relevant for thorium-based reactors	M. Rizea, S. Misicu, M. Petit, N Carjan, G. Barreau	Rom. Rep.Phys., 57, 757-794 (2005)	TPD
107.	Deterministic and statistical approach of modulational instability in the class of nonlinear Schroedinger equations	A.T. Grecu, D. Grecu, A. Visinescu	Rom.J.Phys. 50 (1-2), 129-137 (2005)	TPD
108.	Modulational instability of coupled nonlinear equations: Manakov's system	D. Grecu, A. Visinescu	Rom.J.Phys. 50, 137-146, (2005)	TPD
109.	Cold fusion channels of $^{290}114$	R. A. Gherghescu	Rom.Journ. Phys 50, 903-915, (2005)	TPD
110.	On a special class of periodic solutions of nonlinear Schrödinger equation	D. Grecu, A. Visinescu	Rom.Rep. Phys. 57 (4), 510-518 (2005)	TPD
111.	Lateral particle density reconstruction from the energy deposits of particles in the KASCADE-Grande detector stations	G. Toma, O. Sima, I.M. Brancus, H. Rebel, A. Haungs, B. Mitrica	Rom.Rep.Phys. 57, 334-341, (2005)	NPD
112.	IDEAS/IAEA Intercomparison Exercise on Internal Dose	M. Puscalau et al.	SCK-CEN- BLG-1018	LEPD
113.	Using nanofluids in cancer thermotherapy	D. Grecu, A. Visinescu	Studia Universitatis Babes-Bolyai, Special Issue, Proceedings of PIM, (2005)	TPD
114.	Radiolytic oxidation of the immunogenic conjugate testosterone-3-carboxzmethyloxim-bovine serum albumin and rabbit antitestosterone antiserum	M.A. Acasandrei, I.M. Petcu, M. Radu, I.Gazdaru, A. Popescu, I. I. Dorobanţu	Submited to Rom. Re Physics, september (2005)	LEPD
115.	Development of an immunoradiometric assay kit for Carcinoembrionyc Antigen	V. Borza, E. Neacsu	Submitted to Journal of Balkanic Union of Oncology	RPC
116.	Quantum beats in positronium 3Y annihilation decay observed in Age Dependent, Magnetically Perturbed Angular Distribution (ADPAD) experiment	E. Ivanov, I. Vata, I. Rusen, N. Stefan, V. Catanescu	Submitted to Rom. Journ. Phys.	ANPD

C) Carti / capitole

1	"Cell Injury: Mechanisms, Responses and Repair" (2005) N. Y. Acad. Sci. 1066	R.C. Lee, F. Despa and K. Hamann, Editors	TPD
2	Disaster Risk and Vulnerability Management. From Awareness to Practice, in A. Gheorghe (Ed.), Integrated Risk and Vulnerability Management Assisted by Decision Support Systems. Relevance and Impact on Governance, Springer, Dordrecht, p 1-320.	A. Gheorghe, D. Vamanu	LEPD
3	Gazso, L.G., Ponta, C.C., Eds., Radiation Inactivation of Bioterrorism Agents, NATO Science Series, Series I:Life and Behavioural Sciences - 365, IOS Press, Amsterdam, Berlin, Oxford, Tokyo, Washington, (2005), ISSN: 1566-7693	L. G. Gazso, C.C. Ponta,	IRASM
4	Niculae D. , Lungu V., Chiper D., CANTER-Redifos, Radioterapia cancerului osos şi a metastazelor osoase generalizate generalizate (Bone cancer and generalized bone metastasis radiotherapy), Manual de prezentare, ISBN 973-0-03802-3/(2005)	D. Niculae, V. Lungu, D. Chiper	RPC
5	Radioactivity, Chapter in Encyclopedia of Condensed Matter Physics, F. Bassani, J. Liedl and Wyder Eds, (Elsevier, Amsterdam, (2005)) in print.	D. N. Poenaru, W. Greiner	TPD
6	Proceedings of the International Conference on Applications of High Precision Atomic & Nuclear Methods, Neptun, Romania, 2-6 September 2002, Editura Academiei Romane, Bucuresti, (2005), ISBN: 973-27-1181-7, 357 pages	A. Olariu, K. Stenström and R.Hellborg	NPD

D) Papers presented at scientific meetings in 2005

1.	Interlaboratory comparison of elemental composition in the high alloy Swedish Seel SS 1 -Results from an inter -laboratory comparison exercise (Belgium, Hungary, Poland and Romania) using the INAA technique"	Em. Cincu, I. Manea, O. Sima, V.Manu, D. Barbos, I.Gustavsson, Vermaercke, H. Polkowska, N. Vajda, Z. Molnar	"IWIRAD-(2005)", Int. Workshop on 'Applications of the Ionising Radiation in Industry, Health and Environment", Bucarest, 20-21 iunie (2005)	ANPD
2.	Stable three-dimensional solitons in two-dimensional photonic lattices	D. Mihalache	"Nonlinear Optics Applications", SPIE, 5949, 159 (2005)	TPD
3.	On the mechanism of ion acceleration from intense laser interaction with thin targets	A. Calboreanu	"Beyond Einstein – Physics for the 21-th Century" -13-th General Conference of EPS, 11-15 July (2005); Proceedings pg. 67, PF-26	NPD
4.	AMS measurements of spallation yields from thick lead/bismut targets	C. Stan-Sion, A. Letourneau, V. Lazarev, H. Reithmeier, M. Enachescu and E.Nolte	10th International Conference on Accelerator Mass Spectrometry, Berkeley, California, September 5-10, (2005)	ANPD
5.	Hetero-Junction laser diodes under neutron irradiation	D. Sporea, R. Sporea and I. Vata	13th International Conference on Nuclear Engineering Beijing, China	Cyclotron
6.	Multinucleon transfer reactions to study single-particle evolution in Se isotopes	H.Regan, G.A.Jones, Zs.Podolyak, N.Yoshinaga, K.Higashiyama, G. de Angelis, Y.H.Zhang, A.Gadea, M.Axiotis, D.Bazzacco, R.Broda, D.Bucurescu, E.Farnea, W.Gelletly, M.Ionescu-Bujor, A.Iordachescu, Th.Kroll, S.D.Langdown, S.Lenzi, S.Lunardi, N.Marginean, T.Martinez, N.Medina, R.Menegazzo, D.R.Napoli, B.Quintana, B.Rubio, C.Rusu, R.Schwenger, D.Tonev, J.J.Valiente Dobon, W. von Oertzen, C.A.Ur	13th International Symposium on Capture Gamma-Ray Spectroscopy and Related Topics, Notre-Dame, September (2005), va apare in Proceedings	NPD
7.	Systematic studies of odd isotopes in vicinity of closed shell Z=50	I.Tomandl, J.Honzatko, V. Bondarenko, T. von Egidy, H.-F.Wirth, R.Hertenberger, Y.Eisermann, G.Graw, D.Bucurescu, V.Yu.Ponomarev	13th International Symposium on Capture Gamma-Ray Spectroscopy and Related Topics, Notre-Dame, September (2005), va apare in Proceedengs	NPD
8.	Deployment of the ATLAS high-level triggers	A. Anjos, M. Caprini et al.	14th IEEE - NPSS Real Time Conference Nuclear Plasma Sciences Society, Stockholm, Sweden, June (2005), ATL-COM-DAQ (2005)-023	ANPD
9.	ATLAS data flow: the read-out subsystem, results from trigger and data acquisition system testbed studies and from modelling	J. Vermeulen, M. Abolins, I. Alexandrov, A. Amorim, A. Dos Anjos, E. Badescu, N. Barros, H. Beck, R. Blair, D. Burckhart-Cromek, M. Caprini, M. Ciobotaru, A. Corso-Radu, R. Crandfield, G. Crone, J. Dawson, R. Dobinson, M. Dobson, G. Drake, Y. Ermoline, R. Ferrari, M. L. Ferrer, D. Francis, S. Gadomski, S. Gameiro, B. Gorini, B. Green, M. Gruwe, S. Haas, W. Haberichter, C. Haeberli, Y. Hasegawa, R. Hauser, C. Hinkelbein, R. Hughes-Jones, M. Joos, A. Kazarov, G. Kieft, S. Kolos, K. Korcyl, K. Kordas, V. Kotov, A. Kugel, A. Lankford, G. Lehmann, M. J. LeVine, L. Mapelli, B. Martin, R. McLaren, C. Meirosu, M. Mineev, A. Misiejuk, G. Mornacchi, M. Muller, R. Murillo, Y. Nagasaka, J. Petersen, B. Pope, D. Prigent, Y. Ryabov, J. Schlereth, J. E. Sloper, I. Soloviev, R. Spiworks, S. Stancu, J. Strong, L. Tremblet, G. Unel, W. Vandelli, Werner, F. Wickens, M. Wiesmann, M. Wu and Y. Yasu	14th IEEE-NPSS Real Time Conference (2005) Nuclear Plasma Science Society, Stockholm, Sweden, 4-10 June (2005)	ANPD

10.	Deployment and use of the ATLAS DAQ in combined test beam	S. Gadomski, M. Abolins, I. Alexandrov, A. Amorim, C. Padilla-Aranda, E. Badescu, H. Beck, R. Blair, D. Burckhart-Cromek, M. Caprini, M. Ciobotaru, Conde-Muino, A. Corso-Radu, B. Di Girolamo, M. Diaz-Gomez, R. Dobinson, M. Dobson, R. Ferrari, M. L. Ferrer, D. Francis, S. Gameiro, B. Gorini, M. Gruwe, S. Haas, C. Haeberli, R. Hauser, R. Hughes-Jones, M. Joos, A. Kazarov, D. Klose, S. Kolos, V. Kotov, G. Lehmann, L. Mapelli, B. Martin, R. McLaren, C. Meirosu, M. Mineev, A. Negri, E. Pasqualucci, V. Perez-Reale, J. Petersen, D. Prigent, Y. Ryabov, C. Sanchez, C. Santamaria-Rios, J. Schlereth, J. E. Sloper, I. Soloviev, S. Stancu, L. Tremblet, G. Unel, W. Vandelli, Werner, M. Wiesmann, Y. Yasu	14th IEEE-NPSS Real Time Conference (2005) Nuclear Plasma Science Society, Stockholm, Sweden, 4-10 June (2005), ATL-DAQ-CONF (2005)-019; ATL-COM-DAQ-(2005)-014.- Geneva: CERN, (2005)	ANPD
11.	Data on the spent radioactive sources inventory	Gh. Dogaru, D. M. Dogaru	14th National Conference on Physics, Bucharest, 13 - 17 september (2005)	DMDR
12.	Behaviours of a Bose-Einstein condensate in the vicinity of the zero-dispersion point	D. Grecu	14-th National Conference on Physics, Bucharest, 13-17 Sept. (2005)	TPD
13.	Lymphocytes radiosensitivity in multiple sclerosis patients	I.Petcu, D.Savu, A. Vral, H.Thierens, L.De Ridder	14th National Conference on Physics, Bucharest, 13-17 September (2005).	LEPD
14.	An interdisciplinary approach to modelling tritium transfer into the environment	D. Galeriu, A. Melintescu	14th National Conference on Physics, Bucharest, Romania, 13 – 17 September (2005)	LEPD
15.	The lauric response to an external electric field	E.Slavnicu, M.Ghelmez, D.Slavnicu, R.Trascu, C.Cartoaje	14th National Conference on Physics, Bucharest, Romania, 13-17 September (2005)	LEPD
16.	Physics and Life - Bussiness. Participation of IFIN-HH in ConvEx-3 Exercise	D.Vamanu, D.Slavnicu, D.Gheorghiu, V.Acasandrei, B.Vamanu	14th National Conference on Physics, Bucharest, Romania, September, 13-17 (2005)	LEPD
17.	Biophysical study of non-lethal stress response of cultured DC3F cells	D.S. Iancu, I. Ristea, L.C. Miclea, C.B.C. Iancu, M.Radu, T. Savopol, E. Kovacs	15th IUPAB & 5th EBSA International Biophysics Congress	LEPD
18.	Rod-like cells orientation in alternating electric field – a theoretical study	M. Radu	15th IUPAB & 5th EBSA International Biophysics Congress	LEPD
19.	Study of cells properties using optical tweezers and dielectrophoresis	D. Pietreanu, E. Papagiakoumou, E. Kovacs, T. Savopol, M. Radu, M. Makropoulou, A. Serafetinides	15th IUPAB & 5th EBSA International Biophysics Congress	LEPD
20.	Environmental monitoring by Mosses technique and PIXE method	C. Stihi, I. V. Popescu, C. Oros, G. Dima, A. Bancuta, M. Gugiu, T. Badica	23rd International Physics Congress, 13-16 September (2005), Mugla, Turkey	NPD
21.	Fluctuations in the EAS radio signal derived with improved Monte Carlo simulations based on CORSIKA	T.Huege et al, KASCADE Grande-LOPES collaboration	29th International Cosmic Ray Conference ICRC (2005), Pune, India, 3-11 Aug (2005)	NPD
22.	Determination of energy loss of 3-MeV alpha particles in Ni foil and ^{3}He gas using a Mg (α, γ) resonance	K. Michnicki, C. Bordeanu, J.D. Lowrey, K.A. Snover, D.W. Storm	2nd Joint Meeting of the Nuclear Physics Divisions of the APS and The Physical Society of Japan, September 18–22, (2005); Maui, Hawaii	NPD
23.	Retrospective review and future prospects of Russian-Romanian studies in life sciences using INAA at IBR-2 reactor in Dubna	M. Frontasyeva, O. Culicov, L. Dinescu, A. Pantelica and R. Mocanu	3rd Black Sea Basin Conference on Analytical Chemistry (3rd BBCAC), 12th - 14th of September, (2005), Constanta, Romania. Abstracts, S3 L03: 98 (2005)	NPD

24.	Thirty-year experience in applying neutron activation for analysis of mineral and biological samples from the Romanian sector of the Danube River and the Black Sea	A.I. Pantelica, M.N. Salagean and I.I. Georgescu	3rd Black Sea Basin Conference on Analytical Chemistry (3rd BBCAC), 12th - 14th of September, (2005), Constanta, Romania	NPD
25.	Quantum decoherence in the theory of open systems	A. Isar	3rd International Workshop on Quantum Physics and Communication (QPC'05), Dubna, Russia, June-July (2005)	TPD
26.	Labelling of DOTA-Tyr3-Octreotate with 177Lu and 131I for diagnosis and targeted therapy. In vitro and in vivo comparative evaluation	V. Lungu, D. Niculae, D. Chiper and M. Radu	3rd RCM on Comparative Evaluation of Therapeutic Radiopharmaceuticals, Viena, Austria, November 8-11, (2005)	RPC
27.	Radiolabelling of DOTA-TATE with 177Lu. Preliminary studies with a view to somatostatin receptor radionuclide therapy	V. Lungu, D. Niculae, L. Dănăilă and M. Purice	5th International Conference on Isotopes (5 ICI), Brussels, Belgium, April 25-29, (2005)	RPC
28.	Radiosynthesis and preliminary evaluation of 131I-DOTA-TATE as a potential tracer for somatostatin receptors visualization	V. Lungu, D. Niculae, D. Chiper and Albert	5th International Conference on Isotopes (5 ICI0, Brussels, Belgium, April 25-29, (2005)	RPC
29.	Dihydrotestosterone labelled with tritium	L. Matei, C. Postolache, V. Fugaru, C. Podina	5th International Conference on Isotopes, Brussels, Belgium 25-29 April (2005)	RPC
30.	Radiolyis of polytetrafluoroethylene and polystyrene catalytic suports in presence of tritiated water	C. Postolache, Matei Lidia, V. Fugaru, N. Negoita	5th International Conference on Isotopes, Brussels, Belgium 25-29 April (2005)	RPC
31.	Synthesis of N-phenyl succinimide labelled with hydrogen	C Postolache, L. Matei, V. Fugaru, C Deleanu, V. Serban	5th International Conference on Isotopes, Brussels, Belgium 25-29 April (2005)	RPC
32.	The influence of depleted deuterium water on dna synthesis in rat bone marrow cells following citostatic chemotherapy	V. Fugaru, C. Postolache, M. Lidia, I. Encur, M. Panait	5th International Conference on Isotopes, Brussels, Belgium 25-29 April (2005)	RPC
33.	Evaluation of in situ transformation of persistent organic pollutants	S. L. Badea	5th Young Researchers Workshop Institute of Geography of the Romanian Academy, December 9, 2005	DDR
34.	Brownian motion – 100 years from Einstein's paper	D. Grecu	6-th Balkan International Workshop on Applied Physics, Constanta, 5-7 iulie (2005)	TPD
35.	Determination of carbon in steels using particle-induced proton gamma ray spectrometry	A. Ene, I.V. Popescu, T. Badica	6th Int. Balkan Workshop on Applied Physics, Constanta, Romania, Jul. (2005)	NPD
36.	Inner Shell Vacancy production in the Ti+Pt collision at 0.25-1.875 MeV/u	C. Ciortea, D.E. Dumitriu, A. Enulescu, D. Fluerasu, M.M. Gugiu, I. Piticu, M. Pentia, C. Ciocarlan and A.T. Radu	6th International Balkan Workshop on Applied Physics, Constanta, Romania, July 5-7, (2005)	NPD
37.	Air pollution monitoring using PIXE method and Mosses as bioindicators	C. Stihi, A. Gheboianu, I.V. Popescu, T. Badica, M. Gugiu, I. Bancuta, S. Apostol, M. Virgolici and O. Constantinescu	6-th International Balkan Workshop on Applied Physics, Constanta, Romania, July 5-7, (2005)	NPD, IRASM
38.	Comparative study between: 99Mo-99mTc dry generator (with fission 99Mo) and 99Mo-99mTc gel generator (using 99Mo obtained by irradiation to nuclear reactor)	C. Cimpeanu, N. Negoita, C.Barna, E. Duta, Busuioc	6-th International Balkan Workshop on Applied Physics, Constanta, Iulie (2005)	RPC

39.	Production, chemical separation and characterization for: 186+188Re, 153Sm and 99Mo products of radiopharmaceutical use	C. Cimpeanu, N. Negoita, C. Barna, E. Duta, Busuioc	6-th International Balkan Workshop on Applied Physics, Constanta, Iulie (2005)	RPC
40.	The uranium determination in commercial iodinated salt	C. A. Simion, C. Cimpeanu, C. Barna, E.Duta	6-th International Balkan Workshop on Applied Physics, Constanta, Iulie (2005)	RPC
41.	Electrochemical decontamination methods potentially used in decommissioning of nuclear installation	L. Ionascu, M. Nicu, C. Turcanu	6th International Balkan Workshop on Applied Physics, July 5-7th (2005), Constanta, Romania	DMDR
42.	Structural investigation of improved radioactive waste conditioning matrix	M. Nicu, L. Ionascu, C. Turcanu, F. Dragolici	6th International Balkan Workshop on Applied Physics, July 5-7th (2005), Constanta, Romania	DMDR
43.	How to monitor and control a surveillance network using ATLAS Online Software	E. Badescu, M. Caprini, C. Caramarcu, C. Gruse	6th International Balkan Workshop on Applied Physics, July 5-7th, (2005), Constanta, Romania	ANPD
44.	A holomorphic representation of Jacobi algebra in several dimensions	S. Berceanu	6th Operator Algebras International Conference: Operator Algebras and Mathematical Physics-3, Bucharest (Romania), August 10-17, (2005), http://unr.edu/homepage/ramazan/OAMP3/program.htm	TPD
45.	Experimental observation of vibrations produced by pulsed laser beam in MgO:Fe57	F.Vagizov, R. Kolesov, S. Olariu, Y. Rostovtsev and O. Kocharovskaya	7th AFOSR Workshop on Isomers and Quantum Nucleonics, Dubna, Russia, (2005)	NPD
46.	Laser control of light-atomic and gamma-nuclear interactions in solids	O. Kocharovskaya, R. Kolesov, E. Kuznetsova, S. Olariu and F. Vagizov	7th AFOSR Workshop on Isomers and Quantum Nucleonics, Dubna, Russia, (2005)	NPD
47.	Results from the KASCADE, KASCADE-GRANDE, and LOPES experiments	J. R. Horandel, W.D. Apel, F. Badea, L. Bahren, K. Bekk, A. Bercuci, M. Bertaina, L. Biermann, J. Blumer, H. Bozdog, I.M. Brancus, M. Bruggemann, Buchholz, S. Buitink, H. Butcher, A. Chiavassa, G. de Bruyn, C.M. de Vos, F. Di Pierro, Doll, R. Engel, J. Engler, H. Falcke, H. Gemmeke, L. Ghia, H.-J. Gils, R. Glasstetter, C. Grupen, A. Haungs, D. Heck, A. Horneffer, T. Huege, K.H. Kampert, G.W. Kant, H.O. Klages, U. Klein, Y. Kolotaev, Y. Koopman, O. Kromer, J. Kuijpers, S. Lefebre, G. Maier, H.J. Mathes, H.J. Mayer, J. Milke, B. Mitrica, C. Morello, M. Muller, G. Navarra, S. Nehls, A. Nigl, R. Obenland, J. Oehlschlager, S. Ostapchenko, S. Over, J. Pepping, M. Petcu, J. Petrovic, T. Pierog, S. Plewnia, H. Rebel, A. Risse, M. Roth, H. Schieler, G. Schoonderbeek, O. Sima, M. Stumpert, G. Toma, G.C. Trinchero, H. Ulrich, J. van Buren, W. van Capellen, W. Walkowiak, A. Weindl, S. Wijnholds, J. Wochele, J. Zabierowski, J.A. Zensus, D. Zimmermann	9th International Conference on Astroparticle and Underground Physics (TAUP (2005)), Zaragoza, Spain, 10-14 Sep (2005)	NPD
48.	Modelling H-3 and C-14 transfer to farm animals and their products	D. Galeriu, A. Melintescu, N. Beresford, N. Crout, H. Takeda, R. Peterson	Animal Radioecology Workshop, Lancaster, 7-9 December (2005), UK, submitted to Journal of Environmental Radioactivity	LEPD
49.	Hamiltonian formulation of the energy density for relativistic fluids	I. Sandru, A. Sandru	Annual scientific session of the Faculty of Physics, Bucharest, (2005)	PPD
50.	Detector characterization for efficiency calibration in different measurement geometries	M. Toma, L. Dinescu, O. Sima	Annual Session, Faculty of Physics, University of Bucharest	DMDR
51.	ATLAS DAQ online infrastructure	M. Caprini	ATLAS TDAQ workshop, Mainz, Germany, October 10-14, 2006	ANPD
52.	Data Acquisition System	D.C. Cirstea, S.I. Buda, F.Constantin	Balkan Physics Conf. / Constanța 2005	ANPD

53.	Rectangular detection geometry for whole body PET using RPC	F. Constantin, S. Ochesanu	Balkan Physics Conf. / Constanţa 2005	ANPD
54.	Analysis of nanosecond time-resolved FRET decay data for complex models in heterogeneous cell membrane systems: use of moments	R. E. Dale, M. Acasandrei, M. van deVen, M. Ameloot	Biophysical Society 49th Annual Meeting, Long Beach, California, US, February 12-16, (2005)	LEPD
55.	Premises and priorities of special theory of relativity	A. Calboreanu	BPU International Workshop on Applied Physics – Constanta 6-th. July (2005)	NPD
56.	Isospin distillation from a microcanonical perspective	Ad. R. Raduta	Carpathian Summer School of Physics - Exotic Nuclei and Nuclear/Particle Astrophysics, Mamaia-Constanta, June 13-24, (2005)	NPD
57.	Isobaric cold fusion channels for synthesis of ^{298}114 and ^{290}114	R. A. Gherghescu	Carpathian Summer School of Physics (2005): Exotic Nuclei and Nuclear/Particle Astrophysics Mamaia-Constanta, June 13-24, (2005), Romania	TPD
58.	Quantum deformation of open systems	A. Isar, W. Scheid	Carpathian Summer School of Physics on Exotic Nuclei and Nuclear/Particle Astrophysics, Mamaia-Constanta, Romania, June (2005)	TPD
59.	Single-Particle Effects in the Threshold Fission Cross Section}, (oral presentation	M. Mirea	Carpathian Summer School of Physics, Exotix Nuclei and Nuclear/Particle Astrophysics, Mamaia-Constanta, June 13-24 (2005)	NPD
60.	Fission valleys and heavy ion decay modes, Invited talk, published in Exotic Nuclei and Nuclear/Particle Astrophysics, (World Sci., Singapore, (2005)) in print.	D. N. Poenaru, R. A. Gherghescu, and W. Greiner	Carpathian summer school on Exotic Nuclei and Nuclear/Particle Astrophysics, Mamaia, June 13-24, (2005)	TPD
61.	High counting rate symmetric multi gap multistrip RPC - DOC-(2005)-Mar-175	M. Petrovici	CBM Collaboration Meeting - GSI, Darmstadt, March 9-12, (2005)	NPD
62.	High counting rate transition radiation detector, DOC-(2005)-Mar-166	M. Petris	CBM Collaboration Meeting - GSI, Darmstadt, March 9-12, (2005)	NPD
63.	Collective excitations in membrane- and membrane-biomolecular chain-associated specific cellular processes	E.A. Preoteasa, M. Apostol, D. Gurban	Coherence and Electromagnetic Fields in Biological Systems (CEFBIOS-(2005)) Froehlich's Centenary Symposium, Prague, July 1-4, (2005), p 138-140.	LEPD
64.	The Cosmic Ray Experiment KASCADE-Grande	I.M. Brancus	Conf. Exotic Nuclei and Nuclear/Particle Astrophysics, CSSP(2005), Mamaia, Romania, June (2005)	NPD
65.	Galactic cosmic rays and the knee – results from the KASCADE experiment	J.R.Horandel et al. (The KASCADE Collaboration)	Conference on Astrophysical Sources of High Energy Particles and Radiation, Torun, Poland, 20-24 June (2005)	ANPD
66.	Polyphosphonates labeled with lanthanides for potential use in pain palliation	Bouziotis, M. Fani, V. Lungu, D. Niculae, I. Pirmettis, S.C. Archimandritis and A. D. Varvarigou	D18 COST Action Meeting, Cologne, Italy, Sept, (2005)	RPC
67.	Animal Scenarios	D. Galeriu, A. Melintescu	Environmental Modelling for RAdiation Safety, 3rd Conference Vienna, 21-25 November (2005), H-3&C-14 Working Group, Vienna, Austria (see http://www-ns.iaea.org/projects/emras/)	LEPD
68.	LMRI- Ionising Radiation Metrology Laboratory presentation	S.Bercea	EUROMET Ionizing Radiation Contact Person Meeting 1-2dec.(2005), Atena	CNRID

69.	Ionising Radiation Metrology Laboratory (LMRI) of IFIN-HH – Quality System presentation of the Laboratory	S.Bercea, M.Sahagia, S.Brancovici, A.Celarel	EUROMET QS – Forum, Bucharest, febr.(2005)	CNRID
70.	Elemental analysis of aerosols using PIXE method,	A. Bancuta, C. Stihi, I.V. Popescu, T. Badica	European Conference on New Trends in Nuclear Physics Applications and Tehnologies NPDC19, Pavia, Italy, Sepember 5-9, (2005), ISBN 2-914771-27-4.	NPD
71.	Air pollution studies using PIXE and ICP methods	C. Stihi, I.V. Popescu, Gh. Vlaicu, A. Bancuta, T. Badica, M. Virgolici and O. Constantinescu	European Conference on New Trends in Nuclear Physics. Applications and Tehnologies (NPDC 19), Pavia, Italy, September 5-9, (2005)	ANPD
72.	Lymphocytes radiosensitivity in multiple sclerosis patients	I.Petcu, D.Savu, A. Vral, H.Thierens, L. De Ridder	European Radiation Research, Annual Conference, (2005), September 5-8, Leicester, UK.	LEPD
73.	Recent results in neutrino physics	S. Stoica	Exotic nuclei and nuclear/particle astrophysics, 13-24 iunie, (2005), Mamaia, Romania	TPD
74.	Few-valence-particle (hole) excitations around doubly magic 132Sn	E. Dragulescu and D. Trancota	Exotic Nuclei and Nuclear/Particle Astrophysics, the Carpathian Summer School of Physics (2005), Mamaia-Constanta, Romania,June 13-24, (2005)	NPD
75.	GIS: pixels, analytic models cellular automata: a new kind of modeling	A.Gheorghe, D. Vamanu	Gulf Area International Workshop on the Use of GIS, Al Kuwait, (2005).	LEPD
76.	Pixel as a source of input, pixel as a support of output	A.G heorghe, D. Vamanu	Gulf Area International Workshop on the Use of GIS, Al Kuwait, (2005).	LEPD
77.	First measurement of pi+pi- atom lifetime	L. Afanasyev, M. Pentia et al.	HADRON 05, 21-26 August (2005), Rio de Janeiro [Brazil].	NPD
78.	Radwaste management in Romania	F. Dragolici, Gh. Rotarescu, C. Turcanu, Gh. Dogaru	IAEA la Baku, Azerbaidjan 13-17 iunie (2005)	DMDR
79.	The experience of the Radioisotope Department of IFIN-HH, Romania, in production, testing, delivery, transport and evidence of radioactive sources	C. Ivan, M.Sahagia, A. Luca, E.L.Grigorescu	IAEA, Vienna, International Conference on the Safety and Security of Radioactive Sources: Control of Sources throughout their Life Cycle, Bordeaux, France, 27 June – 1 July, (2005), IAEA-CN-134, pp 164 - 168	RPC
80.	SPICE simulations and circuit tests of digital noise reduction with MEMS inductors	M. Dima, K.-H. Becks	IEEE CAS-(2005) Proceedings	ITCD
81.	Surface studies and electrical tests of porous silicon SnO2 gas sensors	O. Dima, K.-H. Becks, A. Dima, C. Moldovan	IEEE CAS-(2005) Proceedings	ITCD
82.	Measurement of the 57Fe 14.5 keV state half-life by single-crystalscintillation time spectrometer	V.A. Morozov, N.V. Morozova, T. Badica, Gh. Cata-Danil, I.V. Popescu	Int. Conf. Frontiers in the Physics of Nucleus, St. Petresburg, Rusia, Jul. (2005)	NPD
83.	Identification of hydrogen and helium in Elastic Recoil Detection measurements using compact (ΔE-Eт) ionization chamber.	D. Pantelica, A. Isbasescu, F. Negoita, H. Petrascu, M. Petrascu, N. Scintee, Ionescu	Intern Conf. IBA 17, Sevilla, Spain, June (2005)	NPD
84.	Method for cross-talk determination in 4-n coincidence measurements	M. Petrascu, A. Constantinescu, I. Cruceru, M. Giurgiu, A. Isbasescu, H. Petrascu, C. Bordeanu, S. Serban, V. Stoica, T. Motobayashi, T. Kobayashi, A. Ozawa, T. Suda, M. Nishimura, Y. Yanagisawa, H. Otsu	Intern. Conf. " Frontiers in the Physics of Nucleus", Peterhof, Russia, (2005)	NPD
85.	Search for 4-neutron resonant state in the interaction of 11Li with light targets	M. Petrascu, A. Constantinescu, I. Cruceru, M. Giurgiu, A. Isbasescu, H. Petrascu, C. Bordeanu, S. Serban, V. Stoica, T. Motobayashi, T. Kobayashi, A. Ozawa, T. Suda, M. Nishimura, Y. Yanagisawa, H. Otsu	Intern. Conf. "Frontiers in the Physics of Nucleus", Peterhof, Russia, (2005)	NPD
86.	On a special class of periodic solutions of nonlinear Schrödinger equation	D. Grecu	International Conf. on Fundamental and Applied Research in Physics, Iasi, 26-29 oct. (2005)	TPD

87.	MS-ECRIS, the European roadmap to 3rd generation ECR ion sources	G. Ciavola, S. Gammino, L. Celona, L. Torrisi, s. Passarello, L. Andò, M. Cavenago, A. Galatà, Spaedtke, K.Tinschert, R. Lang, R. Iannucci, R. Leroy, C. Barué, D. Hitz, Seyfert, H. Koivisto, Suominen, O. Tarvainen, H. Beijers, S. Brandeburg, D. Vanrooyen, C. Hill, D. Kuchler, H. Homeyer, J. Rohrich, L. Schachter, S. Dobrescu	International Conference for Ion Sources, Caen- France, September (2005)	NPD
88.	Improved ion extraction from an electron cyclotron resonance ion source by a metal-dielectric extraction electrode	L. Schachter, S. Dobrescu, K. E. Stiebing	International Conference for Ion Sources, Caen, France, September (2005)	NPD
89.	New systematics of nuclear level density parameters	D. Bucurescu, T. von Egidy	International Conference NUSTAR05, Guildford, Jan. (2005), prezentare aparuta pe site-ul http://www.ph.surrey.ac.uk/cnrp/nustar05	NPD
90.	The use of a Tote-box Type Irradiator for Sterile Insect Technique Application	I. V. Moise, C. D. Negut, and Rodica Georgescu	International Conference on Area-Wide Control of Insect Pests: Integrating the Sterile Insect and Related Nuclear and Other Techniques, Vienna, Austria, May 9-13, (2005)	IRASM
91.	Correlation of nuclear level densities and masses	T. von Egidy, D. Bucurescu	International Conference on Capture Gamma-Ray Spectroscopy and Related Topics, Notre-Dame, September (2005), va apare in Proceedings	NPD
92.	Shape coexistence in PB nuclei probed by static electromagnetic moments	M. Ionescu-Bujor, A. Iordachescu, N. Marginean, C.A. Ur, D. Bucurescu, G. Suliman, C. Rusu, D.L. Balabanski, D. Bazzacco, F. Brandolini, S. Chme, M.De Poli, H. Hubel, N.H. Medina, G. Neyens, Pavan, R.V. Ribas, C. Rossi Alvarez	International Conference on Nuclear Structure, Astrophysics, and Reactions (FINUSTAR) Kos, Greece, 12-17 September (2005)	NPD
93.	Evaluation, planning and strategies on assuring the capabilities for management of radioactive waste from research reactors and small nuclear facilities decommissioning	F. Dragolici, Gh. Rotarescu, C.N.Turcanu, Gh. Dogaru, I. Paunica	International Conference on Operational Safety Performance in Nuclear Installations, Viena, Austria, November 30-December 2, (2005)	DMDR
94.	Theoretical aspects of pion-pion interactions	I. Caprini, G. Colangelo, H. Leutwyler	International Conference on QCD and Hadronic Physics, Beijing, China, 16-20 June (2005), e-Print Archive: hep-ph/0509266, to appear in International Journal of Modern Physics A	TPD
95.	Critical infrastructures Protection: from systems engineering to system of systems engineering. Use of cellular automata modeling	A. Gheorghe, D. Vamanu	International Conference on Resilient Infrastructures, Rotorua, New Zealand, September (2005).	LEPD
96.	Romanian National Repository for low and intermediate level radioactive waste, Baita-Bihor county: Present status and further developments	F. Dragolici	International Conference on Safety of Radioactive Waste Disposal, Tokyo, Japan, October 3-7,(2005)	DMDR
97.	Radiolabeled phosphonates for bone metastases therapy	V. Lungu, D. Niculae, Bouziotis, I. Pirmettis, D. Chiper and C. Podină	International Nuclear Chemistry Symposium (1st INCC), Kusadasi, Turkey, May 22-29, (2005)	RPC
98.	Experimental determination of the conditions for making calibrated irradiation benches for the verification of dosimetric apparata	S. Bercea, R. Macrin, A. Celarel, D. Hurezeanu, M. Antoneanu, M. Lungeanu	International Scientific Session, Ministry of Defense, Bucharest, May 2005	CNRID

99.	Systematics of proton emission	D.S. Delion, R.J. Liotta, R. Wyss	International Summer School "Exotic Nuclei and Nuclear/Particle Physics", Mamaia, Romania, June 13-24 (2005)	TPD
100.	Fermions and quantum anomalies on generalized Taub-NUT spaces	I. I. Cotaescu, M. Visinescu	International Symposium "Einstein 100", Iasi (2005)	TPD
101.	DOTA-Tyr3-octreotate labelled with 177Lu and 131I. Comparative Evaluation	V. Lungu, D. Niculae, D. Chiper and M. Radu	International Symposium on Trends in Radiopharmaceuticals, IAEA Vienna, Austria, November 14-17, (2005)	RPC
102.	In Vitro and in Vivo evaluation of phosphonates labelled with therapeutic radionuclides	V. Lungu, D. Niculae, Bouziottis, I. Pirmettis and Albert	International Symposium on Trends in Radiopharmaceuticals, IAEA Vienna, Austria, November 14-18, (2005)	RPC
103.	General relativity and quantum gravity	M. Visinescu	International Workshop of Applied Physics, IWAP'05, Constanta, (2005)	TPD
104.	Experience of using neutron activation analysis on mineral and biological samples: environmental and medical studies	A. Pantelica	International Workshop on "Applications of the Ionizing-Radiations to Industry, Health and Environment" (iWiRad (2005)), Bucuresti, Romania, June 20-21, (2005); IAEA TC Workshop "Investigation of health Effects on Children from the Consumption of Foods grown in Industrially Contaminated Areas" , Dubna, Russia, November 14-16, (2005) (CD-ROM)	NPD
105.	Absolute calibration of the lopes antenna system	S. Nehls, W.D. Apel, F. Badea, L. Bahren, K. Bekk, A. Bercuci, M. Bertaina, L. Biermann, J. Blumer, H. Bozdog, I.M. Brancus, M. Bruggemann, Buchholz, S. Buitink, A. Chiavassa, K. Daumiller, A.G. De Bruyn, C.M. De Vos, Doll, R. Engel, H. Falcke, H. Gemmeke, L. Ghia, R. Glasstetter, C. Grupen, A. Hakenjos, Andreas Haungs, D. Heck, J.R. Horandel, A. Horneffer, T. Huege, K. H. Kampert, G..W. Kant, U. Klein, Y. Kolotaev, Y. Koopman, O. Kromer, J. Kuijpers, S. Lafebre, G. Maier, H.J. Mathes, H.J. Mayer, J. Milke, B. Mitrica, C. Morello, G. Navarra, A. Nigl, R. Obenland, J. Oehlschlager, S. Ostapchenko, S. Over, H.J. Pepping, M. Petcu, J. Petrovic, T. Pierog, S. Plewnia, H. Rebel, A. Risse, M. Roth, H. Schieler, G. Schoonderbeek, O. Sima, M. Stumpert, G. Toma, G.C. Trinchero, H. Ulrich, J. van Buren, W. Van Capellen, W. Walkowiak, A. Weindl, S. Wijnholds, J. Wochele, J. Zabierowski, J.A. Zensus, D. Zimmermann	International Workshop on Acoustic and Radio EeV Neutrino Detection Activities (ARENA 05), Zeuthen, Germany, 17-19 May (2005)	NPD
106.	Combined lopes and Kaskade-Grande data analysis	A. Haungs, W.D. Apel, F. Badea, L. Bahren, K. Bekk, A. Bercuci, M. Bertaina, L. Biermann, J. Blumer, H. Bozdog, I.M. Brancus, M. Bruggemann, Buchholz, S. Buitink, H. Butcher, A. Chiavassa, K. Daumiller, A.G. De Bruyn, C.M. De Vos, F. Di Pierro, Doll, R. Engel, H. Falcke, H. Gemmeke, L. Ghia, R. Glasstetter, C. Grupen, D. Heck, J.R. Horandel, A. Horneffer, T. Huege, K.-H. Kampert, G.W. Kant, U. Klein, Y. Kolotaev, Y. Koopman, O. Kromer, J. Kuijpers, S. Lafebre, G. Maier, H.J. Mathes, H.J. Mayer, J. Milke, B. Mitrica, C. Morello, G. Navarra, S. Nehls, A. Nigl, R. Obenland, J. Oehlschlager, S. Ostapchenko, S. Over, H.J. Pepping, M. Petcu, J. Petrovic, T. Pierog, S. Plewnia, H. Rebel, A. Risse, M. Roth, H. Schieler, G. Schoonderbeek, O. Sima, M. Stumpert, G. Toma, G.C. Trinchero, H. Ulrich, J. Van Buren, W. Van Capellen, W. Walkowiak, A. Weindl, S. Wijnholds, J. Wochele, J. Zabierowski, J.A. Zensus, D. Zimmermann	International Workshop on Acoustic and Radio EeV Neutrino Detection Activities (ARENA 05), Zeuthen, Germany, 17-19 May (2005)	NPD
107.	Isospin fractionation and the phase diagram of excited nuclei	Ad. R. Raduta	International Workshop on Multifragmentation and related areas, Catania, Italy, (2005)	NPD
108.	Isospin effects in neutron-rich and Neutron-poor Sn+Ni Systems	R. Planeta si colaborarea CHIMERA/ISOSPIN , I. Berceanu, M. Petrovici, A. Pop, V. Simion	International Workshop on Multifrag-mentation and related topics-IWM(2005), Catania, Italy, Nov 28 - Dec 1, (2005)	NPD
109.	Investigation of exotic system decay in nuclear reactions measured with CHIMERA detector	A. Sochocka si colaborarea CHIMERA/ISOSPIN , I. Berceanu, M. Petrovici, A. Pop, V. Simion	International Workshop on Multifragmentation and related topics-IWM(2005), Catania, Italy, November 28 - December 1, (2005)	NPD

110.	Recent progress in the dynamical fragment production as seen with CHIMERA	Russotto si colaborarea CHIMERA/ISOSPIN , I. Berceanu, M. Petrovici, A. Pop, V. Simion	International Workshop on Multifragmentation and related topics-IWM(2005), Catania, Italy, November 28 - December 1, (2005)	NPD
111.	Building a peaceful life in the future society using nuclear analytical techniques	Em. Cincu, Ioana Manea, Manu Valentin, Sibila Brancovici	International Workshop on Radiological Sciences' - Peaceful Uses of Nuclear Technologies, „IWRSA (2005)", Vienna, 15 -18 martie, (2005)	ANPD
112.	Standardization of 222Rn by LSC and comparison with alpha and gamma spectrometry	Cassette, M. Sahagia, L. Grigorescu, M.C. Lépy, J.L. Picolo	Intl. Conf. ICRM 2005, Radionuclide Metrology and its applications, Oxford, UK, 5-9.09.2005	RPC
113.	Standardization of 99mTc	M. Sahagia	Intl. Conf. ICRM 2005, Radionuclide Metrology and its applications, Oxford, UK, 5-9.09.2005	RPC
114.	The IFIN-HH triple coincidence liquid scintillation counter	A.C. Razdolescu, R. Broda, Cassette, B.R.S. Simpson, W.M. Van Wyngaardt	Intl. Conf. ICRM 2005, Radionuclide Metrology and its applications, Oxford, UK, 5-9.09.2005	RPC
115.	The Collaboration of the Radionuclide Metrology Laboratory from IFIN-HH, owner of the primary activity standard, with units involved in Nuclear Energy Field	M.Sahagia, A.C.Razdolescu, E.L.Grigorescu, A.Luca, C.Ivan	Intl. Conf., SIEN 2005, Bucharst, Oct.2005	RPC
116.	Exotic phenomena in medium mass nuclei	A. Petrovici	Invited lecture at the 'Carpathian Summer School of Physics (2005): Exotic Nuclei and Nuclear/Particle Astrophysics', June 13-24 (2005), Mamaia, Romania	NPD
117.	A holomorphic representation of the Jacobi algebra	S. Berceanu	Invited talk at the Institute of Mathematics, Zagreb, Croatia, December 1, (2005)	TPD
118.	Representations of coherent state Lie algebras by holomorphic differential operators	S. Berceanu	invited talk at the Ruder Boskovich Institute, Zagreb, Croatia, 31 November, (2005)	TPD
119.	Air pollution biomonitoring in the industrial regions of Transilvanian plateau	A. Lucaciu	Materialele Conferintei Jubiliare INECO 15 ANI Republica Moldova, (in press), Decembrie (2005)	LEPD
120.	LMR role in organizing interlaboratory comparisons for activity measures (e-publication)	M.Sahagia, A.C.Razdolescu, C.Ivan	National Conference of the Romanian Radioprotection Society, Timisoara, June 2005	RPC
121.	Resolving thin boundary layers in numerical quadrature (Invited lecture)	Gh. Adam, S. Adam, A Tifrea and A. Neacsu	National Conference on Physics (CNF (2005)), Bucharest, Romania, September 13-16, (2005)	TPD
122.	Quantum to classical transition in the theory of open systems	A. Isar	National Conference on Physics (CNF'05), Bucharest-Magurele, Romania, September (2005)	TPD
123.	Mathematical modelling correlated to MIRD for calculation absorbed dose from animal biodistribution data	V. Lungu, S. Baiculescu, D. Chiper, D. Niculae and L. Danaila	National Conference on Physics, Bucharest, Romania, September (2005)	RPC
124.	3He(α,γ) 7Be cross Section measurement-project overview	C. Bordeanu	National Nuclear Physics Summer School (2005),Berkeley, CA June 5th to 17th	NPD
125.	Air quality study by PIXE method and Mosses as bioindicators	A. Gheboianu, C. Stihi, I.V.Popescu, T.Badica, M.M.Gugiu, I.Bancuta	National Physics Conference, (CNF 2005), Bucharest, Romania, September 13-17, 2005 vol 1, 151, Editura PRINTECH, ISBN: 973-718—304-5.	NPD
126.	Air quality study by PIXE method and Mosses as bioindicators	A. Gheboianu, C. Stihi, I. V. Popescu, T. Badica, M.M. Gugiu, O. Constantinescu, M. Vargolici and I. Bancuta	National Physics Conference, (CNF 2005), Bucharest, Romania, September 13-17, 2005	ANPD
127.	Comparative study of PIGE, PIXE and NAA analytical techniques for the determination of minor elements in steels	A. Ene, I.V. Popescu, T. Badica	National Physics Conference, (CNF 2005), Bucharest, Romania, September 13-17, 2005	NPD

128.	Determination of efficiency with X-ray generation tube	S.Bercea, R.Macrin, A.Celarel, D. Hurezeanu, M. Antoneanu, M. Lungeanu	National Physics Conference, (CNF 2005), Bucharest, Romania, September 13-17, 2005	CNRID
129.	Dynamics of amino glycine molecule in triglycine sulphate by incoherent quasielastic neutron scattering	V. Tripadus, A.Radulescu, A..Buchsteiner, S.Janssen, D. Aranghel, C..Simion	National Physics Conference, (CNF 2005), Bucharest, Romania, September 13-17, 2005	NPD
130.	EPR investigation of some irradiated traditional oriental spices	O. G. Duliu, R. Georgescu and S. Ibrahim Ali	National Physics Conference, (CNF 2005), Bucharest, Romania, September 13-17, 2005	IRASM
131.	Personnel training program for VVR-S nuclear research reactor on the radiological characterization and cleanup activities	C. Avădanei, E. Ionescu, I. Ivanov, M. Dragusin, I. Iorga, D. Stanga, V. Copaciu, V.Popa, A. Zorliu, I. Mincu, C. Dragolici, A. Boicu, C. Tuca, S. Badea, H. Lupescu	National Physics Conference, (CNF 2005), Bucharest, Romania, September 13-17, 2005	DDR
132.	Positron Physics	I.Vata	National Physics Conference, (CNF 2005), Bucharest, Romania, September 13-17, 2005	Cyclotron
133.	Quantum anomalies in gravitational interactions	M. Visinescu	National Physics Conference, (CNF 2005), Bucharest, Romania, September 13-17, 2005	TPD
134.	Release conceptual considerents for predecommissioning activities at VVR-S nuclear research reactor	D. Stângă, V. Copaciu, M. Dragusin, V. Popa, I. Iorga, A. Zorliu, I. Mincu, C. Dragolici, A. Boicu, C. Tuca, S. Badea, E. Ionescu, H. Lupescu	National Physics Conference, (CNF 2005), Bucharest, Romania, September 13-17, 2005	DDR
135.	Quantum beats in positronium 3y annihilation decay observed in age dependent, magnetically perturbed angular distribution (ADPAD), experiment	E. Ivanov, I.Vata, I.Rusen, N.Stefan, V.Catanescu	National Physics Conference, 13-17 September (2005)	ANPD
136.	Methods of radiological characterization areas of influence the warehouses of radioactive wastes historical	C. Gârlea, M. R. Calin, A. Petre, (IFIN-HH) I. Gârlea, C. Kelerman, (SC Sendra-NT),	National Physics Conference, Bucharest, 13-17 sept (2005)	LEPD
137.	Determination of elements in steels using particle-induced prompt gamma ray emission	A. Ene, I.V. Popescu, T. Badica	National Physics Conference, Bucharest, 13-17 september (2005)	NPD
138.	A positive discrete series representation of the Jacobi algebra	S. Berceanu	National Physics Conference, CNF (2005), September 13- 16, Bucharest, Romania	TPD
139.	Process control of radiation treatment	C.C.Ponta	NATO Science Series, 365, pgs. 37-45, 2004, IOS Press, (2005)	IRASM
140.	Shape coexistence in light krypton isotopes	E. Clement, A. Gorgen, E. Bouchez, A. Chatillon, W. Korten, Y. Le Coz, C. Theisen, C. Andreoiu, F. Becker, B. Blank, C. Borcea, A. Buta, J.M. Butler, W.N. Casandjian, T. Catford, A. Czosnyka, G. Emsallem, de France, J. Genevey, J. Gerl, F. Hannachi, K. Hauschild, R.D. Herzberg, A. Hurstel, J. Iwanicki, D. Jenkins, G. Jones, M. Lewitowicz, R. Lucas, I. Matea, F. Negoita, F.D. Santos, D. Pantelica, J. Pinston, M. Rahkila, G. Rejmund, M. Sletten, C. Stanoiu, R. Timis, J.N. Wadsworth, Wilson, M. Zielinska	Nuclei at the limits 764: 55-61, (2005), Aip Conference Proceedings, Editor(s): Seweryniak D, Khoo TL	NPD
141.	Towards a standard model of societal vulnerability to natural disasters. The Katrina Paradigm	A.Gheorghe, D. Vamanu	OECD Workshop on Science and Technology for a Safer Society, Tokyo, Japan, December 5-6, (2005)	LEPD
142.	Neutron-Neutron correlation approach for 11Li Halo structure investigation	M. Petrascu	Oral presentation at National Physics Conference, Bucharest, 2005	NPD

143.	Pre-emission of correlated neutrons in the Fusion of 11Li Halo Nuclei with Si Targets	M. Petrascu, A. Constantinescu, I Cruceru, M. Giurgiu, A. Isbasescu, H. Petrascu, C. B M. Thoennenssen, M. Famiano, V.L.Lyuboshits, V.V.Lyuboshits, K. Yeki	Participare la Targul Romexpo, Expozitia "Salonul cercetarii (2005)"	NPD
144.	Behaviour of a Bose-Einstein condensate in the vicinity of the zero-deispersion point	A. Visinescu	Physics Conference TIM-05, Timisoara, 25-26 nov.(2005)	TPD
145.	On a special class of periodic solutions of nonlinear Schrödinger equation	D. Grecu	Physics Conference TIM-05, Timisoara, 25-26 nov.(2005)	TPD
146.	Lateral Particle Density Reconstruction from the Energy Deposits of Particles in the KASCADE-Grande Detector Stations	G. Toma, O. Sima, I.M. Brancus, H. Rebel, A. Haungs, B. Mitrica	Physics Faculty Conference	NPD
147.	Using nanofluids in cancer thermotherapy,	D. Grecu	PIM Conf. on Isotopic and Moleculare Processes, 22-24 Sept. 2005	TPD
148.	Production, chemical separation and characterization for: 186+188Re, 153Sm and 99Mo products of radiopharmaceutical use	C. Cimpeanu, N. Negoita, C. Barna, E. Duta, Busuioc	PIM Conference Cluj, Sept.2005; Proceedings of the fourth Conference, Studia Universitatis Babes Bolyai, pp.347-351, ISSN 0258-8730	RPC
149.	Shape coexistence effects in Kr-78	O. Radu, A.Petrovici, K.W. Schmid and A. Faessler	Poster and presentation at 12th Euro Summer School on Exotic Beams, Mainz (Germany), 25.08 – 02.09.2005	NPD
150.	An outreach project for LOFAR and cosmic ray detection	A. Nigl et al, KASCADE Grande-LOPES collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
151.	A cosmic ray trigger for LOFAR	A. Nigl et al, KASCADE Grande-LOPES collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
152.	A self-triggered, high resolution data acquisitation system for KASCADE-Grande experiment	M. Brueemann et al., KASCADE Grande collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
153.	Approach to elemental energy spectra of cosmic rays by correlation curves method	I. Lebedev et al., KASCADE Grande collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
154.	Composition and energy spectra around the knee – recent results from KASCADE	H.Ulrich et al, KASCADE Grande collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
155.	Detection of radio pulses from extensive air showers	A. Horneffer et al., KASCADE Grande-LOPES collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
156.	Electric field influence on the radio emission of air showers	S. Buitinik et al., KASCADE Grande-LOPES collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
157.	Event-by-event studies of primary energy estimation and mass discrimination of cosmic rays by using EAS lateral distribution observed in KASCADE-Grande	I.M.Brancus, T. Antoni, W.D. Apel, A.F. Badea, K. Bekk, A. Bercuci, M. Bertaina, H. Bluemer, H. Bozdog, M. Brueggemann, Buchholz, A. Chiavassa, K. Daumiller, F. Di Pierro, Doll, J. Engler, F. Fessler, H.J. Gils, L. Ghia, R. Glasstetter, C. Grupen, A. Haungs, D. Heck, J.R. Hoerandel, K.H. Kampert, H.O. Klages, Y. Kolotaev, G. Maier, H-J. Mathes, H.J. Mayer, H.H. Mielke, B. Mitrica, C. Morello, M. Mueller, G. Navarra, R. Obenland, J. Oehlschlaeger, S. Ostapchenko, S. Over, M. Petcu, T. Pierog, S. Plewnia, H. Rebel, A. Risse, M. Roth, H. Schieler, J. Scholz, O. Sima, M. Stuempert, G. Toma, G.C. Trinichero, H. Ulrich, S. Valchierotti, J. van Buren, W. Walkowiak, A. Weindl, J. Wochele, J. Zabierowski, S. Zagromski, D. Zimmermann	Proc. 29-th ICRC, Pune, India, (2005)	NPD

158.	First determination of the reconstruction resolution of an EAS radio detector	A.F.Badea, T.Antoni, W.D.Apel, K.Bekk, A.Bercuci, M.Bertaina, H.Bluemer, H.Bozdog, I.M.Brancus, M.Brueggemann, Bucholz, A.Chiavassa, K.Daumller, F.di Pierro, Doll, R.Engel, J.Engler, H.Falcke, F.Fessler, L.Ghia, H.J.Gils, R.Glasstetter, A.Haungs, D.Heck, J.R.Hoerandel, A.Horneffer, T.Huege, K.H.Kampert, G.W.Kant, H.O.Klages, Y.Kolotaev, G.Maier, H.J.Mathes, H.J.Mayer, J.Milke, C.Morello, M.Mueller, G.Navarra, R.Obenland, J.Oehlschlaeger, S.Ostapcheko, M.Petcu, S.Plewnia, H.Rebel, A.Risse, M.Roth, H.Schieler, J.Scholz, M.Stuempert, T.Thouw, G.Toma, G.C.Trinchero, H.Ulrich, S.Valchierotti, J.van Buren, C.Mde Vos, W.Walkowiak, A.Weindl, J.Wochele, J.Zabierowski, S.Zagromski, D.Zimmermann	Proc. 29-th ICRC, Pune, India, (2005)	NPD
159.	Hadronic multiple production in extensive air showers and accelerator experiments	Ch. Meurer al, KASCADE Grande collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
160.	Investigation of hadronic interaction models with KASCADE-Grande calorimeter	J. Milke al., KASCADE Grande collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
161.	Investigation of hadronic interaction models with KASCADE-Grande calorimeter	J. Milke al, KASCADE Grande collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
162.	LOPES-30: A digital antenna array for measuring high-energy cosmic ray air showers	S.Nehls et al, KASCADE Grande-LOPES collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
163.	Monte Carlo simulations and semi-analytical parameterizations of the atmospheric muon flux controlled by muon charge ratio	I.M.Brancus, B.Mitrica, G.Toma, J.Wentz, H.Rebel, A.Bercuci	Proc. 29-th ICRC, Pune, India, (2005)	NPD
164.	Muon density measurements with KASCADE-Grande	A. Haungs et al, KASCADE Grande collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
165.	Muon number spectrum measured by KASCADE-Grande	J. Van Buren al, KASCADE Grande collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
166.	Muon tracking in KASCADE-Grande: CORSIKA simulation study	J.Zabierowski al, KASCADE Grande collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
167.	Operation, calibration and accuracy of the grande array of the KASCADE-Grande experiment	A.Chiavasssa et al, KASCADE Grande collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
168.	Radio emission of highly inclined cosmic ray air showers measured with LOPES	J. Petrovic et al, KASCADE Grande-LOPES collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
169.	Remote event analysis of LOPES-10	A.F.Badea et al, KASCADE Grande-LOPES collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
170.	Self-consistent analysis of muon production height with muon tracking detector-KASCADE data	R. Obenland al, KASCADE Grande collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
171.	Shower size reconstruction at KASCADE-Grande	K.H.Kampert et al, KASCADE Grande collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
172.	Simulation and parametrisation of radio emission from cosmic ray air showers	T.Huege et al, KASCADE Grande-LOPES collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
173.	Studies of different LDF's for primary energy estimation and mass discrimination of cosmic rays by the EAS lateral distribution observed in KASCADE-Grande	H. Rebel et al, KASCADE Grande collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
174.	The influence of properties of individual hadronic interactions on the development of extensive air showers	J. R.Hoerandel al, KASCADE Grande collaboration	Proc. 29-th ICRC, Pune, India, (2005)	NPD
175.	Hadrons in a calorimeter measured in air showers and at an accelerator	S.Plewnia al, KASCADE Grande collaboration	Proc. 29-th ICRC,Pune, India, (2005)	NPD
176.	Standardization of V-48	E.L. Grigorescu, A.C. Razdolescu, M. Sahagia, A. Luca	Proc. Conf. HIPAN 02, Ed. Acad. Romana, (2005), p86-91	RPC
177.	Effect of electron-phonon interaction on the single-particle spectral weight of the Hubbard model	R. Citro, S. Cojocaru and M. Marinaro	Proc. International Conference on Strongly Correlated Electron Systems, Viena, Austria, July 26-30, (2005)	TPD

178.	Fragment-fragment correlation in the nuclear reaction 124Sn+64Ni at 35A.MeV with CHIMERA	C. Maiolino, C.Agodi, R.Alba, F. Amorini, A. Anzalone, L. Auditore, V. Baran,I. Berceanu, J. Blicharska, J. Brzychczyk, B. Borderie, R. Bougault, M. Bruno, G. Cardella, S. Cavallaro, R.Coniglione, M. B. Chatterjee, A. Chbihi, J. Cibor, M. Colonna, M. D'Agostino, E. De Filippo, R. Dayras,A.DelZoppo, M. Di Toro, J. Frankland, E. Galichet, W. Gawlikowicz, E. Geraci, F. Giustolisi, A. Grzeszczuk, Guazzoni, D. Guinet, M. Iacono-Manno, S. Kowalski, E. La Guidara, G. Lanzano, G. Lanzalone, N. Le Neindre, Z. Majka, A. Pagano, M. Papa, M. Petrovici, E. Piasecki, S. Pirrone, R. Płaneta, G. Politi, A. Pop, F. Porto, M. F. Rivet, E. Rosato, F. Rizzo,S. Russo, Russotto,D.Santonocito, Sapienza, M. Sassi, K. Schmidt, K. Siwek-Wilczynska, I. Skwira, M. L. Sperduto, Ł. Swiderski, A. Trifiro, M. Trimarchi, G. Vannini, M. Vigilante, J. Wieleczko, J. Wilczynski3, L. Zetta and W. Zipper	Proc. of the XLIII Int. Winter Meeting on Nuclear Physics, Bormio, March (2005), Ed. I.Iori	NPD
179.	PIXE and ERDA analysis of composites for restorative dentistry	E.A Preoteasa, C. Ciortea, D. Fluerasu, D. Pantelica, F. Negoita, L. Harangus, A. Iordan, E. Preoteasa, M. Moldovan	Proceedings of International Conference on Applications of High Precision Atomic & Nuclear Methods Neptun, Romania, 2-6 September 2002 (Olariu A., Stenstrom K, Hellborg R, eds.), Rom. Acad. Publishing House Bucharest, 178-184, (2005).	LEPD
180.	Dynamical fission in the Sn+Ni interaction at 35 A.MeV	E. Russoto, E, Piasecki, C.Agodi, R.Alba, F. Amorini, A. Anzalone, L. Auditore, V. Baran,I. Berceanu, J. Blicharska, J. Brzychczyk, B. Borderie, R. Bougault, M. Bruno, G. Cardella, S. Cavallaro, R.Coniglione, M. B. Chatterjee, A. Chbihi, M. Colonna, M. D'Agostino, E. De Filippo, R. Dayras,A.DelZoppo, M. Di Toro, J. Frankland, E. Galichet, W. Gawlikowicz, E. Geraci, F. Giustolisi, A. Grzeszczuk, Guazzoni, D. Guinet, M. Iacono-Manno, S. Kowalski, E. La Guidara, G. Lanzano, G. Lanzalone, C. Maiolino, N. Le Neindre, M. G. Nicolis, Z. Majka, A. Pagano, M. Papa, M. Petrovici, S. Pirrone, R. Płaneta, G. Politi, A. Pop, F. Porto, M. F. Rivet, E. Rosato, F. Rizzo,S. Russo, Russotto,D.Santonocito, Sapienza, M. Sassi, K. Schmidt, K. Siwek-Wilczynska, I. Skwira, M. L. Sperduto, A. Sochocka, Ł. ´Swiderski, A. Trifiro, M. Trimarchi, G. Vannini, M. Vigilante, J. Wieleczko, J. Wilczynski, L. Zetta, W. Zipper	Proceedings of the 12^{TH} Nuclear Physics Workshop, September 23–26, (2005), Kazimierz, Poland, In press on: Int. J. Mod. Phys. E, (2005)	NPD
181.	Radiolysis of polytetrafluoroethylene and polystyrene catalytic suports in presence of tritiated water	C. Postolache, L. Matei, V. Fugaru, N. Negoita	Proceedings of the 5-th International Conference on isotopes, ISBN 88-7597-186-8, p 341-446	RPC
182.	GIS: pixels, analytic models, cellular automata. innovations in science and policy for risk and vulnerability assessment of critical infrastructures	A.Gheorghe, D. Vamanu	Proceedings of the Annual IIASA-DPRI International Meeting on Integrated Disaster Risk Management, September (2005).	LEPD
183.	Daily regional vulnerability of infrastructures to obnoxious agents. How vulnerable are you today?	A.Gheorghe, D. Vamanu	Proceedings of the Annual IIASA-DPRI Meeting on Integrated Disaster Risk Management, Beijing, September (2005).	LEPD

184.	Trace elements and cutaneous cancer	C. Ciortea, A. Pantelică, O. Constantinescu, I. Căta Danil, D.Flueraşu, D.E. Dumitriu A. Enulescu, I. Piticu, M.M.Gugiu, A.T. Dumitrescu, K. Gašparová, M. Ciortea, A. Popa, A. Ganea-Sauteanu, B. Burghelea, E. Popescu, D. Donciu, A. Moldovan, L. Popescu. D.J. Diaconu	Proceedings of the International Conference on Application of High Precision Atomic & Nuclear Methods, Neptun, Romania, September 2-6, 2002, Editura Academiei (2005), eds. Agata Olariu, Kristina Stenstrom, Ragnar Hellborg, 142	NPD
185.	22Na positron source for annihilation positron spectroscopy	C. Cîmpeanu, L. Craciun, E. Dragulescu, D. Dudu, N. Miron, M. Racolta, D. Voiculescu	Proceedings of the International Conference on Applications of High Precision Atomic & Nuclear Methods Neptun, Romania 2-6 September 2002, Editors: Agata Olariu, Kristina Stenström, Ragnar Hellborg, Publishing House of Romanian Academy, (2005), ISBN 973-27-1181-7, pag 147-152	RPC
186.	Preparation and standardization of a 153SmCl3 radiopharmaceutical	M. Sahagia, A. C. Razdolescu, C. Cîmpeanu, E. L. Grigorescu, A. Luca, C. Ivan	Proceedings of the International Conference on Applications of High Precision Atomic & Nuclear Methods Neptun, Romania 2-6 September 2002, Editors: Agata Olariu, Kristina Stenström, Ragnar Hellborg, Publishing House of Romanian Academy, (2005), ISBN 973-27-1181-7, pag 101-108	RPC
187.	Production and chemical separation of 48V radioisotope	Z. Szucs, D. Dudu, C. Cîmpeanu, A. Luca, E. Duta, M. Sahagia	Proceedings of the International Conference on Applications of High Precision Atomic & Nuclear Methods Neptun, Romania 2-6 September 2002, Editors: Agata Olariu, Kristina Stenström, Ragnar Hellborg, Publishing House of Romanian Academy, (2005), ISBN 973-27-1181-7, pag 81-86	RPC
188.	Quantitative vulnerability assessment for critical infrastructures: bridging risk management and safety	A. Gheorghe, D. Vamanu	Proceedings of the International Conference on Risk and Safety Management, Hong Kong (2005)	LEPD
189.	Gravitational and axial anomalies for generalized Euclidean Taub-NUT metrics	M. Visinescu	Proceedings of the SQS'05 Workshop "Supersymmetries and quantum symmetries", JINR, Dubna (2005)	TPD
190.	Isospin effects studied with CHIMERA detector at 35 MeV/nucleon	R. Planeta, Agodi, R.Alba, F. Amorini, A. Anzalone, L. Auditore, V. Baran, I. Berceanu, J. Blicharska, J. Brzychczyk, B. Borderie, R. Bougault, M. Bruno, G. Cardella, S. Cavallaro, R.Coniglione, M. B. Chatterjee, M. Colonna, M. D'Agostino, E. De Filippo, R. Dayras, A.Del Zoppo, M. Di Toro, J. Frankland, E. Galichet, W. Gawlikowicz, E. Geraci, F. Giustolisi, A. Grzeszczuk, Guazzoni, D. Guinet, M. Iacono-Manno, S. Kowalski, E. La Guidara, G. Lanzanò, G. Lanzalone, N. Le Neindre, Z. Majka, A. Pagano, M. Papa, M. Petrovici, E. Piasecki, S. Pirrone, G. Politi, A. Pop, F. Porto, M. F. Rivet, E. Rosato, F. Rizzo, S. Russo, Russotto, D. Santonocito, M. Sassi, K. Schmidt, K. Siwek-Wilczynska, I. Skwira, M. L. Sperduto, Ł. Swiderski, A. Trifirò, M. Trimarchi, G. Vannini, G.Verde, M. Vigilante, J. Wieleczko, J. Wilczynsk, L. Zetta and W. Zipper	Proceedings of the XXIX Mazurian Lakes Conference on Physics "Nuclear Physics and the Fundamental Processes" August 30 - September 6, (2005), Piaski, Poland	NPD
191.	A cellular automaton approach to air flow dispersion in urban areas	A.Gheorghe, D. Vamanu	Proceedings on Systems Analysis for a More Secure World: Application of System Analysis and REMS to Security of Complex Systems, Giacomo G.M. Cojazzi, Editor, ECJRC Ispra, p.369-383.	LEPD

192.	Information, network, and mathematical support of theoretical and experimental nuclear physics in JINR during 2006-2008 by the Laboratory of Information Technologies	Gh. Adam	Programme Advisory Committee for Nuclear Physics of the Joint Institute for Nuclear Research, 23-rd Meeting, November 7-8, (2005)	TPD
193.	Romanian experience in RODOS PV6.0 utilisation	D. Slavnicu, D. Gheorghiu	Project EURANOS, RODOS Users Group Meeting, Munchen, Germany, Febr.28 - Martie 01, (2005)	LEPD
194.	Metallic clusters	L. C. Cune	Quantum Properties of Nano Structures, Jyvaskyla, Finland, October (2005)	TPD
195.	The CMS tracker inner barrel silicon microstrip module: construction and test	A.Tricomi et al	RD05 7th International Conference on Large Scale Applications and Radiation Hardness of Semiconductor Detectors, Florence, 5-7 October (2005)	720
196.	Max Planck on true and false problems in physics and religion	G. Stratan	Science and Orthodoxy, a Necessary Dialogue, International Conference, Bucharest &Constanta 22-26 Oct (2005)	TPD
197.	CA-420-X type with radioactive waste	Gh. Dogaru	SIEN (2005), Bucharest, Romania	DMDR
198.	Centre of implementation of radiation technology in Romania	C.C. Ponta	Status and Prospects of radiation Processing in Europe, Poceed. of the Coord. Meeting of the TC RER/8/010, held at INCT, Warsaw, Poland, IAEA, pg.103 – 105, (2005)	IRASM
199.	Evaluation by NOx-CO photochemical model of ozone concentration in air in the town of Pitesti	S. L. Badea	Student Paper Session, Faculty of Chemistry and Chemical Engineering, Babes- Bolyai Univ., Cluj Napoca, April 8-10, 2005	DDR
200.	Structure-persistence-toxicity relation for persistent organic pollutants in the Danube basin	Silviu L. Badea	Student Paper Session, Faculty of Chemistry and Chemical Engineering, Babes- Bolyai Univ., Cluj Napoca, April 8-10, 2005	DDR
201.	Nuclear superfluidity in the crust of neutron stars	N. Sandulescu	Summer School: Exotic Nuclei and Nuclear/Particle Astrophysics, Mamaia, June (2005)	TPD
202.	Irradiation conservation technology applied to the restoration of Bucharest AMAN and SEVEREANU art museums	C. C. Ponta, R. Georgescu and E. Bratu	Symposium on "Products and technologies for the protection of national heritage objects against biological damage" European Center of Culture Sinaia, Nov. 10 – 12, 2005	IRASM
203.	Technological irradiation in support of the medical field	C.C. Ponta	Symposium on "Sustainable development and the peaceful use of nuclear energy" NUCINFO'-2005, Caciulata, 8 – 9 December 2005	IRASM
204.	Therapy by thermal neutron capture by B-10	A. Vasilescu	Symposium on "Sustainable development and the peaceful use of nuclear energy" NUCINFO'-2005, Caciulata, 8 – 9 December 2005	ANPD
205.	Quantitative vulnerability assessment of critical infrastructures: watching for hidden faults	A.Gheorghe, D.Vamanu	Task Force G8 Meeting on Critical Energy Infrastructures, Brussels, November (2005).	LEPD
206.	Evaluation by quantum-chemical methods of radiolysis stability for macromolecular structures	C. Postolache, L. Matei	The 11-th ICSI Conference " Progress in Cryogenics and Isotopes Separation" 12-14 octombrie, (2005) Calimanesti-Caciulata	RPC
207.	Evaluation of homolytic dissociation eneries in organic compounds by quantum mechanical methods	C. Postolache, L. Matei	The 11-th ICSI Conference " Progress in Cryogenics and Isotopes Separation" 12-14 octombrie, (2005) Calimanesti-Caciulata	RPC

208.	Radiolysis of polytetra-fluoroethyilene and polystyrene catalytic sup orts in presence of tritiated water	C. Postolache, L. Matei, V. Serban	The 11-th ICSI Conference " Progress in Cryogenics and Isotopes Separation" 12-14 octombrie, (2005) Calimanesti-Caciulata	RPC
209.	Determination of unfixed tritium surface contamination on epoxydic resins ALOREX type	C. Postolache, L. Matei, V Fugaru, V. Serban	The 11-th ICSI Conference "Progress in Criogenics and Isotopes Separation" 12-14 octombrie, (2005) Calimanesti-Caciulata	RPC
210.	The use of stable isotope analytical technique in the environmental studies	S. L. Badea	The 11th International ICIT Conference "Progress in Cryogenics and Isotopes Separation-(2005)", Calimanesti-Caciulata, 12-14 October (2005)	DDR
211.	Radiolytic oxidation of the immunogenic conjugate testosterone-3-carboxymethyloxim-bovine serum albumin and rabbit antitestosterone antiserum	M. A. Acasandrei, I. M. Petcu, M. Radu, D. Gazdaru, A. Popescu, I. Dorobantu	The 14th National Conference on Physics, Bucharest, Romania, September 13-17, (2005)	LEPD
212.	Förster Resonance Energy Transfer (FRET) in the study of membrane rafts	M. A. Acasandrei, R. E. Dale, M. J. vandeVen, M. Ameloot	The 14th National Conference on Physics, Bucharest, September 13-17, (2005)	LEPD
213.	Excited levels scheme of 69As nucleus	T. Badica, I.V. Popescu, I. Stefanescu, V. Cojocaru, R. Dumitrescu, O. Guguianu, O. Oros, M. Petre, A. Gheboianu	The 6th International Balkan Workshop on Applied Physics, Constanta, July 5-7, (2005), Romania.	NPD
214.	Comparative study of gamma-ray, neutron and electron beam irradiated index-guided laser diodes	D. Sporea, R. Sporea, C. Oproiu, I. Vata	The 8th European Conference on Radiation and Its Effects on Components and Systems Cap d'Agde, France	Cyclotron
215.	Dirac operators on Kahlerian manifolds	I. I. Cotaescu, M. Visinescu	The BW(2005) Workshop "Mathematical, Theoretical and Phenomenological Challenges beyond the standard model", Vrnjacka Banja, Serbia and Muntenegru, 19-23 May (2005)	TPD
216.	Environmental monitoring in the decommissioning activities of the nuclear research Reactor VVR-S from Bucharest-Magurele	S. L. Badea, V. Stefan, I. Iorga, R. O.Dumitru	The International Conference on Sustainable Energy-CSE (2005), 7-9 July (2005), University Transylvania of Brasov, Romania	DDR
217.	Gravitational and axial anomalies for generalized Euclidean Taub-NUT metrics	M. Visinescu	The SQS'05 Workshop "Supersymmetries and quantum symmetries", JINR, Dubna (2005)	TPD
218.	Combined cytotoxic effects of ionizing radiation and magnetic field in yeasts and human lymphocytes	I. Petcu, M. A. Acasandrei, D. Savu, M. Radu, I. Prutu, T. Vassu-Dimov	The VIIIth Romanian Biophysics Conference "Advanced Biomaterials and Biophysical Techniques", Iasi, Romania, May 26-28, (2005)	LEPD
219.	FRET and the detection of membrane rafts	M. A. Acasandrei, R. E. Dale, M. J. vandeVen, M. Ameloot	The VIIIth Romanian Biophysics Conference "Advanced Biomaterials and Biophysical Techniques", Iasi, Romania, May 26-28, (2005)	LEPD
220.	Ricci flow equations in two dimensions and the linearization approach	M. Visinescu	TIM'05 Workshop, Timisoara (2005)	TPD
221.	ALICE-TRD production @ NIPNE	M. Petrovici	Transition Radiation Detectors - Present & Future, ALICE and CBM Collaborations - International Research Workshop - Cheile Gradistei, Romania, September 24-28,(2005)	NPD

222.	High counting rate TRD. Present status and perspectives	M. Petris	Transition Radiation Detectors - Present & Future, ALICE and CBM Collaborations} - International Research Workshop - Cheile Gradistei, Romania, September 24-28,(2005)	NPD
223.	Gamma spectrometry and neutron activation analysis used in pharmaceutical products quality control	C. Cimpeanu	Workshop "Applications of the Ionising Radiation to Industry, Health and environment"-IWIRad-(2005)	RPC
224.	ALICE TRD front-end electronics	V.Catanescu	Workshop CERN-IFIN-HH, Bucuresti 1 Iunie (2005)	ANPD
225.	Accreditation, partici-pation in international ILC-PT Exercises	M. Sahagia	Workshop IWIRAD, Bucuresti, 20-21.06.(2005)	RPC
226.	Role of LMR in organizing National ILC Exercises	A.C. Razdolescu	Workshop IWIRAD, Bucurestii, 20-21.06.(2005)	RPC
227.	Isospin effects on fragmentation mechanisms	M. Colonna, V. Baran, M. Di Toro, R. Lionti	Workshop on "Reaction Mechanisms for Rare Isotope Beams", SUA, (2005),	TPD
228.	Investigating the 2nd knee: The Kascade-Grande Experiment	A. Haungs, W.D. Apel, F. Badea, K. Bekk, A. Bercuci, M. Bertaina, J. Blumer, H. Bozdog, I.M. Brancus, M. Bruggemann, Buchholz, A. Chiavassa, K. Daumiller, F. Di Pierro, Doll, R. Engel, J. Engler, L. Ghia, H.J. Gils, R. Glasstetter, C. Grupen, D. Heck, J.R. Horandel, K. H. Kampert, H.O. Klages, Y. Kolotaev, G. Maier, H.J. Mathes, H.J. Mayer, J. Milke, B. Mitrica, C. Morello, M. Muller, G. Navarra, R. Obenland, J. Oehlschlager, S. Ostapchenko, S. Over, M. Petcu, T. Pierog, S. Plewnia, H. Rebel, A. Risse, M. Roth, H. Schieler, O. Sima, M. Stumpert, G. Toma, G.C. Trinchero, H. Ulrich, S. Valchierotti, J. van Buren, W. Walkowiak, A. Weindl, J. Wochele, J. Zabierowski, S Zagromski, D. Zimmermann	Workshop on Physics at the End of the Galactic Cosmic Ray Spectrum, Aspen, Colorado, 26-30 Apr (2005)	NPD
229.	Neutron stars crust: superfluid properties, collective excitations and specific heat	N. Sandulescu	Workshop: "Many-Body Physics of Neutron Stars", IPN-Orsay, April (2005)	TPD
230.	Shell model in complex energy plane	N. Sandulescu	Workshop: "Shell Model", CEA- Saclay, June (2005)	TPD
231.	Self-consistent continuum QRPA and collective excitations in dripline nuclei	N. Sandulescu	Workshop: Collective excitations in mean field theories SPhN- Saclay, January (2005)	TPD
232.	Screening effects on pairing in neutron matter	N. Sandulescu	Workshop: Recent developments in mean-field methods and in the treatment of pairing, CEA-Saclay	TPD
233.	Fragment-fragment correlation in the nuclear reaction 124Sn+64Ni at 35 AMeV with CHIMERA	C. Maiolino and the CHIMERA-REVERSE collaboration, I. Berceanu, M. Petrovici, A. Pop, V. Simion	XLIII International Winter Meeting on Nuclear Physics, Bormio, Italy, March 13-20, (2005),	NPD
234.	Optical tweezers calibration using dielectrophoresis	D. Pietreanu, E. Papagiakoumou, M. Radu, T. Savopol, M. Makropoulou, A. Serafetinides	XVIII International Symposium on Bioelectrochemistry and Bioenergetics (Bioelectrochemistry-(2005))	LEPD
235.	The electro-orientation of retinal photoreceptors as a technique to study the cell electric properties	M. Radu, M. Ionescu, N. Irimescu, K. Iliescu, R. Pologea-Moraru, E. Kovacs	XVIII International Symposium on Bioelectrochemistry and Bioenergetics (Bioelectrochemistry-(2005))	LEPD
236.	A holomorphic representation of the semidirect sum of symplectic and Heisenberg Lie algebras	S. Berceanu	XXIV Workshop on Geometric Methods in Physics, 26 June - 2 July (2005), Bialowieza, Poland	TPD

237.	Isoscaling in neck fragmentation	E. De Filippo and the CHIMERA-REVERSE collaboration, I. Berceanu, M. Petrovici, A. Pop	XXIX Mazurian Lakes Conference on Physics "Nuclear Physics and the Fundamental Processes", Piaski, Poland, August 30 - September 6, (2005)	NPD
238.	Isospin effects studied with the CHIMERA detector at 35 MeV/nucleon	R. Planeta and the CHIMERA-REVERSE collaboration, I. Berceanu, M. Petrovici, A. Pop	XXIX Mazurian Lakes Conference on Physics "Nuclear Physics and the Fundamental Processes", Piaski, Poland, August 30 - September 6 , (2005)	NPD

Appendix 3

HORIA HULUBEI NATIONAL INSTITUTE OF R & D IN PHYSICS AND NUCLEAR ENGINEERING
(IFIN-HH)
ORGANIZATION CHART