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### Symposium Program

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**14<sup>th</sup> SYMPOSIUM OF THE HELLENIC NUCLEAR PHYSICS SOCIETY**  
**National Technical University of Athens, May 21-22, 2004**  
**Administration Building – Zografou Campus**  
**Organizing Committee: R.Vlastou, C.T. Papadopoulos, M. Kokkoris**

**SCIENTIFIC PROGRAMME**

**Friday 21 May 2004**

**08:30-09:00**    **Registration**

**09:00-09:20**    **Opening of the Symposium**

- 09:00-09:05    Opening Address by the Secretary General of GSRT(to be confirmed)
- 09:05-09:10    Address by the Rector and Vice Rector of NTUA
- 09:10-09:20    Welcoming remarks by the President of the HNPS and the Organizing Committee

**09:20-11:00**    **SESSION I**    Chair: **C.A. Kalfas** (NCSR “Demokritos”)

- 09:20-09:35    **G. Lalazisis** (T.U. Munchen and U. Thessaloniki)  
*Isospin properties of covariant density functional theory*
- 09:35-09:50    **D. Bonatsos** (NCSR “Demokritos”)  
*Davidson potential in the frameworks of the E(5) and X(5) critical point symmetries*
- 09:50-10:05    **S. Harissopoulos** (NCSR “Demokritos”)  
*<sup>102</sup>Pd: The best E(5) dynamical symmetry paradigm*
- 10:05-10:20    **P. Demetriou** (U.L. Brussels)  
*Global Nuclear predictions for astrophysics applications*
- 10:20-10:35    **S. Karataglidis** (U. Melbourne)  
*Is friction responsible for the reduction of fusion rates far below the Coulomb barrier?*
- 10:35-10:55    **G. Münzenberg** (GSI, Darmstadt)  
*FAIR: The Future European Facility for Antiproton and Ion Research at GSI Darmstadt*

**11:00-11:30**    **Coffee Break**

**11:30-13:25**    **SESSION II**    Chair: **P.A. Assimakopoulos** (U. Ioannina)

- 11:30-11:50    **R. Grötzschel** (Fz. Rossendorf)  
*The Rossendorf Ion Beam Laboratory*
- 11:50-12:10    **H.-W. Becker**, (U. Bochum)  
*Ion Beam Analysis for the Investigation of Diffusion Processes*
- 12:10-12:25    **P. Misaelides** (U. Thessaloniki)  
*Characterization and Investigation of Protective Coatings on Steel Samples Prepared by Plasma Detonation Techniques*
- 12:25-12:40    **N. Patronis** (U. Ioannina)  
*Exclusive breakup of <sup>6</sup>Li on a <sup>28</sup>Si target at near-barrier energies*
- 12:40-12:55    **N.G. Nicolis** (University of Ioannina)  
*Simulation of fragment correlations in the disintegration of non-compact nuclear configurations*
- 12:55-13:10    **D. Lenis** (NCSR “Demokritos”)  
*Z(5): critical point symmetry for the prolate to oblate shape phase transition*
- 13:10-13:25    **T. Liolios** (H.M. Navy Academy)  
*Screened Alfa Decay in Dense Astrophysical Plasmas and Magnetars*

**13:30-16:00    Lunch and Coffee Break**

**15:00-16:00    SESSION III    Poster Session**

**C. Tsabaris** (National Centre for Marine Research)

*Submersible  $\gamma$ -ray monitoring in the marine environment*

**K. Eleutheriadis** (NCSR “Demokritos”)

*Evaluation of a mean attachment coefficient for  $^{211}\text{Pb}$  on polydisperse aerosol*

**H. Florou** (NCSR “Demokritos”)

*Determination of radionuclides in «Mytilus Galloprovincialis» by alpha and gamma spectroscopy*

**S. Athanassopoulos** (U. Athens)

*One and two proton separation energies from nuclear mass systematics using neural networks*

**M. Axiotis** (L.N. Legnaro and NCSR “Demokritos”)

*Decay properties of high spin states in  $^{52}\text{Mn}$  and  $^{52}\text{Fe}$*

**D. Patiris** (U. Ioannina)

*Radon measurements in bottled waters in Greece*

**D. Patiris** (U. Ioannina)

*Radon Gas profiles and exposure estimates in the Perama Cave, Greece*

**Ch. Zarkadas** (NCSR “Demokritos”)

*A portable semi – micro XRF spectrometer for archaeometrical studies*

**A. Ioannidou** (U. Thessaloniki)

*Temporal changes of  $^7\text{Be}$  and  $^{210}\text{Pb}$  concentrations in surface air at temperate Latitudes ( $40^\circ\text{N}$ )*

**16:00-15:35    SESSION IV    Chair: C. Papanikolas (U. Athens)**

**16:00-16:20    D. Balabanski** (U. Camerino and Sofia)

*Study of Magnetic Rotation in  $^{193}\text{Pb}$*

**16:20-16:35    R. Vlastou** (NTU Athens)

*The Neutron facility at NCSR “Demokritos” – Implementation in the case of the  $^{232}\text{Th}(n,2n)$  and  $^{241}\text{Am}(n,2n)$  reactions*

**16:35-16:50    G. Perdikakis** (NCSR “Demokritos” and NTU Athens)

*Measurements of the  $^{241}\text{Am}(n,2n)$  cross section by the activation method*

**16:50-17:05    S. Galanopoulos** (NCSR “Demokritos”)

*Proton capture cross section measurements in the Sr isotopes relevant to p process nucleosynthesis*

**17:05-17:20    A. Lagoyannis** (NCSR “Demokritos”)

*Proton-capture reaction cross sections relevant to the p process: Some first results for the Se isotopes*

**17:20-17:35    A. Spyrou** (NCSR “Demokritos”)

*Searching for global  $\alpha$ -particle-nucleus potential for astrophysical applications*

**17:40-19:00    General Assembly of the Hellenic Nuclear Physics Society - Elections**

**21:00    Conference Dinner at the ‘Taverna ATTALOS’, at Plaka**

## Saturday 22 May 2004

### 09:00-10:45 **SESSION V** Chair: **M. Grypeos** (U. Thessaloniki)

- 09:00-09:15 **Ch. Moustakidis and S. Massen** (U. Thessaloniki)  
*The dependence of information entropy of uniform Fermi systems on correlations and thermal effects*
- 09:15-09:30 **Th. Petridou** (U. Thessaloniki)  
*Searches for the  $\Sigma$ -nucleus potential*
- 09:30-09:45 **T. Gaitanos** (INFN Catania)  
*The Nuclear Equation of State (EoS) in Heavy Ion Collisions*
- 09:45-10:00 **D. Petrellis** (NCSR "Demokritos")  
*Variational procedure leading from Davidson potentials to the E(5) and X(5) critical point symmetries*
- 10:00-10:15 **M. Zamani-Valassiadou** (U. Thessaloniki)  
*Energy Calibration of Neutron Proportional Counters*
- 10:15-10:30 **M. Fragopoulou** (U. Thessaloniki)  
*On the Behavior of Spallation Neutrons from Extended Pb Targets plus Moderator: A Comparison between SSNTDs Measurements and Theoretical Calculations*
- 10:30-10:45 **B.A. Kotsos** (TEI Lamia)  
*A simplified analytic treatment of shell-effects in metal clusters*

### 10:45-11:30 **Coffee Break**

### 11:30-13:15 **SESSION VI** Chair: **S. Simopoulos** (NTU Athens)

- 11:30-11:45 **I. Liritzis and Th. Ganetsos** (U. Aegean and U. Athens)  
*Dating of Obsidian Tools by Water Diffusion*
- 11:45-12:00 **N. Evangelioi** (NCSR, "Demokritos")  
*Determination of  $^{137}\text{Cs}$  in Sea Water Samples Using Gamma Spectrometry*
- 12:00-12:15 **G. Trabidou** (NCSR, "Demokritos")  
*Distribution and Behavior of Natural Radionuclides in Rocks and Soils of an Insular Area: The Case of the Radioactive Springs in the Island of Ikaria, Aegean Sea*
- 12:15-12:30 **E. Gazis** (NTU Athens)  
*Study of the Radiological Protection Monitoring in the Working Area of an Office Building Under Construction in Athens*
- 12:30-12:45 **P. Koulouridakis** (T.U. of Crete)  
*NAFION Membrane Treatment for Low Level Lead Determination by TXRF*
- 12:45-13:00 **M.J. Anagnostakis** (NTU Athens)  
*Radioactive contamination as a result of an  $^{241}\text{Am}$  lightning rod failure*
- 13:00-13:15 **N. Giokaris** (U. Athens)  
*The use of antiprotons for imaging and radiotherapy: A progress report*

### 13:15-15:30 **Lunch and Coffee Break**

**15:30-17:15 SESSION VII Chair: S. Kossionides (NCSR “Demokritos”)**

- 15:30-15:45 **E. Mavromatis** (U. Athens)  
*Topics from the theoretical study of nuclei far from stability*
- 15:45-16:00 **C. Vellidis** (U. Athens)  
*Radiation Tail in  $(e,e'p)$  Reactions and Corrections to Experimental Data*
- 16:00-16:15 **C.A.Efthimiou** (U. Thessaloniki)  
*The Role of the  $\lambda$ -Effective Mass in a phenomenological Analysis of the  $\lambda$ -Energy in Hypernuclei*
- 16:15-16:30 **T. S. Kosmas** (U. Ioannina)  
*Microscopic calculation of the LSP Detection Rates for the  $^{71}\text{Ga}$ ,  $^{73}\text{Ge}$  and  $^{127}\text{I}$  Dark Matter Detectors*
- 16:30-16:45 **L. Kaliambos** (Institute of Larissa)  
*Charge Distributions in Nucleons able to Create the Nuclear Structure*
- 16:45-17:00 **P. Paschalis** (U. Athens)  
*Design and Development of a Position-Sensitive  $\gamma$ -Camera for SPECT*
- 17:00-17:15 **A. Panagiotou** (U. Athens)  
*Heavy-Ion Physics at CMS-CERN*
- 17:15-17:30 **G. Anagnostatos** (NCSR, “Demokritos”)  
*Are the tetra neutron and the hexa neutron particle stable?*

**Closing of the Symposium**