Core monitoring, Reactor noise, Spent Fuel Reactor, Thorium utilisation and alternative energy sources.

The concluding session of the ARP-2017 was held on 9th December, 2017. Dr. H.P. Gupta, Ex-RRF, BARC, summarised on the "Future Directions in Reactor Physics". The symposium concluded with a panel discussion chaired by Shri S. A. Bharadwaj, Chairman, AERB on the way ahead for physics of reactors. The delegates participated actively and had fruitful scientific interactions. It was recommended to assimilate the analysis capabilities of the various codes developed in DAE with emphasis on qualification, detailed documentation and benchmarking and to have validated nuclear physics data nuclear data libraries for different reactor spectrums.

DAE-BRNS Symposium on Nuclear Physics-2017

The 62nd DAE - BRNS Symposium on Nuclear Physics was held at Thapar Institute of Engineering and Technology (TIET) , Patiala, during December 19-24, 2017. The primary purposes of this series of symposia are (i) to discuss the research work done in these fields in India and abroad ; (ii) to enhance collaborative activities in the field of Nuclear Physics between R&D units of DAE and Universities; and (iii) to contribute to human resource development activity. Concepts and techniques of nuclear physics have evolved through a great deal of experimental and theoretical research. To give the participants a flavour of state of the art in the still thriving field, Invited Talks by experts from leading laboratories of the world were presented. Contributory papers were also presented which were selected after peer review from submissions from various centres of research in India; from DAE as well as university systems. One of the outcomes of the discussions held is an enhanced collaborative activity. It is heartening to see an increasing number of research scholars attending the symposia from year to year. This year, over 200 research scholars attended the symposium and the total number of participants was over 400 including a few from abroad. One of the main themes of the Symposium was Super Heavy Element Research. A pre-symposium orientation programme on this topic was held on 19th Dec. 2017 for the benefit of beginners .

A formal Inaugural Function was held on 20th Dec. 2017 which was presided by Prof. Prakash Gopalan, Director,TIET. The Inaugural Address was given by Prof. R. G. Pillay, Senior Professor, TIFR and the Keynote address was given by Prof. Amit Roy, Former Director- IUAC, New Delhi. Dr. A. Saxena, Head, Nuclear Physics Division, BARC, and Chairman, National Organising Committee, welcomed the delegates of the symposium and Dr. Bency John, Nuclear Physics Division, BARC, and Convener, National Organising Committee, gave an introduction to this year's symposium. Dr. N. K. Sahoo, Associate Director, Physics Group, BARC and Prof. O.P.Pandey, Dean of Research, TIET, also addressed the audience. Prof. Manoj K. Sharma, Convener, Local Organising Committee, and Dr. V. Jha, Secretary, National Organising Committee, proposed the vote of thanks during the inaugural and the concluding sessions of the symposium, respectively.

There was a special evening talk given by a distinguished speaker, Prof. R. Rajaraman, JNU, New Delhi, on the subject "Pauli Principle in the Interior of Pulsars and Fundamental Issues of Elementarity". There was a special session to select ' Prof. C. V. K. Baba Best Thesis Presentation Award instituted by Indian Physics Association and Dr. F. Zaidi of Aligarh Muslim University won the Award for her thesis titled "Nuclear medium effects in electromagnetic and weak structure functions at moderate Q^2". In addition, ten Best Poster Presentation Awards instituted by the National Organising Committee were presented during the Concluding Session of the Symposium held on 24th Dec. 2017. Dr. D. C. Biswas, Nuclear Physics Division, BARC, summarised all the scientific presentations of the symposium in the Concluding Session.

62nd DAE Solid State Physics Symposium 2017

The annual DAE - Solid State Physics Symposium (DAE SSPS 2017) was held at the DAE Convention Centre, Anushaktinagar, Mumbai, during December 26-30, 2017. This symposium is fully sponsored by Board of Research in Nuclear Sciences (BRNS), Department of Atomic Energy (DAE) and is held annually at different venues with a broad aim to bring together researchers working in various aspects of Condensed Matter Physics. About 1000 scientists, mostly from India and a few from abroad, participated in this symposium, which was 62nd in the series. Prof. Amitabh Das, Solid State Physics Division, BARC, and Convener, DAE-SSPS 2017, welcomed the delegates of the symposium and gave an introduction to the symposium, in the inaugural session. The symposium was inaugurated by Prof. N.K. Sahoo, Assoc. Director, Physics Group, BARC. Prof. P.R. Vasudeva Rao, Vice Chancellor, HBNI and Dr. A. K. Sinha, Director, UGC-DAE Consortium for Scientific Research, Indore, in their address as chief guests of the symposium highlighted the importance of solid state physics research. Dr. D. Bhattacharyya, Chairman, Local Organising Committee addressed the delegates. Dr. Surendra Singh, Scientific Secretary, 62nd DAE-SSPS 2017, proposed the vote of thanks.

Inaugural Session of the 62nd DAE SSPS 2017: Standing on the dais from right to left are: Dr. Amitabh Das (Convener), Prof. N. K. Sahoo (AD, Physics Group, BARC), Prof. P R Vasudeva Rao (VC, HBNI, Mumbai), Prof. A. K. Sinha (Director, UGC-DAE Consortium for Scientific Research, Indore) Dr. D. Bhattacharyya (Chairman, Local Organising Committee), Dr. Surendra Singh (Scientific Secretary)

The technical session of this symposium was divided into invited talks, contributory papers in the form of oral and poster presentations, presentations by Ph.D. thesis candidates and Young Achiever Award (YAA) nominees. This year, there have been very enthusiastic responses in terms of the number of papers submitted. We had received 1402 contributory papers from which 840 papers were chosen for presentation after a due review process by experts. In this symposium, 2 plenary talks, 49 invited talks, 24 oral presentations, and 800 posters were presented. The topics covered in the symposium were (a) Phase transitions (b) Soft Condensed Matter including Biological Systems (c) Nano-materials (d) Experimental Techniques and Devices (e) Glasses and Amorphous Systems (f) Surfaces, Interfaces and Thin Films (g) Electronic Structures and Phonons (h) Single Crystals and Characterization (I) Transport Properties (J) Semionductor Physics (K) Superconductivity, Magnetism and Spintronics (l) Energy Materials. There were 8 thematic seminars on (i) Energy Materials (ii) Superconductivity (iii) Applied Physics (iv) Nanomaterials (v) Condensed Matter-Theory (vi) Science using Neutron and Synchrotron facilities (vii) Functional / Nanomaterials (viii) Soft Condensed Matter.

Two outstanding plenary talks were delivered on Organic-inorganic hybrid ferroelectric perovskite materials for photovoltaic applications: The role of the polar field and other related issues by Prof. D. D. Sarma, Indian Institute of Science, Bangalore, and Discovery of superconductivity of very pure single crystal of Bismuth by Prof. S. Ramakrishnan, Tata Institute of Fundamental Research, Mumbai. The evening talks were delivered by Prof. G. K. Dey, Former Director, Material Group, BARC, Mumbai on Viewing biological and non-biological matter through the Transmission Electron Microscope and by Prof. S. P. Kale, Former Associate Director, Bioscience Group, BARC on Enviro - Economics of Our Life.

A panel of judges selected 3 Young achiever awards out of 9 participants. Another Panel of judges selected 3 best Ph.D. thesis awards out of 30 participants. Another panel of judges selected 24 best poster awards out of 800 posters. In the concluding session, YAA awards and Ph. D. thesis award were given away by Prof. N. K. Sahoo (Assoc. Director, Physics Group, BARC) and Prof. S. M. Yusuf (Head, Solid State Physics Division, BARC). The best poster awards were distributed by Prof. Vaishali Bambole (Head Physics Department, University of Mumbai), Prof. M. Senthil Kumar (IITB, Mumbai), and Prof. P. K. Mandal (Univ. North Bengal, Siliguri, WB). The best thesis award presented to Ms. Nasrin Banu titled "Structure, Magnetic Properties and their Ion Irradiation Induced Modifications in Thin Films and Multilayers" was sponsored by the Indian Physics Association (IPA) as IPA's Anil K. and Bharati Bhatnagar Best Ph.D. Thesis Award in Solid State Physics.