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CONFERENCE REPORT

X NATIONAL SYMPOSIUM ON SOLID STATE NUCLEAR TRACK DETECTORS

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Continuing the tradition of biennial symposia under the auspices of the Nuclear Track Society of India (NTSI), the X National Symposium on Solid State Nuclear Track Detectors (SSNTD-96) was held at Kurukshetra University, Kurukshetra, India, from October 3–5, 1996. Besides about 120 participants from various universities, academic institutions and R & D organisations from all over India, three eminent scientists—Prof. Shi-Lun Guo from the China Institute of Atomic Energy, Beijing, and Dr I. Hunyadi and Dr J. Hakl from the Institute of Nuclear Research of the Hungarian Academy of Sciences, Debrecen, also graced the occasion. The scientific discussions of the symposium included 14 invited talks and 57 contributed papers, covering most of the important aspects of SSNTDs. All the invited talks and contributed papers were made available to the participants in the form of a preprint volume at the beginning of the symposium, in order to make the discussions more fruitful.

The symposium was inaugurated by Prof. Shi-Lun Guo. In his inaugural address he praised the role of Indian scientists in their endeavours to establish research involving the use of SSNTDs at national as well as international levels. Prof. Guo stressed the need for more interactive global collaborations between scientists in order to harvest the fruits of this important area of research. He highlighted the importance of SSNTDs and disclosed that more than 30 universities and research institutions in China were pursuing research in this area. Dr R. H. Iyer, President of the Nuclear Track Society of India, highlighted the role of the society in bringing together Indian scientists working on SSNTDs and in popularising this simple, versatile and inexpensive technique among students, teachers and researchers who are relatively new to this area, by organising national workshops in various parts of the country.

Dr M. L. Ranga, vice-chancellor of Kurukshetra University, paid tribute to the late Prof. K. K. Nagpaul and the late Prof. M. M. Dhawan for their pioneering contributions. He remembered Prof. Nagpaul and Prof. A. P. Sharma for establishing the research groups in the Department of Physics, Kurukshetra University, and appreciated the sincere efforts of their students in carrying on research in the areas established by them. Prof. R. M. P. Jaiswal, chairman, Department of Physics, whilst welcoming the participants, highlighted the activities of the department in the last couple of years. Dr Shyam Kumar, convenor of the SSNTD-96 symposium, proposed a vote of thanks.

In the section dealing with Fission Track Dating, there were two invited talks, first by Prof. Nand Lal, Department of Geophysics, Kurukshetra University, on "Applications of Fission Track Thermochronology in Sedimentary Basins" and second by Prof. A. K. Jain, Department of Earth Sciences, University of Roorkee, on "Application of F-T Technique in Exhumation and Related Process". In addition, there were five contributed papers in this section.

Prof. Guo gave an invited talk on "Neutron Yield and Energy Spectrum from Relativistic Heavy Ion Interactions" in the section on Dosimetric Measurements. Five contributed papers in this section were also presented.

In the section on Nuclear Track Filters there were two invited lectures; first by Dr S. K. Chakarvarti, Department of Applied Physics, Regional Engineering College, Kurukshetra, on "Membrane Based Template Synthesis of Nano-Microstructures". He described in detail the usefulness of the template synthesis technique, one of the most important technological applications of SSNTDs, while also reviewing other available methods. The second invited lecture in this section was given by Dr Iyer, Radiochemistry Division, Bhabha Atomic Research Centre, Bombay, on the growing significance of applications of track-etched

membranes in separation sciences. There were five contributed papers in this section.

The section dealing with Nuclear Reactions and Cosmic Rays had two invited talks. In the first lecture, Dr J. S. Yadav, Tata Institute of Fundamental Research, Bombay, presented some new findings in the study of low energy cosmic rays using etch track detectors from the Indian Cosmic Ray Experiment "Anuradha" aboard Space Shuttle Spacelab 3. The second lecture, by Prof. D. P. Bhattacharyya, Dept. of Theoretical Physics, Indian Association for the Cultivation of Science, Jadavpur, Calcutta, was on "An Estimation of Muon Energy Spectrum Emitted by High Energy Gamma Rays from the Crab". In addition there were eleven contributed papers.

The section on Radon Mapping had four invited lectures. Dr Hakl, Institute of Nuclear Research of the Hungarian Academy of Sciences, Debrecen, gave an invited talk on the study of morphology-linked transport phenomena in a fractured porous environment. He also presented an international review of radon measurements in caves. Dr T. V. Ramachandran, Environmental Assessment Division, BARC, Bombay, discussed the present status of SSNTD applications in indoor radon/thoron measurements. Prof. Surinder Singh, Department of Physics, G. N. D. University, Amritsar, gave an invited lecture on "Environmental Radon Pollution Studies using SSNTDs", while Dr A. M. Bhagwat, Radiation Safety Systems Division, BARC, Bombay, discussed some challenges in calibration of passive dosimeters employing SSNTDs for measurement of radon/thoron and their daughter products. There were twelve contributed papers in this section, mostly dealing with radon measurements and related aspects.

In the Trace Analysis section, the first invited lecture was given by Dr Hunyadi, Institute of Nuclear Research of Hungarian Academy of Sciences, Debrecen. She discussed the determination of radium content in thermal waters and micromapping of boron and nitrogen in plant tissues. She explained how neutron capture-charged particle radiography can be used as a very delicate method to reveal the overall concentrations and distribution patterns of nitrogen and boron in organs, tissues and cells, to provide a deeper insight into nitrogen and boron plant metabolism. Prof. H. S. Virk, Department of Physics, G. N. D. University, Amritsar, presented a review of SSNTD research in India. In addition there were eight contributed papers in this section.

In the last section on fundamental aspects and emerging applications of SSNTDs, Prof. A. K. Ganguly, Department of Physics, Calcutta University, reviewed some of the recent applications of SSNTDs in resolving problems in some areas of nuclear physics. This section had eleven contributed papers.

The concluding session marked the culmination of hectic research activity spread over 3 days. Dr Hunyadi formally graced the occasion in the chair. Dr Iyer was praised for his monumental contribution to the advancement of an organised research activity into SSNTDs in India. The academic proceedings of the various sections were reviewed by Dr Chakarvarti. Dr I. Hunyadi expressed satisfaction over the academic contents and discussions during the symposium. She overwhelmingly praised the arrangements and complimented the organisers for meticulous planning and execution. The session concluded with thanks by Prof. Jaiswal, chairman of the organising committee. Financial assistance from UGC, DST, DAE, AERB; Govt. of India is gratefully acknowledged.