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Notes and news

India Marches ahead in SSNTD Research

The era of Solid State Nuclear Track Detectors (SSNTD) began in 1963 when Fleischer, Price and Walker developed chemical etching technique to reveal fission fragment tracks in minerals. During the last 25 years, SSNTD have invaded the research laboratories all over the world. They find applications in such diverse fields as geochronology, nuclear physics, space science, nuclear medicine and biology, radiation dosimetry, reactor physics and exploration geophysics.

SSNTD have a lot of potential for exploitation in Third World countries. Perhaps, this is the only technique which does not need any sophisticated equipment in some of its inter-disciplinary applications. An example from my personal experience will be useful to illustrate this point.

SSNTD research was originally confined to TIFR, Bombay in the early sixties. At present, about a dozen active groups are engaged in SSNTD research. The first national level meet was held at BARC, Trombay in March, 1979, through the bold initiative of Dr. R. H. Iyer. Only ten invited papers were presented at this meeting. The greatest achievement of this first national workshop was to identify the active SSNTD groups or individuals and to initiate a dialogue between them for a concerted effort. It was also decided that national level seminar cum workshops will be held every two years to promote the culture of SSNTD in India.

Fifth SSNTD national seminar was organised in March, 1987 at Calcutta. It was a three day meet where SSNTD workers from all over India participated in its deliberations. It was gratifying to note that seventy five abstracts were contributed at this conference, covering almost all areas of SSNTD application, a spectacular progress indeed in less than a decade. The highlight of 5th national seminar was Indian Cosmic Ray Experiment "ANURADHA" and about 10 papers were contributed by Professor Biswas and his co-workers from TIFR, Bombay and PRL, Ahmedabad. However, the largest contribution of 15 abstracts was made by SSNTD group at Guru Nanak Dev University, Amritsar. It was decided to hold the Sixth National Seminar at Gauhati in March, 1989.

To review our progress at SSNTD International Conferences, it is pertinent to remark that Indian participation began with the Tenth International Conference held at Lyon in France in 1979, the year we held our first national workshop at Trombay. India contributed only 5 papers at this meet. There has been a steady growth of Indian Contribution and participation at the successive International SSNTD conferences. We contributed 8 papers at 11th International Conference held at Bristol (U. K.) in 1981, an equal number at the 12th International Conference held at

TABLE 1 : What do they contribute to 14th International Conference on SSNTD, Lahore (Pakistan), April 2-6, 1988

Sl. No.	Country	No. of Papers
1.	Algeria	03
2.	Argentina	01
3.	Australia	02
4.	Bahrain	01
5.	Bangladesh	03
6.	China	12
7.	Coasta Rica	01
8.	Egypt	02
9.	France	10
10.	Germany F. R.	26
11.	Germany D. R.	02
12.	Greece	02
13.	Hungary	04
14.	India	44
15.	Iran	06
16.	Ireland	03
17.	Italy	11
18.	Japan	07
19.	Libya	01
20.	Malaysia	01
21.	Mexico	09
22.	Pakistan	28
23.	Saudi Arabia	03
24.	South Korea	01
25.	Spain	02
26.	Sweden	01
27.	Thiland	01
28.	United Kingdom	11
29.	U. S. A.	06
30.	Yugoslavia	07
	Total	211

Acapulco (Mexico) in 1983, 25 papers at the 13th International Conference held at Rome in 1985 and 44 papers at the 14th SSNTD International Conference held at Lahore in April, 1988. Thirty countries participated at this International meet and a large number of them are Third World countries. It is evident from Table 1 that the potential of SSNTD technique has been realised by developing countries of Asia and Africa. It is a matter of pride that India scored the top position at this International conference on the basis of the number of papers contributed. Again, the largest contribution was made by SSNTD group of Guru Nanak Dev University, Amritsar with nearly two dozen research papers contributed by 16 SSNTD workers. Unfortunately, most of the Indian contributors could not participate at this conference due to visa restrictions.

Some of the interesting features of the 14th International SSNTD Conference held at Lahore are depicted in Table 2. It is evident that the most fundamental question in SSNTD-the nature of latent damage track-still defies solution. The popularity of CR-39 plastic detector with SSNTD workers is ever on the increase though better varieties have also appeared in the market with prohibitive cost. Radon studies and Heavy Ion interactions are the other two areas most popular with SSNTD workers all over the world. Anomalon experiment results presented by Marburg group (W. Germany) was another highlight at this International conference. The 15th International Conference will be hosted by Marburg University in 1990. □

TABLE 2 : Trends in International SSNTD Conference

Sl. No.	Theme	No. of Papers
1.	Methodology	56
2.	Electro-chemical Etching	16
3.	Track Annealing	16
4.	Heavy Ion Reactions	38
5.	Neutron Dosimetry	20
6.	Radon Studies	34
7.	Geological Dating	14
8.	Diverse Applications	17
	Total	211

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