

detailed presentation on the environmental problem of the radon gas exhalations in the Singhbhum shear zone. Mr. Subhash Chander Roy of GSI, presented an in-depth study of the environmental impact evaluation of the mining area of Singrauli Coal fields of U.P. Dr. P.S. Rajasekhar along with Dr. D. Rajasekhara Reddy presented a paper on the impact of beach sand mining on nesting habitats and reproductive success of Olive Ridley Turtle, North coastal Andhra Pradesh. The final session was devoted to Geoscience Education and Prof. T. Ramamohana Rao presented a keynote paper.

As part of the programme, the 1976 batch of M.Sc (Tech) Applied Geology students of A.U. honoured their teachers on 4th December, 2001 in the Geology Department quadrangle.

The Souvenir brought out on the occasion entitled "Yours & Mine" contains messages received from various dignitaries in addition to the Abstracts of the papers presented at the Seminar. The full papers of the seminar were brought out in two volumes. The full paper volumes

are priced at Rs.600 each and can be obtained from Dr. D. Rajasekhara Reddy, Geology Department, Andhra University, Visakhapatnam - 530 003; Email: sekhar dhanireddy@yahoo.com.

The valedictory session of the seminar was held on 7th December afternoon. Sri Priyadarshi Dash, IAS, Vice-Chairman & Managing Director, AP Mineral Development Corporation was the Chief Guest at the valedictory function. Prof. K.V. Subbarao, key organiser of the seminar from IIT, Mumbai summed up the proceedings and presented the recommendations for follow-up action. These included a review of the mineral export and import policies, developing a stronger interface between Economic Geology, Material Sciences and Extractive Metallurgy and recovery of value-adding elements/metals of relevance for new technologies of the 21st millennium.

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NATIONAL SYMPOSIUM ON ADVANCES IN REMOTE SENSING TECHNOLOGY WITH SPECIAL EMPHASIS ON HIGH RESOLUTION IMAGERY

Indian Society of Remote Sensing (ISRS) organised this three-day symposium from the 11th to 13th December 2001, along with its Annual General Body Meet on the 12th December, at Space Application Centre (SAC), ISRO, Ahmedabad. The symposium was hosted by ISRS Ahmedabad Chapter and SAC, Ahmedabad, and sponsored by DOS and RSAC (Bangalore), DAE (New Delhi), Gujarat Council of Science and Technology (Gandhinagar) and Maharashtra RSAC (Nagpur). The symposium provided a platform to deliberate various topics where remote sensing (RS) techniques find application and also on high resolution (HR) optical/microwave sensors, digital image processing, photogrammetry, natural resource survey, disaster management and environment protection.

The fact that RS has become an essential input in many fields of science was amply clear from the 225 extended abstracts received and the participation of over 350 delegates from all over the country representing government institutions, academia, NGOs and even private sector. A large number of these topics were orally presented in three parallel sessions on two days and interactive sessions on three days, besides several presentations on the inaugural

day. Following the welcome address of Dr. A.K.S. Gopalan, Director, SAC, Ahmedabad and the Presidential address of Prof. S.K. Bhan of ISRS, Prof. M.H. Mehta, VC, Gujarat Agriculture University (GAU) highlighted the current pattern of education and research in GAU and explained from his own experience how the technologies had percolated to some of the villages in Gujarat. Dr. George Joseph, Distinguished Professor, ISRO set the tone for the symposium in his scholarly keynote address '*Journey from km to m*'. He traced the country's progress in technology from Bhaskara missions (resolution in terms of kilometres) to the present day one metre resolution imagery through Technology Experiment Satellite (TES) launched in October 2001. The two key presentations on 'RS applications: Indian experience' and 'Earth observation system in disaster management' by Dr. R.R. Navalgund, Director, NRSA summarised the application of space data in diverse fields in India.

The technical papers were categorised under the following themes: 1. RS technique applications and education; 2. HR sensor, data processing and applications; 3. Disaster management; 4. Terrain evaluation; 5. Techniques

for parameter retrieval and image analysis; 6. Agriculture; 7. Environment and Forest; 8. Coastal zone management; 9. Water resources; 10. Satellite oceanography; 11. Landuse and soil; 12. Spatial Data Infrastructure; 13. Marine environment and 14. Image processing technique development. The space application data themes covered both Peninsular and Himalayan regions. It was indeed refreshing to note that a large number of these topics were handled and presented by the younger generation of innovative researchers. Some papers on agriculture dealt with estimation/inventory of crops under production in different seasons, a precursor to *Precision Farming* technique that is prevalent in the West, for promoting the cost-effective high-yield agricultural produce by continuous monitoring of crop-bearing fields by RS. As India is now a force to be reckoned in both space and space-data-application technologies, it is high time that the government organisations applied this technique in a sustained manner to vast agricultural fields all over the country to multiply the crop yield and facilitate food export. In the opinion of this reporter, that would be the fitting reply of Indian scientists to China's export of food grains to India at low cost, following the lifting of restrictions under the new WTO regime. Such an effort would also help in the economic uplift of our farmers, reduce the farm-related indebtedness that has driven some farmers to the desperate limits of even suicide, when crops totally failed.

The papers on environment and forest dwelt on their monitoring by RS and the resultant improvements in their quality. Presentations on the RS inputs to the economic development by promoting local flora of medicinal value in the Himalayan wasteland, bamboo in Mizoram, enhancement of forest cover, and the efforts to improve fauna in the forests were impressive. Integrated terrain evaluation studies by RS, digital image processing and GIS techniques were applied to mapping of watersheds, a geological terrain ensemble, land resources, landuse, landforms, wastelands and in soil science. Image processing and technique development topic covered a variety of themes such as image classification, computation and analysis, modelling, space data infrastructure, and applications to software development. There were also some presentations on National Spatial Data Infrastructure (NSDI) that integrates various thematic information and maps. The theme of Coastal Zone Management dealt with the RS study of

areas in Andaman and Nicobar islands, Lakshadweep, East Coast and Gujarat coast. Satellite oceanography session was equally interesting with papers on ozone depletion, ocean climates, aerosol studies and sea surface temperature. The involvement of RS scientists in tackling the water resources in all parts of the country including Himalayan region was evident from a large number of (thirty) papers presented on that topic.

Under Disaster Management theme, contrary to the expectations, there were not many papers on the Bhuj earthquake; perhaps, the scientific community has pushed that traumatic experience to the back of its mind. Under this theme, there were presentations on the RS studies on forest fires, cyclonic storms, flood damage in Orissa and West Bengal, landslides and Chamoli earthquake, besides general ideas on disaster management. Dr. Harsh K. Gupta, Secretary, DOD delivered the *Vikram Sarabhai Memorial Lecture* on Reservoir-induced Earthquake in Koyna region. A few entrepreneurs made presentations on their products, services and solutions in the field of RS, digital image and GIS technologies.

Barring a lone paper on RS for geological mapping in the eastern part of Andhra Pradesh, there was no other paper on geology, inspite of RS being employed as an effective tool in earth science. This is a matter for concern, indeed. In stark contrast, critical view of several other presentations in the areas of agriculture, forestry and soil science revealed the inadequacy or lack of empirical field inputs that are essential in those traditionally field-oriented regimes. Viewing RS as a panacea or quick-fix alternative to field-science would yield only disastrous results. A judicious blend of RS and empirical ground truth need to be fostered as a healthy practice in field-oriented science.

For oral presentations the organisers provided efficient multimedia facilities which never failed. Participants of the interactive session received their due space and time. Proceedings of the symposium are to be brought out in CD-ROMs and only limited hard copies. The organisers deserve all the praise for conducting this high-profile hi-tech symposium in an efficient and successful fashion.

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