

15 The workshop feels that framing of legislation on coastal/sea mining is overdue, enforcing the need for detailed exploration of the applied for area for mining lease. The legislation should also emphasise the importance of the assessment of impact on environment by mining and eco-restoration thereof should be binding on the lease holders.

Lastly, the workshop reiterated the fact that we are a recognised mining and technology nation and there is no reason to shy away from taking a lead in utilising our potential of mineral wealth of the ocean to the optimum level.

In conclusion, we once again convey our appreciation and gratitude to Prof. H. Hanumaiah, Vice-Chancellor,

Mangalore University for successfully hosting the workshop. Grateful thanks are due to DOD, DST, Tata Steels, ONGC, GSI, and various other sponsors, for their support and help. Delegates from various scientific and academic institutions who cannot be individually named here, also fully deserve our heartfelt thanks for the indomitable spirit with which they made scientific contributions and helped in the preparation of the draft recommendations.

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INTERNATIONAL CONFERENCE ON DEFORMATION MECHANISMS, RHEOLOGY AND TECTONICS - (DRT) - 2003

The above International Conference was held in St Malo, France during 14-16 April, 2003. It was the fourteenth meeting of a series of international conferences devoted to the study of deformation behaviour and rheology of rocks and minerals that started in 1976 in Leiden and is organized in different countries every two years. The organisers of the DRT-2003 were J.R Brun, P.R. Cobbold and D. Gapais of the Geosciences Department, University of Rennes, France.

The major objective of the DRT-series of Conferences is to encourage a dialogue between researchers working on all aspects of field, experimental and theoretical studies related to structural geology and tectonics. The thrust areas of the DRT-2003 were: (a) the way strain is accommodated and recorded in brittle and ductile rocks, (b) the physical mechanisms of grain-scale to aggregate-scale deformation and (c) implications at the scale of the lithosphere. Over a span of three days, there were invited talks, regular presentations and poster sessions. The following six invited talks were presented: (1) "Acadian structures that survive Alleghanian overprinting in the Appalachian Mountains: A Mountain belt's "memory" of stress events" by T. Engelder (Pennsylvania, USA); (2) "Object-centred kinematic indicators" by C.W. Passchier (Mainz, Germany); (3) "A review of deformation mechanisms and rheology of the lithospheric mantle" by M. Drury (Utrecht, The Netherlands); (4) "Rock deformation from grass to Moho" by

E. Rutter (Manchester, UK); (5) "Rheology of subducting slabs and its role in the exhumation of UHP rocks" by G. Ranalli (Ottawa, Canada); (6) "Growth of Tibet and rheology of the continental lithosphere" by P. Tapponier (Paris, France);

Each invited talk was followed by regular oral presentations. Over a span of three days a total of 39 papers were presented orally, all of which generated considerable scientific interest and debate. The author would like to highlight some of them. T. Bell (Queensland, Australia) spoke on "Rock Memory of Successive Deformations" wherein he presented "Foliation Intersection Axis" (FIA) data preserved in porphyroblasts of a part of Appalachians and discussed its implications for multiple deformation and metamorphism. D.K. Dysthe (Oslo, Norway) presented a paper entitled "There are no steady state processes in compaction" and G Wiesmayr (Vienna, Austria) spoke on "Flanking structures under transpression and transtension". M. Brown (USA) delivered a talk "The topology of syntectonic melt flow networks in the crust as inferred from melt-bearing structures in anatectic rocks" wherein he presented quantitative data from migmatites of South Brittany (France). He stated that the strain field which emerges under subsolidus conditions, controls the initial distribution of melt and with increasing melt volume a mesoscale shear and fracture system develops that enables transfer of melt from lower to upper crust. J.C. White

(Fredericton, Canada) gave a talk on "Mixed-mode versus discrete deformation mechanism regimes: implications for strain accommodation and textural interpretation". Several papers were presented that involved the use of numerical modeling system "ELLE" that simulates metamorphic and deformation microstructures. Amongst others, these included a talk by S. Piazzolo (Liverpool, UK) on "Dynamics of grain boundary migration and substructure evolution in rock salt: a combined study of *in-situ* experiments and numerical modeling" and by Mark Jessell (Toulouse, France) on "The role of grain-size in the localization of deformation: Numerical simulations of multi-process behaviour".

One of the papers, which the author personally found most exciting was presented by Paul Bons (Tubingen, Germany). The title was "Do bacteria deform rocks?", wherein the question "what process or mechanism actually drives the precipitation of fibrous vein material?" was explored using the samples from northern Flinders Range (Australia). It was shown in this presentation that micron-sized fossil bacteria, which resemble the modern-day hypothermal genus *Pyrodictium*, were incorporated within the vein calcite that had mobilized Ca, S, Sr and Cu in the immediate wallrock of the veins. It was argued that "Biological Deformation Mechanism" or "Bacterial Creep" could be an important deformation mechanism in very low grade rocks if bacteria is found to be involved in the growth of fibrous veins. From India, the author attended the conference and spoke on "Analyzing deformation fabrics in granitic rocks: an example from southern Aravalli region,

India" wherein field, microstructural and anisotropy of magnetic susceptibility data from the Godhra granite and associated gneisses was shown to infer that the granite developed fabrics syntectonically with D3 deformation of the gneiss.

The conference included long poster sessions, on field, microstructural, numerical and experimental data. A total of 123 posters were presented and these provided an opportunity for extended discussions between researchers. At the end of each day, there was a "General Discussion" summarizing the day's presentations and this was very interactive. Prior to the conference, a workshop on "Tectonic Modelling" was organized on 13th April 2003 at the Rennes University. There was also a post-conference field trip to South Brittany from 17-19 April 2003. Overall, the DRT-2003 was well attended and the presentations were stimulating and of a very high level. It was decided that the papers presented in the conference would be peer-reviewed for a Special Publication of the Geological Society of London. This volume will be published in honour of 60th birthday of Professor Pierre Choukroune (France), who along with his co-workers gave to the world of Structural Geology the term - *s/c fabric*.

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REPORT ON THE "WORKSHOP ON INTERLINKING OF RIVERS: DOABLE AND DESIRABLE?"

The Earth and Planetary Sciences Section of the West Bengal Academy of Science and Technology, organised a Workshop on "Interlinking of Rivers: Doable and Desirable?" on the 23rd May, 2003 at the Indian Institute of Chemical Biology at Kolkata. It was co-sponsored by the Geological Survey of India (GSI), National Bank for Agriculture and Rural Development (NABARD), Indira Gandhi Rashtriya Manav Sangrahalaya (IGRMS) Bhopal, Xth West Bengal Science and Technology Congress (WBS&TC) Vidyasagar University, Midnapore, State Water Investigation Directorate (SWID) West Bengal, and PCI Software Pvt. Ltd.

The Workshop had four Technical Sessions covering:

(i) Macro-dimensions and Geography, (ii) Geology and Hydrogeology, (iii) Engineering and Environmental Issues and (iv) Ecology, Economics, Social and Legal Issues. More than 70 senior scientists and technologists from various institutions and different fields of expertise comprising civil engineers, earth scientists, hydrogeologists, biologists, ecologists, agronomists, academicians, social scientists, economists, specialists in environmental science and others participated. Fifteen invited experts presented theme-papers on different aspects, which was followed by discussion from the floor.

It was broadly recognised that the technical challenge of the proposal in redrawing the geography of the country