NEWS AND NOTES

19th International Conference on Deformation Mechanisms, Rheology and Tectonics (DRT) Leuven (Belgium) — Manish A. Mamtani, Department of Geology & Geophysics, Indian Institute of Technology, Kharagpur – 721302. (*E-mail: mamtani@gg.iitkgp.ernet.in*)

Deformation Mechanisms, Rheology and Tectonics (DRT) meetings are a forum that bring together scientists (geologists, geophysicists and material scientists) working on deformation of earth materials at various scales (mega, meso and micro-scale) using field, experimental and theoretical studies. DRT meetings are traditionally held once every 2 years, and the 19th DRT was held in Leuven (Belgium) from 16-18 September 2013. It was organized by Manuel Sintubin and his associates from the Department of Earth and Environmental Sciences, Katholieke Universiteit Leuven (Belgium). Twelve sessions were held with emphasis on (a) Fabrics and microstructures (b) Fluids in a deforming environment (c) Deformation mechanisms, from experiment to nature (d) Microdynamics of ice – Micro-DICE (f) Methods in structural geology (g) Shear dominated deformation - from microscale to lithospheric scale (h) Valorisation to society.

91 earth scientists from 19 countries (Australia, Austria, Belgium, Brazil, Canada, Czech Republic, Finland, France, Germany, India, Japan, New Zealand, Norway, Portugal, Spain, Switzerland, The Netherlands, UK, and USA) attended the conference. 44 oral and 51 posters were presented. The following 7 keynote lectures were given: (1) Fabric evolution, localization, and strain-dependent strength profiles for the continental lithosphere (Laurent G.J. Montési) (2) From high pressure deformation experiments to anisotropy in the lowermost mantle (H.R. Wenk) (3) The importance of grain-boundary sliding during deformation of geological materials (L.N. Hansen) (4) How good is the glue? An integrated investigation of the mechanical properties of rocks undergoing crack-seal processes, using field, experimental and numerical methods (Janos L. Urai) (5) Microstructural

evolution of polycrystalline ice using in situ deformation experiments and FAME (Mark Peternell) (6) Complex fold patterns arisen from progressive non-coaxial deformation of quartzite beds (Jordi Carreras) (7) Earthquake rupture directivity inferred from depth-dependent frictional properties (Andre Niemeijer). From India, four earth scientists participated in the conference. M.K. Mukherjee (ISM, Dhabad) made an oral presentation on structural geology and kinematics of rocks of Kaladgi Basin (India). Manish A. Mamtani (IIT Kharagpur) gave a talk highlighting the identification of fluid pressure fluctuation from 3D Mohr circle analysis using quartz vein orientation data from Gadag (southern India). Rajkumar Ghosh and R.K. Chaurasia (both research scholars from IIT Bombay), each presented a poster that dealt with aspects of microstructures from different parts of Himalaya.

Discussions were held after every presentation. Amongst others, the presented papers dealt with – discrete element modeling of boudinage, experimental deformation of harzburgite, high-P/T deformation of polycrystalline wadsleyite (to understand mantle convection), influence of textural anisotropy on synkinematic partial melting of gneiss, microstructure evaluation using fabric analyzer based microstructure evaluation (FAME), importance of grain-boundary sliding in deformation, quantification of fracture patterns using fractal geometry, application of petrophysical and EBSD techniques to evaluate textures and its implications to identify transitions in the earth's interior, anisotropy of magnetic susceptibility (AMS) of deformed rocks, role of water in controlling slip systems of quartz and grain boundary migration recrystallization, numerical modelling and field studies to understand melt migration in lower crust, microstructural and

crystallographic evaluation of olivine in peridotite xenoliths to understand flow in upper mantle, role of fluid inclusions in microstructure development.

An important aspect of the 19th DRT was the importance given to research being done on microdynamics of ice. This is useful not only with regards to climate change, but also to the better understanding of crustal and mantle rocks, and characterization of a range of dynamic processes in ice caps (terrestrial and planetary conditions). Several presentations dealing with these aspects were made at the conference, which are a part of the European Science Foundation (ESF) funded Micro-DICE programme (www.microdice.eu) that involves linking atomic-scale processes to macroscopic behaviour of ice, its rheology and transport properties.

A *General Assembly* was held during the conference in which, amongst other things, a discussion was held on the future of DRT meetings, the possibility of involving application-based themes, and the need to encourage field-based structural geological investigations. DRT meetings were initiated in 1976 largely through the efforts of Henk Zwart (Utrecht, The Netherlands), who passed away in 2012. Therefore, the 19th DRT was dedicated to him. In honour of the path breaking structural geology work done by Henk Zwart, the *IUGS commission on Tectonics & Structural Geology (TecTask)* has instituted “*Henk Zwart Award*” to recognize scientists who have made an outstanding contribution in the field of structural geology. At the end of the DRT conference in Leuven, the first *Henk Zwart Award* was conferred on Paul F. Williams (University of New Brunswick, Canada). It was decided that the next DRT conference will be held in 2015 at RWTH Aachen University (Germany), which will be organized by Janos L. Urai and his team.