

## MEETING REPORTS

## DST contact programme cum field workshop on the geology of Kachchh\*

Participants representing various universities and research institutions from all over the country attended a workshop on the geology of Kachchh. This was mainly aimed at sharing knowledge on the geology of Kachchh among young geoscientists in the field, with S. K. Biswas as the course director. The programme was restricted to the Mesozoic geology of Kachchh, since a large part of the region is occupied by rocks of this age. However, because of renewed importance of neotectonic and palaeoseismic aspects in the light of the 26 January 2001

earthquake, these topics were also included.

S. K. Tandon in his inaugural address stressed upon the urgent need of involvement of young geoscientists for taking up challenging researches in the region, and contributing to developmental activities. Several lectures by eminent geoscientists were delivered on the first day; this was followed by field training during the remaining days.

Biswas, in his lecture, talked about various aspects of the geology of Kachchh such as lithostratigraphy, depositional environment, structure, tectonics and tectonosedimentary evolution. Jai Krishna (Banaras Hindu University, Varanasi) dealt with the high-resolution biostratigraphic and chronostratigraphic aspects of the Mesozoic rocks of Kachchh. Bijai Prasad (KDMIPE) presented a detailed account of Mesozoic palynology of

Kachchh. Tandon presented an in-depth high-resolution data on Cretaceous palaeoenvironments. R. V. Karanth (Maharaja Sayajirao University of Baroda, Vadodara) covered the palaeoseismic aspects of Kachchh. The lecture notes submitted by the resource persons are compiled in the form of a book of 196 pages encompassing ten chapters on different aspects of the geology of Kachchh with an exhaustive list of references. Field training was the most important part of the programme and the participants were shown all type sections and almost every part of the Kachchh basic was covered. One full day was devoted towards independent traverse mapping.

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## Physics at ultra-low temperatures\*

The Interuniversity Consortium for DAE facilities (IUC-DAEF), Indore has recently acquired an old dilution refrigerator from Freie University, Berlin. A meeting was recently organized to discuss possible experiments with this facility.

B. A. Dasannacharya (Director, IUC-DAEF) inaugurated the meeting, and described the acquisition of the dilution refrigerator (DR) in terms of the effort to provide low-temperature facilities to university users. He put this in the context of the existing facilities, as well as the new high-field facilities to be acquired under a project sanctioned by DST. Ganesan (IUC-DAEF, Indore)

then gave brief presentation describing the features of the DR. He and his colleagues had obtained temperatures below 100 mK twice at Berlin using the DR before it was shipped. The DR is presently being commissioned at Indore and is expected to have a cooling power of 20  $\mu$ W at 100 mK. Resistivity measurements (in the absence of a magnetic field) could be carried out once the DR is commissioned. In addition, Ganesan explained that the cryostat had aluminumized-mylar windows, so that Mössbauer measurements could be carried out. He also expected to add a 5-Tesla magnet after some time.

This was followed by a detailed presentation by E. Klein, from whose laboratory the DR had been obtained. He explained the sources of tiny heat leaks that are troublesome at these temperatures, and discussed how best one could

do resistivity measurements on different types of samples. He also discussed how to set up a variable temperature experimental platform, which is loosely coupled (thermally) to the DR. This was followed by a presentation by A. K. Nigam (TIFR, Mumbai) who described the ultra-low temperature facilities at TIFR. Their first DR was bought in 1992, and has a cooling power of 20  $\mu$ W at 100 mK. A second one, bought recently, has a higher cooling power (500  $\mu$ W). They have also bought recently a system going down to 300 mK for measuring specific heat, Hall effect, magnetoresistance, etc. T. S. Radhakrishnan (IGCAR, Kalpakam) discussed the use of noise thermometers, and showed how the applicability of these sensors has improved with the use of dc-SQUID sensors. These sensors require a single-

\*A report on the discussion meeting on 'Physics at Ultra-low Temperatures' organized at IUC-DAEF, Indore during 11–12 February 2002.