

be operated by the Geological Survey of India. The primary task of this research vessel will be to explore the territorial waters as well as the exclusive economic zone. It will also map the deeper parts of the Indian Ocean and gather data on the polymetallic nodules and metalliferous muds on the sea bed. *Sagar Kanya* is an oceanographic research vessel acquired by the National Institute of Oceanography based at Goa. This vessel will be mainly engaged in meteorological studies and in the exploration of marine biological resources. With the launching of the two research

ships India takes a leap forward in joining the technological run for the exploitation of the resources of the sea bed. Off-shore oil has already set the pace for the economic recovery of this country. In a like manner the exploration and exploitation of off-shore mineral deposits can be expected to contribute in the coming years to the material prosperity of the country and the well-being of its people.

Geological Society of India, B. P. RADHAKRISHNA
Bangalore. 560 053.

ANNOUNCEMENTS

SECOND NATIONAL WORKSHOP ON CATALYSIS IN PETROLEUM INDUSTRY

The Second National Workshop on Catalysis in Petroleum Industry will be held at the Department of Chemistry, Indian Institute of Technology, Madras 600 036, during 8th to 10th December, 1983.

The scope of the workshop is to present the recent advances in catalysis in petroleum industry, in general and also with specific reference to the problems and possible strategies for India. The programme will include invited lectures by experts in the field from all over the country. In addition contributed papers on the related areas are also welcome. These will be presented in the poster session. No review papers will be

accepted. Some of the areas covered by the invited talks will be zeolite catalysts, hydro-desulphurisation, anchored catalysts, coal conversion, catalytic processing of by-products from petroleum refineries, problems in manufacturing specific catalysts, etc. The last date for submission of abstract (in duplicate) in about 400 words is 15 September, 1983, to the Convener.

Further information may be had from Dr R. P. Viswanath, Second National Workshop on Catalysis, Department of Chemistry, Indian Institute of Technology, Madras 600 036.

SIXTH INTERNATIONAL CONFERENCE ON FRACTURE

The Sixth International Conference on Fracture will be held at New Delhi, India, during 4-10 December 1983. Contributors are invited to submit full papers for presentation at the conference on the following themes: (1) Fracture-Mechanisms and Mechanisms; (2) Fatigue-Mechanics and Mechanisms; (3) Failure at High temperatures-Mechanics and Mechanisms; (4) Environmental effects on fracture; (5)

Dynamic Fracture; (6) Fatigue and fracture of non-metallic materials; (7) Fatigue and fracture of composites; (8) Engineering applications of Fracture mechanics; (9) Test techniques; and (10) Failure analysis. All papers should be in English language.

Further details can be had from K. N. Raju, Deputy Director, National Aeronautical Laboratory, Bangalore-560 017
