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New Techniques in Sediment Core Analysis, edited by R.G. Rothwell, 2006. Geological Society of London, Special Publication 267. The Geological Society Publishing House, Unit 7, Brassmill Enterprise Centre, Brassmill Lane, Bath, BA1 3JN, United Kingdom (www.geolsoc.org.uk). Hardback, 272 pp. Price GBP 80.00. ISBN 978-1-86239-210-6.



“New techniques in sediment core analysis” is a collection of nineteen papers covering recent developments in the analysis of sediment cores. The first paper is an introductory review of the whole book. This intro paper summarises the other contributions. In addition it provides the context for many of the developments that are described in more detail in the individual contributions. Fifteen of the papers describe new technologies that are available for the rapid, quantitative characterisation of sediment cores. Techniques covered include a.o. X-Ray Fluorescence scanning, automated colour analysis of digital images, visible and near-infrared reflectance spectroscopy, X-ray tomography, and NMR characterisation of gas-hydrate-bearing sediments. Some of these technologies were specially adapted for shipboard application. What is helpful for anyone who is seriously interested in investigating some of the techniques described is that many of the papers identify the manufacturers of the equipment.

Three papers address the issue of data management. Vast amounts of sea-floor samples have been acquired, and the data collected have to be made accessible if the investment in their acquisition is not to be wasted. To indicate the magnitude of the job: by 2004, over 260 000 sea-floor samples had been recorded in the Index to Marine and Lacustrine Geological Samples. A particular problem with these geological data is that—unlike for instance geophysical log data for which standardised data formats have been agreed—much of the data is recorded in free format and/or as digital images of, for instance, core descriptions. This makes effective retrieval of data from the different data bases a particular challenge.

As a practicing petroleum geologist I find the title of the book slightly misleading in that focus is very much on the analysis of cores acquired in oceanographic studies (e.g., during the ODP / IODP drilling campaigns). If you want to find out about the state-of-the-art in the characterisation of oceanographic sea-floor sample, this book is a very good starting point.

Though many of the new techniques described may eventually find an application in the evaluation of cores acquired by the oil industry, this book does not address technology developments in industrial laboratories. This book is not a good buy if that is what you are looking for.

The book is well edited and produced as is the norm for the Geological Society. There are very few typos and the only, albeit very minor, editorial glitch which I found is on page 161, where sediment density is reported in g/cm^3 whereas density is reported in g/cc in the figure caption on the same page. References are up-to-date and, despite having made numerous spot checks, I have found no missing references.

All-in-all, the book represents a job “well done” by the authors as well as the editor. In summary: a useful addition for the specialist’s library.

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