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# Book Review

EDITED BY S. D. JACKSON, J. S. J. HARGREAVES and D. LENNON

**Catalysis in application**

RSC, Cambridge, 2003,
x +318 pp; price £99.95
ISBN 0-85404-608-9

Catalysis is the key to both life and lifestyle. It is an essential technology for chemical and materials manufacturing, for fuel cells and other energy conversion systems, for combustion devices, and for pollution control systems. The economic contribution from catalysis is vital to the global economy. Estimates from just 5 years ago that 35% of global GDP depends on catalysis did not include much of the emergent genetic business. Confining the analysis to the chemicals industry, with global sales of perhaps US$1.5 \times 10^{12}$, the proportion of processes using catalysts is 80% and increasing. The catalyst market itself is US$10^{10}$, hence the catalyst costs are much less than 1% of the sales revenue obtained from the products they help create. *Catalysis in Application* contains a selection of papers presented at the International Symposium on Applied Catalysis held at the University of Glasgow during July 2003. The symposium was a joint meeting of the Surface Reactivity and Catalysis, Applied Catalysis and Process Technology subject groups of the Royal Society of Chemistry and the Institute of Chemical Engineers. The meeting marked the retirement of Professor Geoff Webb, whose own contribution to catalysis research spanned nearly 40 years. The breadth of Professor Webb's experience in catalysis is mirrored in the wide variety of contributions contained within the book. These range from the more exotic surface science investigations involving molecular beam experiments and high-resolution spectroscopy of single crystal metal surfaces, to several contributions from industrial laboratories, an indication of Professor Webb's long and successful association with the chemical industry. Such topics include the deactivation of Zn/ZSM-5 in Fischer–Tropsch feedstocks and the use of solid base catalysts to perform aldol condensation reactions of aldehydes and ketones. Many other topic areas are covered within the general scope of supported metal catalysis, including enantioselective, acid–base and vehicle exhaust catalysis. Spectroscopic characterization of working catalytic systems is covered by a number of authors using a pleasingly wide diversity of techniques, including laser Raman and X-ray absorption spectroscopies together with techniques less commonly applied to the study of catalysts, such as cyclic voltametry.

As with any book of this nature involving conference proceedings, this is not a book for those new to the subject of catalytic chemistry, but it would be a valuable reference source to anyone working in the field of supported metal catalysis. It is also to be remembered that this is a book whose subject matter is based predominantly on heterogeneous catalysis. However, it is a well-presented account of what was an incredibly wide ranging conference, testimony to the career of an individual who over the course of 40 years not only made a significant impact on the subject but also on all those who were fortunate enough to work with him. *Catalysis in Application* provides an excellent snapshot of the state of catalytic chemistry in 2003, and will prove a valuable addition to any library.

**Richard P. K. Wells**
College of Physical Sciences
University of Aberdeen

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