



## Preface

More than 80% of all chemical products come into contact with a catalyst at some stage during their synthesis, thus rendering catalysts indispensable for the needs of today's society [1]. The economic value of catalysis is enormous and the annual worldwide value of chemicals (including petrochemicals) made via catalytic processes has been estimated at US\$ 2–4 trillion whilst industrial catalysis is a major contributor to the Gross National product of many countries. Indeed, it has been estimated that approximately 20% of the value of all commercial products manufactured in the US is derived from processes that involve catalysis.

In 2004, the global market for catalysis was estimated at US\$ 13 billion [2]. Catalysis is consequently a key factor to the long-term profitability, sustainability and viability of the chemical industry.

Catalytic products and process development carried out in academic institutions is often well documented and information is readily available in the open literature. However, investigations within companies are often shrouded in secrecy and key developments are often retained as knowhow within the commercial organisations as this is a source of competitive advantage. When published, details of any developments may be in laid out in patents may be difficult to understand as the form is dictated by competitive, strategic and legal considerations rather than scientific motives. That said, many catalyst companies are actively engaged in collaborative research programmes with a range of partners and the results of these types of collaborations, often pre-competitive or of a more fundamental scientific nature are more widely published.

This special issue of Catalysis Today article is in honour of one industrial chemist, Martin Lok, who retired from Johnson Matthey in 2008. Details on his career are highlighted by his colleague John Casci in the next section. It is our aim, as guest editors of this special issue on Industrial Catalysis, to shed light on some of the developments in catalysis that occurred during the span of his career. During his active career Martin has cooperated with many academic and industrial chemists on topics that are still of interest today. This special issue is a selection of papers that either (i) provide a retrospective review of progress over the last 30 years and

implications for today's development in specific areas of catalysis whilst others (ii) provide a description of recent and cutting-edge developments in areas of catalyst preparation and characterisation many of which have been witnessed and actively promoted by Martin throughout his career.

Catalysis will continue to play a key part in rendering the global economy more sustainable, e.g. by the catalytic manufacture of chemicals on the basis of renewable materials. Also, there are savings in raw material use for catalyst manufacture itself. In this sense, this special issue of Catalysis Today is not only to look back, but also for reviewing and sparking ideas for generations to come. Martin has shown us that the fascination for naturally derived materials and carefully prepared catalysts can be very successful combination.

## References

- [1] M. Beller, M. Beller, *Leibniz Perspectives—Research for a Sustainable Europe*, vol. 2, 2007, pp. 33–37.
- [2] U. Dingerdissen, A. Martin, D. Herein, H.-J. Wernicke, Development of industrial catalysis, in: J. Weitkamp, F. Schüth (Eds.), *Handbook of Heterogeneous Catalysis*, vol. 1, second ed., Wiley-VCH, 2008, p. 37.

Guest Editor

Sean A. Axon

Johnson Matthey Plc, PO Box 1, Belasis Avenue,  
Billingham TS23 1LB, United Kingdom

Guest Editor

Aalbert Zwijnenburg\*

Johnson Matthey Chemicals GmbH, Wardstrasse 17,  
D46446 Emmerich am Rhein, Germany

\* Corresponding author. Tel.: +49 2822 9141 135.

E-mail address: [Bart.Zwijnenburg@matthey.com](mailto:Bart.Zwijnenburg@matthey.com)  
(A. Zwijnenburg)

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