

Editorial

Welcome to the New Johnson Matthey Technology Review

Welcome to the first issue of the *Johnson Matthey Technology Review*, the new name for Johnson Matthey's peer-reviewed scientific journal which continues to build on the 58 years of heritage accrued by *Platinum Metals Review*.

Johnson Matthey and Sustainability

Johnson Matthey has a strong focus on sustainability, which underpins our commercial activities in manufacturing products which help to reduce the environmental impact of our daily lives and/or improve quality of life. Our products and services mitigate harmful emissions from vehicles, increase the efficiency of manufacturing chemicals, recycle precious metals to ensure resources go further, and make positive contributions to human health through manufacturing active pharmaceutical ingredients and specialised medical components, to name just a few.

In 2007 we launched a formal framework with targets to help achieve its aims – this is 'Sustainability 2017', our ten year programme to reduce our impact on the planet and improve the contribution we make for the benefit of all our stakeholders. It has two main drivers: to be more efficient with the resources we use as a business, and to design new products and services which help our customers to be more sustainable and competitive.

Johnson Matthey was also one of the first FTSE 100 companies to acknowledge the importance of this area by combining the reporting of sustainability performance with its annual financial results. We view sustainability as key to the future success of our business and are on course to meet our 'Sustainability 2017' targets of cutting our carbon emissions in half, halving our consumption of key resources, achieving zero waste and eliminating accidents and occupational illness cases while simultaneously doubling our underlying earnings per share.

Investment in Research and Development

Research and development (R&D) is vital to the long term sustainability of our business. Johnson Matthey is a technology company – we continue to invest significantly in R&D and many of our programmes are focused on bringing new sustainable products and technologies to the marketplace. Johnson Matthey has developed core competences in key areas of science that underpin our businesses: these include control at the atomic scale, materials characterisation and modelling. As well as internal programmes, the company also runs sponsored university programmes and collaborative external projects. There are thus many opportunities for academics and other researchers to collaborate with Johnson Matthey in a variety of areas in which the company is active.

Johnson Matthey will be celebrating its 200th anniversary in 2017 and R&D has been at the heart of the company since its foundation. One example of our ongoing R&D efforts is the development and design of emission control catalysts to meet tightening legislation around the world to reduce harmful emissions from vehicles and improve air quality. It is 40 years since Johnson Matthey manufactured its first emission control catalyst and the continued investment in R&D which has enabled the successful design and manufacturing of this technology over the years was recognised most recently in April 2014, when Johnson Matthey won a Queen's Award for Enterprise in Sustainable Development.

Of course none of this would be possible without the hard work of our research teams around the world, as well as our interaction with academic collaborators. In the UK, Johnson Matthey is involved in many collaborative research projects, including the new £12.9 million (US\$21.6 million) Engineering and Physical Sciences Research Council (EPSRC)-funded

UK Catalysis Hub, located at the Research Complex at Harwell, UK, which will co-ordinate multi-disciplinary scientists and chemical engineers from over 30 different universities and industry. Johnson Matthey is also a co-sponsor, along with Oxford Brookes University, for a new University Technical College to be situated in Swindon, UK, which will open in September 2014. Here we will contribute to the college curriculum and provide vocational experience to help train future engineers.

Johnson Matthey has also recently announced the establishment of a S\$5.3 million (US\$4.2 million) joint research laboratory in Singapore with Nanyang Technological University. This will be the company's first research collaboration of this type in Asia and will investigate new materials and renewable energy

solutions focussing on technologies for air and water purification and for energy storage.

So as you can see, the research and development of innovative new technology is engrained in the company and I am therefore very proud to introduce the new *Johnson Matthey Technology Review*. The broader scope of the journal will attract a huge variety of content from a wide range of researchers in all areas where Johnson Matthey is active. We are keen to continue our links to academia in all the technology areas where Johnson Matthey operates and this collaborative approach will continue to be reflected in this journal. I hope that you will enjoy reading it and find inspiration in its pages.

ROBERT MACLEOD, Chief Executive

A Collaborative Approach

The pages of *Platinum Metals Review* over recent years have highlighted several of Johnson Matthey's academic collaborations involving platinum group metals (pgms). One collaboration between Johnson Matthey, the University of Aberdeen and Cranfield University in the UK generated a new palladium-based ethylene scavenger to control ethylene-induced ripening of fruit (1). Another study with University College London, UK, determined the species present in fresh and road aged light-duty diesel catalysts (2). The Controlling Access of Reactive Molecules to Active Centres (CARMAC) programme aimed to use chemical engineering and an understanding of reaction mechanisms to improve catalyst specificity and selectivity for the chemical manufacturing industry (3). Johnson Matthey's flame spray pyrolysis and analytical facilities are acknowledged in a study on platinum-doped titania nanoparticles (4).

Editorial Policy

The *Johnson Matthey Technology Review* will continue to publish articles and reviews from Johnson Matthey's many academic collaborators. The journal is not exclusive to those who have an existing relationship with the company. Our new Editorial Policy (5) has more details of the expanded range of topics that the *Johnson Matthey Technology Review* will cover, from the traditional precious metals science and technology

that were the focus of *Platinum Metals Review* for its 58 year history, to new areas in membrane technology, base metal catalysis, battery technology and much more.

We invite and welcome submissions or proposals for articles and reviews from anyone working in fields covered in our Editorial Policy. All are welcome to contribute to the journal which is provided free as a service to the global scientific community – please get in touch if you wish to contribute. We look forward to hearing from you.

SARA COLES, Assistant Editor

References

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4. I. E. Paulauskas, D. R. Modeshia, T. T. Ali, E. H. El-Mossalamy, A. Y. Obaid, S. N. Basahel, A. A. Al-Ghamdi and F. K. Sartain, *Platinum Metals Rev.*, 2013, **57**, (1), 32
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