

Editorial

55 Years of Platinum Metals Review

This year marks the 55th anniversary of the first publication of *Platinum Metals Review* by Johnson Matthey. In more than five decades of continuous quarterly publication, *Platinum Metals Review* has covered a wide range of industrial and scientific uses of the platinum group metals (pgms), emphasising the metals' unique properties in applications ranging from automotive emissions control and efficient industrial processes to anticancer drugs. *Platinum Metals Review* also covers new applications of the pgms, and regularly features articles on new and emerging technologies such as fuel cells and hydrogen energy. This issue continues these traditions, featuring subjects as diverse as palladium-based membranes for the production of high-purity hydrogen and platinum casting techniques for the jewellery industry. With pgm science more relevant than ever at this time, it gives me great pleasure to be managing this prestigious and respected journal.

2011 also marks a number of important anniversaries for the Johnson Matthey group: the 160th anniversary of George Matthey joining the company which was to become the partnership Johnson and Matthey and eventually Johnson Matthey PLC, and the 150th anniversary of the company being approved as refiners to the Bank of England. It also marks the 85th anniversary of A. R. Powell, then head of Johnson Matthey's Research Department, perfecting a process for extracting and refining the pgms from the ores of the Merensky Reef in South Africa. This enabled the successful exploitation of the world's biggest platinum deposits and helped to develop Johnson Matthey's close and enduring association with pgms and with the South African company Rustenburg Platinum Holdings Ltd, which later became Anglo Platinum Ltd, the world's largest primary producer of pgms.

Another important milestone has recently passed, the anniversary of the US Clean Air Act Extension in 1970, which led to the development of pgm-based technologies for the control of automotive exhaust emissions. By 1975 model year, platinum-based autocatalysts fitted to cars in the US were instrumental in reducing carbon monoxide and hydrocarbon emissions by 90 per cent compared with 1970 models. 1976 model year cars went on to use two separated pgm-based catalysts to also control NO_x emissions. By the early 1980s the first practical systems to use platinum/rhodium three-way catalysts to control all three legislated pollutants were in production.

Almost every country in the world now has automotive emissions regulations which necessitate the use of pgm autocatalysts and this application is currently the single biggest demand sector for platinum, palladium and rhodium. Progress on the development and implementation of pgm catalysts for vehicle emissions control is covered in this issue in our 'Appreciation' of one of the pioneers of autocatalysts, Dr Haren Gandhi of Ford, by another autocatalyst pioneer, Dr Martyn Twigg of Johnson Matthey.

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