

Striving to Advance Platinum Technology

INDUSTRY SEEKS TO ENCOURAGE ACADEMIC PROGRESS

During the latter part of the eighteenth century the only source of platinum was New Granada, a region located in the north-west of South America, and history records that the Spanish authorities donated quite substantial amounts of the metal to individuals and scientific institutes throughout Europe in order that its properties could be established and uses found. In due course applications were found for the quite remarkable properties of platinum by a select group of manufacturers, including the firm that became Johnson Matthey. For many years from about 1870 onwards George Matthey, a member of the Chemical Society and the Royal Institution and later a Fellow of the Royal Society, encouraged his large circle of scientific friends by providing them with samples of platinum and the other metals of the platinum group for the investigation of their properties and in the search for further applications.

This policy of co-operation with the scientific world continues to this day and the University Loans Scheme operated by Johnson Matthey has enabled many scientists worldwide to obtain platinum metal materials for their researches. This co-operative approach will be taken a step further at the Barclays Techmart exhibition, to be held 11th to 14th November 1986 at the National Exhibition Centre, in Birmingham, England, where Johnson Matthey is participating for the first time. This exhibition will provide an ideal forum for academia to discuss scientific problems related to platinum and its applications, or ideas for collaborative ventures in new platinum metal technology. To illustrate the scope for new ideas, examples from the broad spectrum of current applications of platinum will be displayed, together with the scientific rationale underlying their use. Although the chosen theme "Platinum - The Catalyst for Change" is metaphorical, catalysts themselves offer a

major research and development opportunity to advance further their industrial application in chemical processes, pollution control and energy generation systems, such as fuel cells. Work is required to correlate the catalytic properties of platinum-containing materials with their solid state chemical and physical characteristics. Fundamental materials studies are also essential for future electronic applications. High-temperature and catalytic applications which illustrate the cost-effectiveness of platinum in industry will be displayed, together with biomedical uses such as in Carboplatin, the second-generation platinum-based anti-cancer drug launched earlier this year.

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Fuel cell development will be the central feature of the Johnson Matthey display. The 500W prototype shown here has been designed as a portable source of electricity for use in remote locations for charging batteries or for powering communications equipment. The hydrogen fuel is supplied from a lightweight cylinder, but a portable methanol-fuelled generator may be used