

waste materials. Current understanding of the process is such that it can be stated with some confidence that all of the entries in the Table, apart from mercury and cadmium, would be amenable to destruction. Although it has not yet been developed beyond pilot rig scale, appraisal of the process suggests that it may be both "bat" and "neec" for categories of both radioactive and non-radioactive organic waste which are troublesome to dispose of safely by any other acceptable means.

The Faraday Lecture on Platinum

On 22nd February, 1861 Michael Faraday delivered a Friday Evening Discourse on platinum to the members of the Royal Institution, London. Faraday's talks were highly popular, and his "Lecture on Platinum" came to be regarded as a classic. However, the meeting did not take the form that he had originally intended. In France, Henri Sainte-Claire Deville and Jules Henri Debray had devised a lime-block furnace fired by a mixture of oxygen and coal gas in which platinum could be melted and refined. This was a major advance in technology, and when the French and British patents were filed in 1857 the British rights to the process were at once acquired by George Matthey; indeed after a lengthy period of development this method became the first by which platinum could be successfully melted commercially on a large scale. In view of the great interest in it, Faraday invited Deville to demonstrate the process at the Royal Institution, and the

"intention was to have fused here some thirty or forty pounds of platinum, and so to have made manifest, through my mouth and my statement, the principles of a new process in metallurgy in relation to this beautiful, magnificent, and valuable metal".

However, in early February, 1861 it was decided that the time was not right for the process to be carried out in front of a public audience. Thus at short notice Faraday, drawing on his wide knowledge of the platinum metals, had to prepare and deliver a lecture of his own (1), and an abridged version of this historic address was reprinted here in 1961 (2).

Following tradition, on Friday, 13th October 1989, Professor John M. Thomas, F.R.S., Director of the Royal Institution, and also an internationally recognised authority on

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- 1 House of Commons Environment Committee on Toxic Waste, Volume 1 (Report with Appendices), H.M.S.O., March 1989
 - 2 H. Mishima, T. Iwasita, V. A. Macagno and M. C. Giordano, *Electrochim. Acta*, 1973, 18, (4), 287
 - 3 H. N. Po, J. H. Swinehart and T. L. Allen, *Inorg. Chem.*, 1968, 7, (2), 244
 - 4 M. Fleischmann, D. Pletcher and A. Rafinski, *J. Appl. Electrochem.*, 1971, 1, (1), 1
 - 5 "Inputs of dangerous substances to water : Proposals for unified systems of control", Department of the Environment, 1988

heterogeneous catalysis, delighted Members and their guests when he presented the Faraday Lecture of the Royal Society of Chemistry, choosing to pay homage to the scientific genius of Michael Faraday during a most informative and interesting discourse on "Platinum". As is customary at the Royal Institution, Professor Thomas carried out a wide range of experiments which demonstrated in a most entertaining way some of the remarkable properties of platinum, including a number which are the basis of many important industrial, medical and scientific processes and others which have not yet been commercially exploited.

When concluding his presentation he thanked Johnson Matthey for their help with the demonstrations, and in particular the loan of the platinum exhibited. Again he was following the example of Faraday, who in 1861 recorded his indebtedness to "Messrs. Johnson and Matthey.... for these ingots, and for the valuable assistance in the illustrations".

The spectacular nature of Professor Thomas's performance, his respect for Michael Faraday—both as a person and as a scientific investigator—and his wide knowledge of the science and technology of platinum, cannot be adequately conveyed in the written word.

Fortunately the Royal Institution made an audio-visual tape recording of the events of the evening, and plans are in hand to make copies of this available. Details may be obtained from: The Royal Institution of Great Britain, 21 Albemarle Street, London W1X 4BS.

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- 1 M. Faraday, in "A Course of Six Lectures on the Chemical History of a Candle, to which is added A Lecture on Platinum", ed. W. Crookes, Charles Griffin, London, 1865, pp. 173-204
 - 2 *Platinum Metals Rev.*, 1961, 5, (1), 26-29