

either for cutting and forming or for disposal emit unpleasant odours. THT catalyst has been evaluated for the removal of the fume produced by the hot wire forming of polyurethane foam. The inlet temperature to the catalyst for complete odour removal is 350°C.

#### **Smoke and Odour Removal from the Exhaust of Self-cleaning Cookers**

By incorporating additional heating elements into the oven of a domestic cooker, the temperature of the oven walls may be raised above that required to burn off the cooking residues. The carbon monoxide and partially oxidised hydrocarbon residues if emitted into the kitchen without treatment would be unpleasant. THT catalyst placed in the oven exhaust duct will remove the carbon monoxide at 150°C but the temperature must be increased to 300 to 350°C to eliminate the odour.

#### **Internal Combustion and Diesel Engine Exhaust Purification**

One of the most widespread and potentially one of the most serious air pollution problems is that occurring in areas of high traffic density. The fume emitted by both diesel and

internal combustion engines contains carbon monoxide, nitrogen oxides and unburnt hydrocarbons.

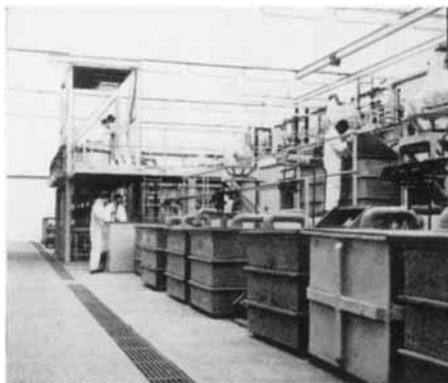
Already, exhaust units using THT catalyst are installed on diesel engines operating in mines and enclosed areas. The catalyst may also be used on internal combustion engines using non leaded fuel. At exhaust temperatures above 150°C, that is at all engine conditions except slow idling, the catalyst will remove between 80 and 90 per cent of carbon monoxide and unburnt hydrocarbons from the exhaust gases without increasing the concentration of the nitrogen oxides when excess oxygen is present. Under reducing conditions, i.e., when there is an excess of CO and hydrocarbons over oxygen in the exhaust gas the catalyst will reduce the concentration of nitrogen oxides.

#### **References**

- 1 Air Pollution, S.C.I. Monograph No. 22, 1966
- 2 D. P. Thornton, *Platinum Metals Rev.*, 1963, 7, 82
- 3 British Patent No. 954,504
- 4 M. R. Miller and H. J. Wilhoyte, *J. Air. Pol. Control Assoc.*, 1967, 17, 791
- 5 J. B. Hunter, *Platinum Metals Rev.*, 1968, 12, 2

## **New Platinum Refinery in South Africa**

The new Johnson Matthey platinum refinery at Wadeville was opened officially in October 1969. Previously the entire output of partially refined material treated by Matte Smelters (Pty) Ltd at Rustenburg had been sent to England for final refining. A proportion of this material will now be processed at Wadeville to produce pure platinum group metals and compounds ready for marketing. The new refinery, in which Rustenburg Platinum Mines is a partner, is part of the implementation of the joint policy of Rustenburg and Johnson Matthey to assure industry throughout the world of adequate and continuing supplies of platinum metals. Rustenburg Platinum



Mines, the world's largest producer, currently produces 850,000 ounces troy of platinum per year and has an expansion programme to provide 1,000,000 ounces per year in 1970 and to increase capacity to 1,200,000 ounces per year by 1973.