

Control of Industrial Odours

THE INSTALLATION OF HONEYCAT SYSTEMS

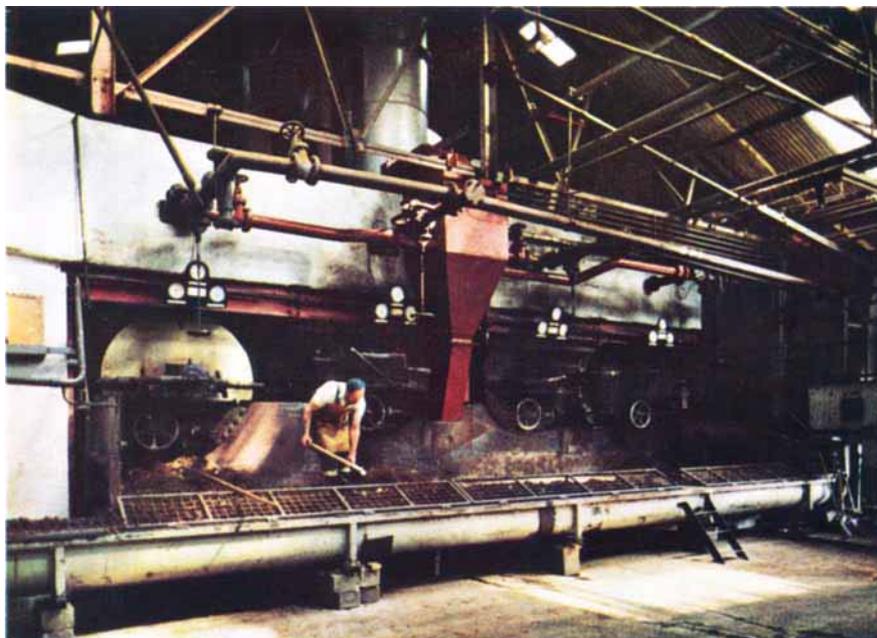
Platinised ceramic honeycomb catalysts form the basis of a number of systems for air pollution control (1). Prominent among the air pollution problems that cause offence to the public are those where industrial processes give rise to malodorous effluent gases and to combat this nuisance Johnson Matthey Chemicals has developed the Honeycat* air pollution control system, which removes odours and organic pollutants from effluent process gases (2).

The Honeycat* air pollution control system depends for its effectiveness on catalytic combustion converting organic vapours, the

main cause of most factory smells, to non-smelling and harmless carbon dioxide and water. The direct incineration of malodorous gases has long been known as an effective method of odour abatement, but owing to the low concentration of organic compounds usually present in effluent gas streams, the method is rarely economic. The cost of the fuel necessary to heat foul gases to the temperature necessary for complete combustion of the organic pollutants is usually prohibitive and may even be more than the cost of operating the process giving rise to the odour.



This photograph of a Type 80 Honeycat unit in a plant producing high protein meal from feathers clearly shows the layout of the installation. Untreated foul gases enter the rectangular heat exchanger and are pre-heated before passing to the bottom of the cylindrical combustion unit which contains the burner gear and the Honeycat* catalyst charge. Purified, deodorised gases pass back through the heat exchanger, where 50 per cent of their heat is recovered before being vented to the atmosphere. The small building on the left of the Honeycat* unit houses the control panel*



Here a Type 10 Honeycat unit is mounted directly above the four cookers in an animal by-products works where offal, meat scraps, bones and condemned meat are processed to tallow, bone meal and high protein meat meal. The steam-laden foul gases emitted during the cooking process are passed directly to the Honeycat* unit, which completely removes the offensive odours*

The use of catalytic combustion has for many years been recognised as a means of lowering combustion temperatures and thus reducing operating costs but the catalyst systems hitherto available have all suffered from one or other inherent disadvantages when used in commercial air pollution control systems. The development of Honeycat* platinised ceramic honeycomb catalyst has overcome these disadvantages and effective odour abatement may be obtained at operating temperatures of about 50 per cent of those required in direct incineration systems.

Honeycat* air pollution control units are currently available in four standard sizes designed to treat the volumes of air most commonly encountered in odour abatement problems and the system is already being successfully applied in the animal by-products, food manufacturing and fish meal industries. The critical factors that affect the solving of air pollution problems of this type are the

composition, temperature and volume of the process gas to be treated and these may vary considerably in such widely different processes. Precise knowledge of these factors is essential and a pilot plant trial is usually conducted to determine the optimum size and type of the Honeycat* unit necessary for the satisfactory solution of the particular problem.

The illustrations depict two typical installations which demonstrate the versatility of the system. Units can be sited either inside or outside the building where the effluent gases originate. Units may be mounted either vertically or horizontally, dependent upon the factory space available.

G. S.-C.

References

- 1 G. J. K. Acres, *Platinum Metals Rev.*, 1970, **14**, (1), 2-10
- 2 G. J. K. Acres, *Platinum Metals Rev.*, 1971, **15**, (1), 9-12

* Johnson Matthey Chemicals trade-mark.