

# Petroleum Reforming Processes in China

## RESEARCHES ON PLATINUM CATALYSTS

During the past few years a number of research papers in the Chinese literature have described investigations into the mechanism of the catalytic reforming process, the behaviour of the platinum catalysts employed, and the kinetics of the various reactions involved.

Among the workers studying these problems the names of Yen-Ching Chang and I. V. Kalechits are the most prominent and it would appear that, as is so often the case, considerable technical co-operation is being given by the U.S.S.R. The background to this activity has been filled in to a certain extent in a paper in a Russian journal by Chan Ta-yü of the Institute of Petroleum of the Academy of Sciences of the Chinese People's Republic (*Khimiya i tekhnologiya topliv i masel*, 1960, (4), 66—69).

As would be fully expected, a very great effort has been put into petroleum production. The old oilfields have been extended and new deposits opened up; existing refineries have been reconstructed and ten new refineries and synthetic liquid fuel plants have been built, while new techniques both of refining and of analysis—including chromatography—have been developed. Major attention appears to have been given, however, to the platinum reforming process for the production of both high-octane petrol and of aromatic raw materials. (It is a little unfortunate that all the publications on this process refer to it as "Platforming"—the trade-mark used by Universal Oil Products Company to describe their original process, the first to be introduced in 1949.)

A suitable platinum catalyst is said to be available, and techniques for working up the

products have been developed; the process will soon be operated on a large scale. Research is said to have increased the activity and selectivity of the catalysts for reforming and hydrogenation and the use of a highly efficient platinum catalyst is expected to lead to a four- to sixfold increase in productivity.

Much work has also been carried out on catalyst supports such as kieselguhr, activated charcoal, alumina and silica gel, and a systematic study of the fundamental laws of catalytic processes, including the dual functions of the metal and the support.

Among other researches being carried out by workers at the Institute of Petroleum are studies of the fractionation of hydrocarbons obtained by aromatisation of water-gas synthesis products and by platinum reforming and separation of oxygen-containing compounds from hydrocarbons in the processing of shale tar.

## Production and Uses of the Platinum Metals

A comprehensive survey of the production and technology of the platinum metals has been published by the Mineral Resources Division of the Canadian Department of Mines and Technical Surveys. Compiled by C. C. Allen, the report includes sections on mineralogy and occurrences, on methods of extraction and refining, on the physical and chemical properties of the metals and on their principal uses in industry. Marketing and price data are also presented, and tables of production statistics are given, together with information on world reserves. The report is available from the Department in Ottawa at \$1.00.