

INFLUENCE OF TECHNOLOGY ON CATALYTIC SCIENCE

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Catalytic science has advanced significantly during the last few decades. Developments in material science, analytical techniques, absorption studies, and preparative techniques have enabled scientists to get a fresh insight into the phenomenon of catalysis. As a result now scientists are in a position to innovate catalysts for specific requirements. Advances in catalysis together with the understanding of chemical reaction engineering applied to designing of chemical reactors have shaped the modern production technology of important chemical feed stock.

Good examples of industrial catalysts include ammonia synthesis, catalytic cracking and reforming in the petroleum industry and hydrogenation of fatty oils. Successful applications are reported in the field of methanol synthesis using the water-gas shift reaction. More recently remarkable catalysts have been developed and successfully applied in the fields of control of CO and NO_x in exhaust gas emissions and in the production of synthetic gasoline from natural gas.

The success of these applications and the industrial demand for new chemical processes and routes have stimulated research leading to the progress in the science of catalysis. This feedback which entails the inevitable modifications required, accelerates the progress of both catalytic science and technology.