

Developments of Hydrodesulfurization Catalysis

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Hydrodesulfurization processes are continuously developing as an essential task for the production of ultra-low sulfur of petroleum middle distillates, such as the introduction of nano-catalysts has led to a big revolution in the hydro treating technologies.

The catalyst activity and stability developments can be achieved by improving the intrinsic activity of the active sites, as well as by increasing the number of Co–Mo–S structure at mild conditions.

The Mo sulfidation at low temperature has led to the increase of the formation of Co–Mo–S structure.

Catalyst developments include new highly selective multicomponent oxide and metallic catalysts, Nano-zeolites,

Carbon Nano Tubes and homogeneous transition metal complexes.

Researchers have aimed at understanding the fundamental mechanism of ultra-deep HDS catalysis, where various technology for the preparation of HDS catalysts have been developed, including novel support materials as well as methods for tuning the surface properties of catalysts.

On the other hand, novel research work has been conducted to optimize catalyst performance by the development of stacked catalyst technology application, investigating the interactions between different types of HDS catalysts and different hydro treatment reactor zones.

Biography:

Abbas Anwar Ezzat is currently a petrochemical professor at Pharos University and a distinguished scientist at materials Science Dept., the Institute of Graduate Studies & Research, Alexandria University. In addition, he is a local consult for the Egyptian Petroleum/Petrochemical sector and a senior associate consultant for Channoil Consulting LTD, London. Prior joining Academia, he occupied several top management positions in the Egyptian Petroleum/Petrochemical industries. In the field of training, he is conducting local and regional training programs in the fields of Petroleum/Petrochemical Processing, trouble Shootings, Operations management etc.

Dr. Ezzat holds MSc in Chemical Engineering from Washington University and Ph.D. in Petrochemical applications from Alexandria University. He completed his postgraduate studies in Petroleum Processing Technologies from the School of Chemical Engineering at Oklahoma State University, USA.

Dr. Ezzat has published some articles in the fields of Operation Management, Applied Reliability Concepts, Trouble Shooting, process intensification processes and Catalysis Developments in Petrochemical Industries.

Dr. Ezzat has participated in many international conferences organized by OAPEC, WRA, B.F.G, B.P., LUMMUS, AKZO-Nobel, Marcusevans, CTAC, IQPC and EGYPS.