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Catalysis Today 51 (1999) 201

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Preface

Supported metal oxide catalysts are currently extensively employed in the chemical, petroleum and pollution control industries. Supported metal oxide catalysts consist of an active metal oxide component (e.g., oxides of V, Mo, Cr, W, Re, etc.) deposited on the surface of an oxide support (e.g., Al_2O_3 , SiO_2 , TiO_2 , etc.). In certain applications, the supported metal oxide catalysts are also combined with noble metals in order to enhance the catalytic properties of the noble metal component (e.g., $\text{Pt/CeO}_2/\text{Al}_2\text{O}_3$ and $\text{Pt/SnO}_2/\text{Al}_2\text{O}_3$). Some of the more important applications of supported metal oxide catalysts are: dehydrogenation of *n*-butane to butene over $\text{CrO}_3/\text{Al}_2\text{O}_3$, ethylene polymerization over $\text{CrO}_3/\text{SiO}_2$, hydrodesulfurization (HDS) of crude oil over $\text{MoO}_3/\text{Al}_2\text{O}_3$ and $\text{WO}_3/\text{Al}_2\text{O}_3$, oxidation of *o*-xylene to phthalic anhydride by $\text{V}_2\text{O}_5/\text{TiO}_2$, epoxidation of propylene by hydrogen peroxide over $\text{TiO}_2/\text{SiO}_2$, olefin metathesis over $\text{Re}_2\text{O}_7/\text{Al}_2\text{O}_3$, selective catalytic reduction (SCR) of NO_x emissions with $\text{V}_2\text{O}_5/\text{WO}_3/\text{MoO}_3/\text{TiO}_2$, ammoxidation of alkyl aromatics by $\text{V}_2\text{O}_5/\text{Al}_2\text{O}_3$ and $\text{V}_2\text{O}_5/\text{TiO}_2$, oxidation of H_2S to elemental sulfur over $\text{Fe}_2\text{O}_3/\text{CrO}_3/\text{Al}_2\text{O}_3$ and $\text{Fe}_2\text{O}_3/\text{SiO}_2$, oxidation of chlorinated volatile organic compounds with $\text{CuO}/\text{CrO}_3/\text{Al}_2\text{O}_3$, oxidation of dioxin and PCB emissions by $\text{V}_2\text{O}_5/\text{TiO}_2$, N_2O decomposition to N_2 and O_2 over NiO/ZrO_2 , and *n*-butane isomerization to isobutane over SO_4/ZrO_2 and WO_3/ZrO_2 catalysts.

In spite of the growing importance of supported metal oxide catalysts, there have been very few review articles on this subject. Thus, it was decided by Julian Ross and myself that it would be a timely topic to devote a special issue of *Catalysis Today*. However, it was not possible to find authors for all applications of supported metal oxide catalysts in the time frame of the publication of this issue and, consequently, only about half of the current applications are covered in this special issue. Hopefully, a second issue of *Catalysis Today* will be devoted to the additional “applications of supported metal oxide catalysts” in the near future.

I first want to thank all the authors who have so enthusiastically agreed to write the excellent review papers for this special issue of *Catalysis Today* and who have made this issue possible. Secondly, I would like to thank the various scientists who have agreed to anonymously review the detailed manuscripts. I especially want to acknowledge Professor Michael Amiridis (Department of Chemical Engineering at the University of South Carolina) for assisting with the review process of the two manuscripts from Lehigh University and Mrs. Marge Sawyers (Zettlemoyer Center for Surface Studies, Lehigh University) for efficiently coordinating the review process.

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