

Recent Advances in Selective Oxidation Catalysis

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There is now a tradition among scientists working on selective oxidation catalysis and related fields to meet in alternate years at Schwäbisches Bildungszentrum in Irsee, Germany to discuss recent advances. These workshops fostering stimulating informal discussions and exchanges of ideas in oxidation catalysis and related fields have been sponsored by The Robert Karl Grasselli Foundation (a non-profit organization founded in the year 2000). The 4th Irsee Symposium whose proceedings are reported here was devoted to the advances in selective oxidation catalysis and took place 7–10 June 2007. It was attended by an excellent cross-section of experts in selective oxidation catalysis, including scientists from 11 countries (Belgium, France, Germany, Greece, Ireland, Italy, Japan, Spain, Sweden, United Kingdom, and USA). The previous Irsee conferences were also reported in special issues of Topics in

Catalysis: Irsee I (2000) in vol. 15; Irsee II (2002) in vol. 23; Irsee III (2005) in Vol. 38. The next symposium (Irsee V) is scheduled to take place again in Irsee, Germany in June 2010.

About half the talks reported here (papers 1–9) discuss various aspects of the selective oxidation and/or ammoxidation of propane or propene over mixed metal oxides based on various combinations of Mo, V, Nb, Ta, Te, and Sb. The dramatic increase in the knowledge and understanding of these important but challenging systems since Irsee I (2000) is gratifying, deriving partly from the interactions and discussions at these Irsee meetings. Other topics include a reexamination of the fundamental issues pertaining to the concept of site isolation of catalytically active sites and the relation between preparation, nanostructures, and selectivity in oxidation catalysts.

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