



Preface

This special issue of Catalysis Today contains a representative part of the lectures presented at the Eleventh International Symposium on Catalyst Deactivation, held in Delft (The Netherlands) from October 25 to 28, 2009. The past ten CATDEACT conferences have been very successful. They earned a strong reputation as a new series of international conferences on catalyst deactivation. CATDEACT11 built on a successful tradition focusing on classical deactivation in main-stream heterogeneous catalysis and the impact on the process behaviour, but it was also shaped to account for the importance of the phenomenon in other fields of catalysis like new processes for valorisation of renewables, including chemical and mechanical deactivation as well as new techniques for studying deactivation.

Over one hundred submitted contributions from twenty-eight countries demonstrate that catalyst deactivation is still on the upfront of catalysis research, while the large industrial participation (more than a forty percent) reveals how much catalyst deactivation is coupled to practical processes.

Among the eighteen papers selected for this issue, deactivation during main-stream heterogeneous catalysis is the most studied, with deactivation in Fischer–Tropsch synthesis being the hottest topic, while the growing interest on catalyst deactivation during processing of bio-resources is also accounted for. With respect to the scientific insight of the accepted contributions, we are glad to notice that the use of new *in situ* and computational tools has been widely extended to the field of catalyst deactivation, resulting in comprehensive studies under realistic operation conditions. The challenge now is to apply this useful information in the design of new generations of catalysts with an improved stability.

We want to acknowledge all the authors and reviewers of the manuscripts, the editorial team at Elsevier and, very specially, Professor Jerry Spivey (the Editorial Board Member of Catalysis Today responsible for this special issue) for their efforts on behalf of this issue. We hope that this special issue will be valuable to the catalysis community both in industry and academia.

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Available online 3 July 2010