Preface for Catalysis for a Cleaner and Sustainable Future

Ilenia Rossetti¹

Published online: 30 October 2018

© Springer Science+Business Media, LLC, part of Springer Nature 2018

The impact of catalysis in the worldwide research panorama has grown almost continuously in the last 2 decades reaching ca. 20,000 Scopus indexed products per year. In this frame, the interest on environmental catalysis is steadily growing, constituting ca. one-third of these products, while the additional keyword “sustainable” became more and more important in the last decade, passing from 0.2% of occurrence in all “catalysis products” in year 2000 to 40% in 2019.

This special issue of Topics in Catalysis is based on selected contributions presented during the 13th European Congress on Catalysis, EuropaCat 2017, which was held in

Florence, Italy, August 27th–31st, 2017. This conference, organised every 2 years, represents an excellent platform for researchers from all over the world, both from academia and industry, to share and discuss the latest advances in catalysis. The broad scientific programme included six topics: (1) Catalysis to address the evolving energy and chemical scenario; (2) Catalysis for a cleaner and sustainable future; (3) Addressing catalysis complexity; (4) Understanding and design catalyst from molecular to material scale; (5) Expanding catalysis concepts and (6) Industrial catalysis. This collection refers to topic 2, only, including environmental catalysis and catalysis for sustainable processes. A subject by far raising the highest number of abstracts: 760 contributions submitted, out of a total of 1815.

This issue groups some examples of application of catalysis to the improvement of the sustainability of chemical processes. Case histories are taken from different fields, such as the utilisation of CO₂ (articles 1 and 2), the valorization of biomass derived compounds, starting from simpler molecules (articles 3–5), to more complex ones (articles 6–9), up to cellulose and lignin (articles 10–11). The role of the catalyst and of its specific functions has been deepened in articles 12–15. Last, but not least, environmental catalysis issues are addressed in articles 16–22, mainly focusing on deNO_x, SCR and dehydrochlorination processes.

✉ Ilenia Rossetti
ilenia.rossetti@unimi.it

¹ Dipartimento di Chimica, Università degli Studi di Milano,
via C. Golgi 19, 20133 Milan, Italy