



Preface

Combinatorial and high throughput (HT) methods in catalysis R&D have matured. Companies implementing such techniques have recognized their power and importance in speeding up research, reducing time to market, increasing productivity and adding value to processes and products. The development of technologies for parallel synthesis and product characterization has been accompanied by a simultaneous growth of information technologies. The availability of hardware and software for a wide variety of HT-applications on the market is continuously increasing. Publications and presentations increasingly focus on discovery of materials and new knowledge.

The first *EuroCombiCat* Conference took place in 2002 in Ischia, Italy (23 lectures, 90 participants). It was then followed by the European Conference on Combinatorial Catalysis Research *EuroCombiCat2007*, which took place in the city of Bari in Italy from April 22 to 25, 2007 (see <http://www.eurocombiat.org>). It was organized by DECHEMA (Germany) and sponsored by the EU project "TopCombi" (<http://www.topcombi.org>). The number of participants increased to 122, with 19 countries represented, including Asia and USA which summed up to 20 attendees. Noteworthy, industry contributed the largest presence with 67 participants, more than half the entire attendance. The Conference presented an up-date about the state of the art and the most recent developments in the field of combinatorial catalysis as well as the new experimental tools used for the related high-throughput experimentation. 3 plenary lectures, 2 evening lectures, 32 oral presentations and 36 posters covered most of the key aspects of combinatorial catalysis. Exhibitors permitted a direct contact with newest technological developments.

While the increasing importance of HT-technologies in industry was well documented by the numerous presentations and the large attendance, a relative stagnation was observed in academia, where still only a limited number of institutions are deeply involved in the HTE research area.

The Conference was organized in the following five sessions: Data Management and Information Technology, Case Studies: Heterogeneous Catalysis, Hardware and Methodology Development, Case Studies: Homogeneous and Polymerization Catalysis, and Industrial Case Studies and Success Stories.

The lectures associated to data analysis and information technology (IT) documented the advanced and sophisticated state of such essential technologies in all laboratories. Knowledge discovery has become one of the most striking benefits of the IT-development in HTE. The lectures on heterogeneous catalysis dominated the conference (20 papers). Interestingly, the lectures

focused on remarkable discoveries and optimization of new catalysts for a wide variety of applications, indicating that the HT-technologies used are mature. Several reports on successful kinetic studies with HTE opened another important field of application. Of special interest were several success stories from industry, i.e., reports on very successful HT-activities at Exxon, UOP, Basell, Bosch, HTE, Honda, Symyx and Degussa.

To conclude it may be stated that the Conference was very successful. Bari, with its ancient center, was a cultural experience and the entire organization, especially of our Italian hosts, made the whole Conference a real pleasure. The next Conference *EuroCombiCat2009*, is scheduled for April 19–22 in Valencia (Spain).

Selected presentations are published in this special issue of *Catalysis Today*. They are representative of the breadth and high quality of *EuroCombiCat 2007*.

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