

Foreword

Marco Mazzotti

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FOA9, the Ninth International Conference on Fundamentals of Adsorption, was held May 20–25, 2007 at Giardini Naxos in Sicily, Italy under the auspices of the International Adsorption Society (IAS). It continued a tradition of scientific excellence, international attendance and personal exchange that started with FOA1 chaired by Alan L. Myers in 1983 in Schloss Elmau, Germany and continued in 1986 in Santa Barbara, USA (chair: Athanasios I. Liapis), in 1989 in Sonthofen, Germany (Alfons Mersmann), in 1992 in Kyoto, Japan (Motoyuki Suzuki), in 1995 in Pacific Grove, USA (M. Douglas LeVan), in 1998 in Presqu'île de Giens, France (Francis Meunier), in 2001 in Nagasaki, Japan (Katsumi Kaneko), and in 2004 in Sedona, USA (Orhan Talu). FOA9 was attended by 430 delegates, of which 120 were Ph.D. students. In addition, there were 70 accompanying persons. These attendees came from more than 40 different countries of all continents. An up-to-date overview of the field of adsorption and its applications was provided through 142 oral presentations and more than 300 posters. Posters were discussed in two afternoon sessions, whereas oral presentations were delivered during five days, and distributed in five plenary sessions and twenty-four parallel sessions, plus an industrial plenary session honoring our late colleague and friend John Sherman. The following five distinguished keynote speakers provided their perspectives of five important areas of adsorption science and technology:

- Orhan Talu, Cleveland State University, USA—“Adsorptive storage”.
- Ryong Ryoo, KAIST, Korea—“Generation of mesoporous materials with various structures and compositions”.
- Massimo Morbidelli, ETH Zurich, Switzerland—“Chromatography for protein purification”.
- Randall Q. Snurr, Northwestern University, USA—“Molecular modeling of adsorption in metal-organic frameworks”.
- Kunimitsu Morishige, Univ. of Science Okayama, Japan—“Adsorption hysteresis in ordered mesoporous silicas”.

A number of exhibitors were present at FOA9 with their state-of-the-art instrumentation and equipment. Some industrial and institutional sponsors (see www.foa9.ethz.ch) have helped to make FOA9 possible, by providing funds that have been used to help junior and senior participants in need of financial support to attend FOA9.

I am very thankful to the two co-chairs, Giorgio Carta and Minoru Miyahara, to IAS, particularly Kent Knaebel, and to the International Scientific Committee for their help and support in organizing and running the conference. I would also like to thank Sauro Pierucci and Raffaella Damerio of the AIDIC (Associazione Italiana di Ingegneria Chimica) for the excellent local organization, as well as my research associates at ETH Zurich.

This issue of *Adsorption* is the first of a series containing the manuscripts of the contributions presented at FOA9 that have been accepted after peer-review, carried out with the help of a panel of approximately 300 reviewers. Papers are grouped in each issue according to their topic, and are distributed through the issues on a first-come, first-served basis. FOA9 as a whole, as well as the papers in this FOA9 Special Issue of *Adsorption*, prove once more the breadth of

M. Mazzotti, FOA9 Chair and Guest Editor of the FOA9 Special Issues of Adsorption.

M. Mazzotti (✉)
ETH Zurich, Institute of Process Engineering, Sonneggstrasse 3,
8092 Zurich, Switzerland
e-mail: marco.mazzotti@ipe.mavt.ethz.ch

adsorption science and technology encompassing physical, chemical and biological systems and the impact of its applications. Thanks to better experimental and modeling tools applied to old and new materials, adsorption specialists are improving their understanding and prediction capability of adsorption phenomena, mechanisms and processes. At the same time they are developing classical applications of adsorption as well as new directions, such as energy systems, life sciences, environmental applications, micro-nano technology. I am convinced adsorption promises to offer challenging science and high-impact applications for many years to come.

The Tenth International Conference on Fundamentals of Adsorption, FOA10, is being organized by Minoru Miyahara and will be held in Kobe, Japan, in May 2010. With the previous FOA conferences in Japan still in mind, the whole adsorption community looks very much forward to experiencing again the Japanese exquisite hospitality.

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FOA9

May 20-25, 2007 Giardini Naxos, Sicily - Italy

FOA9

Marco Mazzotti (in the middle of the first row of the FOA9 photo, between Minoru Miyahara and Giorgio Carta), an Italian citizen born in 1960, married to Mietta, with two children, has been professor of process engineering at ETH Zurich, Switzerland since May 1997. He holds a Laurea (M.S., 1984) and a Ph.D. (1993), both in Chemical Engineering from the Politecnico di Milano, Italy. Before joining ETH Zurich, he had worked for IBM Italy (1985–1987) and Montefluos (1988–1990), and had been assistant professor at the Politecnico di Milano (1994–1997).

His research activity deals with adsorption based separations and chromatography, and with crystallization and precipitation processes.

The application areas of interest are the purification of biopharmaceuticals and carbon dioxide capture and storage systems. Twelve PhD students have graduated with him and thirteen are currently advised by him. His refereed publications include more than 130 journal articles, 20 papers in books and 6 book chapters. He was a coordinating lead author of the Intergovernmental Panel on Climate Change Special Report on Carbon Dioxide Capture and Storage (2005). He is an active member of the AIChE, of the Working Party on Crystallization of the EFCE, and of the IAS, of which he is the current Vice-President (2007–10).