



Preface

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This Special Issue of *Applied Catalysis A* presents a collection of papers honouring Professor Bernard Delmon on the occasion of his 80th birthday.

Our objective has been to compile an issue comprising contributions from researchers who have worked with Professor Delmon in our laboratory whether as PhD students, post-docs or visiting professors – namely researchers who have closely collaborated with him and who were taught and inspired by him.

We thus have had the great privilege of inviting many well-known scientists to participate in this special issue, which recognizes the important and significant contributions of Bernard Delmon to fundamental and applied catalysis. Publications in this issue comprise both original research and review papers, which represent the diverse range of the various authors' research interests. All manuscripts submitted were subjected to strict standard peer-review procedures.

As guest editors, we would like to express our sincere gratitude to all the participating authors in this Special Issue and also to all the referees for their work. In addition, we would like to thank Prof. Jacques Védrine, Editor of *Applied Catalysis A: General*, for both welcoming the idea of publishing this Special Issue and also for his continued help during its preparation.

Most unusually for a scientific career, Bernard Delmon's professional activity encompasses a wide and diverse scientific spectrum, with him having been responsible for important contributions in different aspects of solid state chemistry, colloid chemistry, surface science, chemical engineering, chemistry of solutions and theoretical chemistry. His main research interests are in the preparation of dispersed solids and catalysts, the control of solid state reactivity; catalysis: hydrotreating, selective oxidation, biomass transformation, acid catalysis; surface mobility phenomena; physico-chemical characterization of dispersed solids with complicated architecture; the mobility of small chemical species on surfaces; spill-over and remote control (in hydrotreating, selective oxidation, oxygen-aided dehydration).

It is indisputable that Bernard Delmon's scientific contributions have spearheaded new areas of research in catalysis. Often, his scientific contributions have led to effusive and interesting discussions with colleagues. His work has generated new interpretations of experimental results (selective oxidation, hydrotreating, hydrogenation, etc.) as well as novel mechanistic models (remote control, role of spillover, etc.) These contributions have very frequently differed from those generally accepted to be the rule in catalysis. Hence, it is probable that the attitude of some within the scientific community impeded progress in the further in-depth study of his discoveries and the new concepts, which he proposed, as a result of their emotional (rather than critical) response to his publications. We are persuaded that by revisiting his work now, people may find fresh inspiration for the interpretation of their current studies.

Bernard Delmon was born in Le Havre, France, in 1932 (and so is a French citizen). He graduated in jointly in Mathematics and in Physics, Paris (1954); and received the diploma of Engineer from the *Ecole Nationale Supérieure du Pétrole et des Moteurs*, Paris (1956). In Belgium, he received a Ph.D. from the *Université Catholique de Louvain* (1959). He is also *Dr ès Sciences d'Etat*, awarded by Grenoble University, France (1965).

His professional career started as a research engineer, and then a senior research engineer, at the *Institut Français du Pétrole* (IFP), in Grenoble and Paris (1959–1970). He later switched to an academic career at the *Université catholique de Louvain*, where he initially became Head of the Solid State Chemistry and Catalysis Laboratory (1970–1974) and subsequently Director in the Group of Inorganic Physical Chemistry and Catalysis (1974), which was followed by his appointment to Full Professor in 1984. He headed and developed

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the Laboratory of Catalysis and Chemistry of Dispersed Materials in the *Université Catholique de Louvain*, until his mandatory retirement in 1997.

The list of Bernard Delmon's achievements, which comprise his curriculum vitae, is a testament to the variety of fields of activity and endeavour, numerous responsibilities and commitments and collaborations which he has been involved in. But, for the sake of brevity, we shall only point out a selection of his numerous activities.

Bernard Delmon is an Associate Member of the Académie Royale de Belgique and a Member of the Belgian Academy Council for the Applications of Science (BACAS, Royal Belgium Academy of Applied Sciences). He received the title of Dr Honoris Causa from the University of Patras, Greece (1991) and from the University of Santiago de Chile, Chile (2005). He was a recipient of an Alexander von Humbolt Research Award (1992), which allowed him to stay for a sabbatical year at the Fritz Haber Institute, Berlin in 1993–1994, where he worked with Dr. Jochen Block.

In 1969 he wrote *"Introduction à la Cinétique Hétérogène"* and co-authored *"The Control of the Reactivity of Solids"* with V.V. Boldyrev and M. Bulens in 1979; he has co-edited 18 books and special issues of journals and has been an author of more than 600 research papers and 18 patents. Bernard Delmon also took part in some major editorial enterprises, which started with the launch, in 1981, of *Applied Catalysis* (as editor-in-chief) and continued with *Catalysis Today*, *Applied Catalysis B*, *Environmental*, *Journal of Molecular Catalysis* and with the "red book" collection of *Studies in Surface Science and Catalysis* (which occupy quite a number of shelves in our library!). He has participated in about 10 Scientific Committee of prestigious international journals.

He has participated in the boards and scientific committees of many research institutes including some in Belgium, France, elsewhere in Europe, China and a number of other places. He was involved in the United National Industrial Development Programme (UNIDO-UNDP), served the IUPAC as a member of the Commission of Colloid Chemistry and Surface (IUPAC-Chemistry and Reactivity of Solids), served as president of the Advanced materials: colloids aspects, surface and catalysis" group; was on the board of the "Chemical Engineering in the application of catalysis" section of the European Federation of Chemical Engineering and on the board of the European Federation of the Catalysis Societies (EFCATS), co-founder of EUROSOLID: European Association "Transformation Kinetics and Reactivity of Solids"; just to list some of his commitments.

He has devoted much energy and enthusiasm in the founding and organization of several large international meetings. The series

of PREPA symposia ("International Symposium on the Scientific Bases for the Preparation of Heterogeneous Catalysts") has been high profile – the 11th meeting will be held in 2014, will be again hosted by our laboratory, with Bernard Delmon still participating in the organizing committee!

He has also been the linchpin of many other events: the International Symposium on the Relations between Heterogeneous and Homogeneous Catalytic Phenomena, the International Symposium on Catalyst Deactivation, Surface Properties and Catalysis by Non-metals: Oxides, Sulfides and other Transition Metal Compounds, the European Workshop Meeting: New Developments in Selective Oxidation, the World Congress on Oxidation Catalysis, Biomass for Energy and Industry, the Symposium on Interfaces in New Materials, "Catalysis: An Interface between Chemical Engineering and Chemistry", the European Workshop Meeting: Environmental Industrial Catalysis, Symposium on Catalytic Reactions in Gas-Liquid-Solid Reactors, Hydrotreatment and Hydrocracking of Oil Fractions and the International Symposium 'Powder Characterization for Advanced Materials Manufacture'. To date, he has been a participant on the organizing committees of about 200 scientific events.

Bernard Delmon is a great traveller and he has visited a large number of laboratories abroad (such as those in Argentina, Brazil, Chile, China, Great Britain, Hungary, India, Japan, Mexico, Russia, Taiwan, Yugoslavia, etc.), with which he has maintained excellent relations and collaborations for years; Latin America has been a cherished destination for a long time, and he has also shown great interest in China and Japan. He has combined a natural and deeply held interest in the culture and the language (he speaks some seven languages!) of the various countries he visited to the scientific value of his collaborations.

He has given more than a hundred plenary lectures at international scientific meetings and at local conferences. These include presentations delivered in Bulgaria, Canada, Germany, China, France, Great Britain, Greece, Hungary, Italy, Japan, Korea, Latin America, Morocco, Mexico, Norway, Portugal, Spain, Taiwan, The Netherlands and USA.

This collection of papers originating from former students and collaborators, who are now established in various locations across the globe, is illustrative of Bernard Delmon's many gifts as a team leader, a great scientist and also a citizen of the world. For us it is a great honour to celebrate his 80th birthday with this Special Issue.

We would like to apologize to all colleagues and friends who have worked or collaborated with Bernard Delmon and whom we have not been able to contact for participating in this Special Issue.