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The authors of this book belong to different scientific schools. Guy B. Marin was educated in the tradition of the thermodynamic and kinetic school of the Low Countries as well as that of the American school, with Michel Boudart as a post-doctoral advisor, and has benefited from the Dutch school of catalysis.

Gregory Yablonsky<sup>1</sup> is a representative of the Soviet-Russian catalytic school, being a postdoctoral student of Mikhail Slin'ko and collaborating with Georgii Borekov. He was also a member of the Siberian chemicomathematical team together with Valerii Bykov (Novosibirsk, Krasnoyarsk, presently Moscow), Alexander Gorban (Novosibirsk, Krasnoyarsk, presently Leicester UK), Victor Flokhin (Novosibirsk), and Mark Lazman (Moscow, presently Cambridge, MA), who joined this team in the 1980s.

Decoding the mechanisms of complex chemical reactions, especially of heterogeneous catalytic reactions, can be considered one of the main challenges of contemporary chemistry.

In accordance with our different scientific experiences, we have tried to present different achievements and trends. We have paid special attention to the achievements of the Russian school of chemical kinetics, which has acquired an explicit expertise in interpreting catalytic reactions in terms of detailed mechanisms. The reader may find many references to Soviet/Russian sources, even in the introduction, as we fear that in a few years the sinking Atlantis of Soviet Science will disappear forever, and we wished to collect and translate a memory of its achievements in the field of chemical kinetics.

This book was written during three summers (2008–2010) at Ghent University (Belgium), partially based on results obtained in the course of the long-standing collaboration between Ghent University and the University of St. Louis (Washington University in St. Louis and Saint Louis University). We both hope that the unique atmosphere of this old city of Ghent is somehow reflected in it.

Guy B. Marin would like to take the opportunity to acknowledge the importance of crossing the paths of great scientists, engineers, and characters in the thirty years that have passed by since obtaining his PhD degree. At Stanford University there was of course Prof. Boudart, but also his whole I.S.A.C. (Laboratory for Surface Adsorption and Catalysis) team with, in particular, graduate

<sup>1</sup> Yablonsky moved from the Soviet Union to the US in 1995 and, rigorously speaking, is the reincarnation of Yablonski, his surname until 1998.