

Preface

Self-organization is one of the most important and most general features of nature, being practically omnipresent in our world, viz., in physical and inorganic systems, in organic and living systems, and even in social systems. Already 200 years ago, self-organization phenomena have been observed in electrochemical experiments and much later a vast number of carefully designed electrochemical experiments have been described where self-organization plays a role. Electrochemistry lends itself for such studies in a very special way, as it allows easy control and measurement of the electrode potential and current. Therefore, it is no surprise that the quantitative data of electrochemical experiments have given a very sound basis for mathematical modelling of self-organization. Professor Dr. Marek Orlik is an experienced electrochemist who now specializes in the physical chemistry of self-organization. His profound knowledge of mathematics, physics, and chemistry, together with his clear-cut thinking and his experimental abilities, enables him to present the theoretical background and the experimental details of self-organization in electrochemistry in a very lucid and appealing way. Professor Orlik is a disciple of the Warsaw electrochemical school. He did his PhD with Zbigniew Galus, and worked as postdoc with Gerhard Gritzner (Linz), and he was an *Alexander von Humboldt Fellow* with Karl Doblhofer and Gerhard Ertl in Berlin.

The publishing house Springer and the editor of the series *Monographs in Electrochemistry* regard it as a big fortune that Marek Orlik accepted the invitation to write this monograph because it is the first comprehensive description of that topic, and it is clearly a very seriously needed monograph. When starting to write this monograph, the author quickly realized that the topic cannot be adequately covered in one volume because the mathematical and physical background needs careful and extended explanations. We are thankful to Springer for agreeing to publish this monograph in two volumes, allowing the author to present both the theoretical and the experimental side in detail. Writing such 2-volume monograph is a task which absorbs all energy for several years, and it is not only an intellectual achievement, but also physically very demanding, especially when considering that

the author has all the duties of a professor at a chemistry department of a major university! I am sure that the appreciation of the readers will give Marek Orlik the deserved reward and I hope that the monograph will stimulate further studies of this important branch of physical chemistry.

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