PREFACE

This volume contains papers presented during the international conference on 'Diffusion and Reactions : From Basics to Applications" held in Kraków, Poland, on 7-9 September 1994 on the following occassions :

- in honour of Professor Stanisław Mrowec on his 65th birthday,
- to celebrate 75 years of the University of Mining and Metallurgy in Kraków and 45 years of the Faculty of Materials Science and Ceramics of this University,

organized by the Faculty of Materials Science and Ceramics, University of Mining and Metallurgy, Kraków and sponsored by the Polish Committee for Scientific Research and Development, Polish Ministry of National Education, FISONS INSTRUMENTS, Wien, Austria and Hiden Analytical Ltd., Warrington, England.

The conference focussed on how understanding of diffusion and reaction mechanisms affects the development of materials with the improved service properties. Three general topics were addressed : (i) Heterogeneous Reactions; (ii) High Temperature Diffusion and Corrosion Mechanisms; (iii) Current Problems and Trends in the Development of Materials for High Temperature Applications in Aggressive Environments.

The main scientific objectives of the conference were : (i) to provide a forum for the presentation of current problems regarding the pertinent issues; (ii) to bring together experts and young scientists in order to facilitate and encourage efficient exchange of knowledge and experiences; (iii) to identify the short-term and long-term research aims.

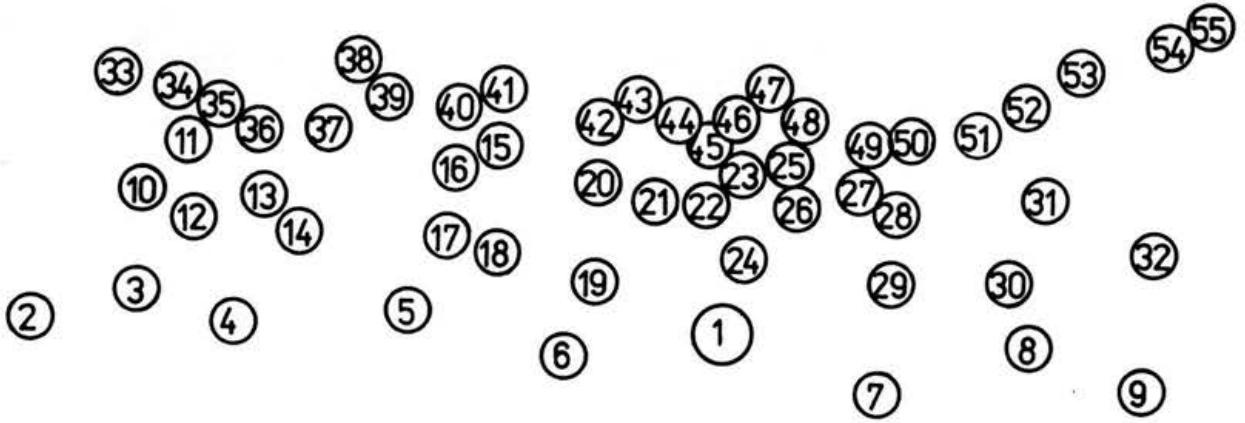
The high quality of the presentations and the lively discussion which followed the sessions, ensured an interesting and enjoyable meeting.

All the papers in this volume were reviewed to meet the high standards of scientific publication.

I would like to express my thanks to all the authors and referees for their cooperation in editing of the present volume as well as to the members of the organizing committee, in particular to Mr. Jarosław Dąbek, for their assistance in the preparation of the conference.

Jerzy Jedliński


1776 PROJEKTY WPROWADZENIA NAUK GÓRNICZYCH W UNIWERSYTECIE JAGIELLOŃSKIM H. KOŁŁĄTAJ 1776, 1783, 1810 S. STASZIC 1809, 1816
1780 STYPENDYŚCI KOMISJI EDUKACJI NARODOWEJ W AKADEMIACH GÓRNICZYCH FREIBERG 1780–1781 SCHEMNITZ 1788–1792
1782 KOMINA KRUSZKOWA
1783 WYKŁADY G... W UNIWERS... J. JAŚKIEWICZ
1792 PROGRAM ... J. MIEROT
1919
KSZTAŁCENIE PRZYŁAKADOWE 1833
SZKÓŁ GÓRNICTWA 1833–1849
ŚREDNIE SZKOŁY GÓRNICZE
TARNOWSKIE GÓRY 1839
WIELICZKA 1861
BORYSŁAW 1886
DĄBROWA GÓRNICZA 1958
DĄBROWA CIESZYŃSKA 1962
POLACY W AKADEMIACH GÓRNICZYCH ZA GRANICĄ
SCHEMNITZ
FREIBERG
PETERSBURG
'DIFFUSION AND REACTIONS:
From Basis to Applications'
September 7-9, 1994
Kraków, POLAND
65th Birthday of Professor Stanisław Mrowec



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PROFESSOR STANISŁAW MROWEC

Stanisław Mrowec, born in 1929, is a full professor at the University of Mining and Metallurgy, member of the Faculty of Materials Science and Ceramics and head of the Department of Solid State Chemistry. He is also a member of the Polish Academy of Sciences and of the Polish Academy of Skills. After receiving the Master Science degree in Chemistry, at the Jagellonian University, Kraków, he was employed at the School of Mining and Metallurgy (recently : University of Mining and Metallurgy) in Kraków. Since 1952 he has been working there, receiving the Ph.D. degree in 1959, Doctor of Science ('habilitation') degree in 1962, assistant professor position in 1963, and full professor position in 1973. Since 1974 he has been a director of the Institute of Materials Science. After re-organisation of the university he became the head of the Department of Solid State Chemistry.

It is hardly possible to mention all the activities of Professor Mrowec in Poland and abroad. He is an author or co-author of more than 200 scientific papers and a member of editorial boards of several international scientific journals, among others : Oxidation of Metals, Solid State Ionics, Review on High Temperature Materials,... Alone and together with Professor T. Werber he published a few scientific books in Polish. Some of the monographs : 'An Introduction to the Theory of Metal Oxidation', 'Gas Corrosion of Metals', 'Defects and Diffusion in Solids : An Introduction', and 'Modern Scaling Resistant Materials', were translated into English and published by the The National Bureau of Standards and the National Science Foundation, Washington D.C., and by the Elsevier Scientific Publ. Co., Amsterdam. They are used as the standard textbooks for students all over the world.

The scientific interest of Professor Mrowec was strongly affected by Professor Carl Wagner, the leading scientist in solid state chemistry and an innovator in fundamental approach to high temperature diffusion and corrosion processes, whose laboratory, in Göttingen, he visited in 1962. The one year stay in Germany resulted not only in a remarkable scientific progress but also initiated a long cooperation and friendship among the members of Wagner's group and other young scientists : N. Birks, D. Douglass, H.-J. Grabke, A. Rahmel, R.A. Rapp, H. Rieckert, who gradually became the leaders of the best research groups in Germany and the U.S.A.

Professor Mrowec arranged an international cooperation between his group in Poland and several laboratories all over the world, in Germany (Max-Planck-Institut Düsseldorf, Forschungszentrum Jülich), France (Université Bordeaux, Université Paris-Süd, Université de Burgogne, Dijon; Université de Provence, Marseille), Norway (University of Oslo) and Japan (Tohoku University). The members of his group took an advantage of this cooperation which brought about many common studies and papers.

Professor Mrowec is not only highly esteemed by international scientific community but first of all by his students and colleagues who consider him as an outstanding

community but first of all by his students and colleagues who consider him as an outstanding lecturer, tutor and group leader. His scientific assistance gave more than 30 Ph.D. dissertations. Eight of his younger coworkers became professors.

In addition to the fundamental issues, Professor Mrowec showed vital interest in industrial aspects of materials science and corrosion. He cooperated with Polish plants and in 1986-1990 directed national research programme on 'Corrosion Protection'. This programme resulted in many patents and substantially contributed to the progress in the protection of materials against aggressive environments.

Professor Mrowec has received numerous awards for his scientific achievements, but they by no means are the measure of his contribution to the progress in materials science and solid state chemistry. His friends and colleagues, those who came to Kraków and those, who could not attend the conference, congratulate Professor Mrowec on his 65th birthday and wish him further successful work as well as all the best in his private life and hope to take an advantage of future cooperation with him.

Marek Danielewski
Jerzy Jedliński