

MATERIALS SCIENCE MONOGRAPHS, 28B

REACTIVITY OF SOLIDS

Proceedings of the 10th International Symposium on the Reactivity of
Solids, Dijon, August 27–31, 1984

PART B

Edited by

PIERRE BARRET

and

LOUIS-CLAUDE DUFOR

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Laboratoire de Recherches sur la Réactivité des Solides, University of Dijon, Dijon, France



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PREFACE

The 10th International Symposium on the Reactivity of Solids was held at the University of Dijon from the 26th to the 31th of August 1984. It was the second of the series to be held in France since the first one, in Paris in 1948, started a sequence of meetings held at four-yearly intervals successively in Gothenburg (1952), Madrid (1956), Amsterdam (1960), Munich (1964), Schenectady (1968), Bristol (1972), Gothenburg (1976) and Krakow (1980).

This Symposium was organized with the sponsorship of the "International Union of Pure and Applied Chemistry" and the "Comité National Français de la Chimie" and with the partnership of the "Centre National de la Recherche Scientifique". The Organizing Committee gratefully acknowledges the role of these Institutions and the following Institutions and Companies which have generously provided financial support:

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The Organizing Committee wishes to express its sincere gratitude to Prof. H. Curien who, as the French Minister of Research and Technology, honored the Symposium by his presence.

The meeting was attended by 360 participants, of whom 190 were from 25 countries outside France. 261 lectures and papers were presented, 165 of them by participants from outside France.

The Symposium was organized in plenary sessions and in 15 parallel specialized sessions. During the plenary sessions, the opening lecture, 9 general invited lectures and 19 introductory lectures were presented. These lectures appear in the proceedings, except for the general lectures, which have been published in full in "Pure and Applied Chemistry", Vol. 56, Nr.12 (1984). As for each of the 15 parallel specialized sessions, the papers presented orally (6 in sessions 1, 3, 9, 11 and 12; 5 in session 5; 3 in sessions 4, 6, 7, 10, 14 and 15; 2 in sessions 2 and 13; 1 in session 8) appear at the beginning of the corresponding section and each is followed by a verbatim record of the discussion.

We would like to thank gratefully all of those who contributed to the success of the meeting by their support, their work and their cooperation:

- Prof. J. Bénard, as the representative of the President of IUPAC;
- Prof. J. Haber, as the President of the International Advisory Committee, and all the Members of this Committee;
- all the Members of the French Organizing Committee who took part in the meetings preparatory to the organization of the Symposium and so kindly refereed the Extended Abstracts;
- the Chairmen and discussion leaders of the sessions, the plenary lecturers and all those who came to Dijon to present papers.

These thanks are particularly addressed to Prof. G. Watelle, as Chairman of the Local Organizing Committee, to Prof. J-C. Colson, as Executive Secretary, and to all the Members of the "Laboratoire de Recherches sur la Réactivité des Solides", who constituted the Local Organizing Committee.

We are confident that the content of the proceedings, which sets out some of the recent developments in this interdisciplinary field of the Reactivity of Solids, will be useful to most of us. We hope that all of the contributors of the present Symposium and others in new areas of the Reactivity of Solids will meet again at the next Symposium to be held in Princeton (USA) in 1988.

Dijon, February 1985.

The Editors,
P. Barret and L-C. Dufour

ADDRESS ON BEHALF OF THE PRESIDENT OF IUPAC

J. BENARD

President of the "Comité National Français de la Chimie".

On the request of Dr W.G. Schneider, President of International Union of Pure and Applied Chemistry and in my capacity as former past-President of this Union, I have the pleasure to give you the following address.

International Union of Pure and Applied Chemistry has given its sponsorship to the tenth Conference on the Reactivity of Solids. This decision has been adopted in recognition of the increasing importance of chemical reactions which involve solid state.

Until recent decennies these reactions were neglected, mainly because of the difficulties of their approach through strictly scientific methods. But such a situation has now been drastically modified. Thanks to the efforts of those working in this field, research has flourished due to its numerous applications, in particular with regards to discovery of new materials.

I would like to take the opportunity of my address to remind you that since more than fifty years, IUPAC, besides its traditional activities of fixing the rules of nomenclature and standards, has undertaken

the organization of vast international Conferences, where are discussed general problems of major importance such as food supply, health care and so on. These so called CHEMRAWN Conferences (Chemical Research Applied to World Needs) have a great impact far beyond the limits of scientific community. I invite you to pay attention to their conclusions usually published in "Pure and Applied Chemistry", the journal of IUPAC.

I feel extremely happy that IUPAC has given its sponsorship to this tenth Conference on the Reactivity of Solids. The reputation of those experts invited here to give plenary lectures, the impressive number of contributors from all over the world, the fact that you meet in a city where important research works have been done in your field, all these positive factors constitute the guarantee that the Conference will be highly successful.

On behalf of the President of IUPAC, I convey my warmest wishes to the organizers of the Conference and to all scientists who are attending.

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- Vol. 25 Sintered Metal—Ceramic Composites (Upadhyaya)
- Vol. 26 Frontiers in Materials Technologies (Meyers and Inal)
- Vol. 27 Joints with Fillet Welds (Faitus)
- Vol. 28 Reactivity of Solids (Barret and Dufour)

CHAIRMEN OF THE PLENARY SESSIONS.

Monday August 27, 1984.

- Prs P. Kofstad and F.S. Stone.
- Prs R. Kern and J. Haber.

Tuesday August 28, 1984.

- Prs S. Mrowec and W.W. Smeltzer.
- Prs P. Hagenmuller and J. Szekely.
- Prs J. Bénard and V.V. Boldyrev.

Thursday August 30, 1984.

- Prs A.J. Burggraaf and R. Collongues.
- Prs W. Komatsu and V.S. Stubican.
- Prs A. Hérold and H.R. Oswald.

Friday August 31, 1984.

- Prs B. Delmon and J.B. Wagner Jr.

CHAIRMEN AND DISCUSSION LEADERS OF THE PARALLEL ORAL SESSIONS.

Session 1.

- Pr W.L. Worrell.
- Pr F. Gesmundo and Dr H.J. Grabke.

Sessions 2-4-8.

- Pr A. Hérold.
- Pr H.K. Cammenga and Dr A.J. Jacobson.

Session 3.

- Pr J.B. Wagner Jr.
- Dr R. Dieckmann and Pr S. Mrowec.

Session 5.

- Pr H.F.W. Taylor.
- Dr V. Johansen and Pr M. Soustelle.

Sessions 6-10.

- Pr A.J. Burggraaf.
- Prs R. Hoppe and T. Ishii.

Sessions 7-13.

- Pr A.K. Galwey.
- Prs P.J. Herley and J. Janowski.

Session 9.

- Pr V.V. Boldyrev.
- Pr S. Nativ.

Session 11.

- Pr H.R. Oswald.
- Prs M.A. Alario-Franco and M. Figlarz.

Session 12.

- Dr J. Nowotny.
- Prs J. Bardolle and F. Solymosi.

Sessions 14-15.

- Pr J.J. Fripiat.
- Prs B. Delmon and P.A. Sermon.

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