

INTRODUCTORY REMARKS

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The present volume of *Croatica Chemica Acta* is a record of the 5th »Ruđer Bošković« Institute's International Summer Conference on the *Chemistry of Solid/Liquid Interfaces*, held in Cavtat/Dubrovnik, Croatia, Yugoslavia, from June 25 to July 3, 1979. It is, once again, a special blend of original scientific contributions and review papers, of scientific originality and of tutorial presentations, all of them exemplifying an already traditional interdisciplinary forum of colloid, surface and electrochemical science.

The concept of this series of Conferences was conceived more than 10 years ago in order to fill a special void. There were at the time many well established conferences and symposia dealing with accurately defined topics. The Euchem Conferences were just initiated as a counterpart to the Gordon Research Conferences in the United States. The Faraday Discussions had an elite reputation for signaling scientific breakthroughs in several fields of physical chemistry, surface and colloid science, and chemical and electrochemical kinetics. The Czechoslovak Heyrovsky Discussions centered on polarography, electroanalytical chemistry, and inorganic complex mechanisms.

We have felt that all these conferences are strongly topical and dwell within one of the disciplines at a time. While most scientists feel the need for advanced treatises in a particular field, and while many of the established conferences have been proven as testing grounds for brand new ideas and theoretical and experimental accomplishments, there was a definite lack of an interdisciplinary settling ground, where the validity of these would be acid tested. It came as no surprise that the idea of crossfertilization between the various disciplines, dealing with solid/liquid interfaces, met with much enthusiastic support and was widely accepted. An essential ingredient of these conferences was the presence in the auditorium of students and research assistants many of them novices to the disciplines discussed. To a large part they remained silent participants except in the field of their prime and only interest. The lecturers were, however, still strongly influenced by the students. In exposing their most advanced ideas the lecturers tried to use the most straightforward approach and the simplest language. Thus, the barrier between the related, but still highly specialized disciplines was largely penetrated.

The first Conference held in 1969, in Cavtat was characterized by discussions on the theory of coagulation, and by presentations of the various refinements in the theory of the double layer¹. Dominated by these, the presentations of crystal growth, of electrocrystallization, and of the various kinetic aspects of chemical and electrochemical processes were just emerging within the intended scope of the proceedings. However, exactly these topics were

here to stay for the next, and for all the subsequent conferences including the present one. Indeed, the proceedings bear witness of the development of the theory and experiment in these fields.

It was already clear at the first Conference that too narrow a scope would soon exhaust the usefulness of such meetings. Thus, the next Conference had a preponderance of surface electrochemistry, and the electrochemistry of solid electrodes. Held in Rovinj in 1970, it retained the pattern of interdisciplinarity by tipping the scales to one of the three sister fields.²

The third Conference, held again in Rovinj, in 1972., introduced discussions of films at the solution/air interface, a hitherto neglected aspect of surface chemistry. The »old favourites« were there to stay, supplemented by a superb discussion of light scattering techniques and methodology applied to colloidal dispersions.

The fourth Conference was held in Cavtat in 1975. It was the occasion to summarize the traditional and prevalent philosophy of the Yugoslav School of Colloid Chemistry, which independent of the contemporary trends in colloid science, reached its international weight by presenting large numbers of simple experiments with unique possibilities of straightforward interpretations. In connection with the Conference, a two day Symposium on the Electrochemistry of Interfacial Phenomena was organized. Water, its orientation and role in the interfacial structure, was the topic of main interest.³

The 5th Conference, the proceedings of which are only partially reflected in the papers the authors decided to submit for publication, followed the well established pattern of interdisciplinarity. Oxide surfaces dominated the floor, although both the structure of interfacial water and the adsorption of macromolecules were strongly interpreted. The papers dealing with precipitation processes witness, in comparison with those presented ten years ago, how far this field has progressed from being an art, to claiming the prerogatives of exact science. Within the Symposium on Interfacial Phenomena in Colloid Systems theory had the floor. The emerging theory of nonequilibrium forces is gradually taking its place in interfacial science. It remains to be seen whether the experimental approach of surface modification and derivatization, or the theoretical approach, will in the short run bring us closer to the understanding of interfacial phenomena.

The unique conceptual frame of these Conferences was subject to many a critique, sometimes harsh, at times barely audible, sometimes constructive, occasionally less so. Even praise has been bestowed upon the organizers sparsely.

There is no way to satisfy all the needs of a discipline in communication by a single mode. The pressures on the organizers were to transform the Conferences into a national event, to open them for unlimited numbers of short contributions of 5 to 10 minutes duration in the national language, to provide for poster sessions, and finally to put overwhelming emphasis on applied problems in industry. Most of these suggestions and pressures for changes have been resisted for obvious reasons. There is a number of meetings, which would satisfy these requests both at the national and at the international level. Applied problems have already been expertly and strongly represented in the proceedings ever since the first Conference without compromising fundamental science. Short contributions were always solicited and obtained as a means of discussion on the basic topic presented by an invited lecturer.

And as far as excellence of presentation is concerned, no compromise has been even attempted. It has been envisaged that the next Conferences in this series will eventually be designed with a novel feature of a round table discussion, initiated by one or several topics, presented by invited speakers. In this sense there is hope that the Conferences on the *Chemistry of Solid/Liquid Interfaces* will continue to exist as an international forum of interdisciplinary scientific communication.

Each Conference is rather as good as the lecturers make it. It is our duty therefore to express our sincere thanks to the lecturers, both present here as authors, and to those who have contributed only orally, for their efforts which have significantly contributed to the international recognition of these meetings.

The science authorities of the Socialist Republic of Croatia, and the Yugoslav Federal Association of Science Authorities have shown much understanding for the concept and the results produced by the Conferences. They have also given financial support to the organizers in the Center for Marine Research of the »Ruđer Bošković« Institute, in establishing the role of this institution as a relay between the international scientific community and the industrial and economic structures of Yugoslavia.

Appreciation should be expressed for the less visible but essential contributions of many staff members of the Center and the Institute, without whose help the more visible organizers would fail in many aspects.

REFERENCES

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