
Foreword

The 2nd International Conference on the Basic and Applied Chemistry of f-Transition (Lanthanide and Actinide) and Related Elements (2nd ICLA) was held during 6–10 April, 1987, in Lisbon at the headquarters of the Calouste Gulbenkian Foundation; it followed the 1st ICLA which was held in Venice in September 1983.

The attendance was very high (340 scientists from 30 countries) showing the growing interest in the chemistry of the f-transition elements. Incidentally, this conference was held during the 200th anniversary of the discovery of Ytterbite.

The historical aspects of the two groups of elements were covered very completely in the two invited lectures given on them.

The scientific programme consisted of 29 invited lectures, 300 contributed posters and 4 round tables. The posters were distributed in the different sections as follows: Coordination Chemistry 25%, Solid State Chemistry 22%, Analytical and Environmental Chemistry 16%, Theory and Spectroscopy 16%, Reactivity and Catalysis 6%, f-Elements in Biology and Medicine 4% and Industrial Applications 3%.

The papers demonstrated the continued growing interest in the coordination chemistry and organometallic chemistry of the lanthanide and actinide elements, with a marked emphasis on the structure of the compounds as well as a continuing flow of new preparative work in which many of the products have been characterized by analytical and physical, but not X-ray crystallographic, means. The thermodynamics of complexation has not been neglected, an approach which is of help to future work in the area, including the applied fields. It is worth noting that the organometallic studies mostly involved ligands based on the cyclopentadienyl ring, but interesting redox reactions with these compounds were also described during the meeting and there was a separate section on the reactivity and catalytic behaviour of compounds of both groups.

The spectroscopic aspects, using a wide range of techniques, were reported for many f-element compounds with an accompanying array of theoretical treatments dealing with interpretations of the bonding and various aspects of the chemical behaviour of the f-elements concerned.

Solid state studies involving the metals, intermetallic species, oxides and other derivatives of both groups of elements received a good deal of attention, with the major emphasis on lanthanide systems, for which industrial applications are very likely.

Some aspects of the analytical chemistry of the elements of both groups were reported; the results can be of importance for separation chemistry. There was less emphasis on the environmental aspects of topics such as radioactive waste disposal and fall-out of lanthanides and actinides, although chemical treatments of certain waste solutions were reported in the section on industrial applications. This last section also included several contributions in the use of lanthanide metals and oxides in alloys and glasses. A special section was devoted to the behaviour and applications of the f-elements in biology and medicine.

Four panels were held on various themes, such as uranium as a non-nuclear element, reactivity and catalysis and future applications, crystal

growth of f-element materials and the new high T_c superconducting compounds. The reports of these panels will be published elsewhere.

In addition to all of the above specialized areas, the work on the f-elements at several well-known research institutions throughout the world was summarized. Thus during the meeting almost every possible aspect of the two groups of elements was reported, so that it can truly be said that there was something of interest for everybody present.

The success of this conference would not have been possible without the contribution of a group of staff members of the Department of Chemistry of the Laboratório Nacional de Engenharia e Tecnologia Industrial, the institution that sponsored the conference, and certainly the valuable advice of the members of the International Organizing and Scientific Programme Committees, in particular the Section Coordinators, which was much appreciated. We thank also The British Council, Calouste Gulbenkian Foundation, Luso-American Foundation, Junta Nacional de Investigação Científica e Tecnológica and UNISYS for financial support.

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Conference Chairman
