**Commission on Colloid and Surface Chemistry including Catalysis (I.6)**
**Report of activities - May 2001**

**Commission I.6** works on different tasks which can be grouped under the headings:
*Standardized Nomenclature and Methods,*
*Advanced Materials,*
*Environmental Protection .*
Projects of the Nomenclature and Methods group often also belong to the category of Advanced Materials.

## Standardized nomenclature and methods

"*Measurement and Interpretation of Electrokinetic Phenomena*" (Gonzalez-Caballero).
The first draft based on contributions of several members of the working party, has been discussed at a IUPAC workshop that was held as part of the international conference on Electrokinetic Phenomena in Dresden (October 2000). The comments were positive, but it became once more clear that the production of a recommendation document that covers the entire field of electrokinetics is not a simple task. A revised document is under preparation.

"*Glossary of terms in the photocatalysis and radiation catalysis*" (Parmon CI.6 and Bolton CIII.3).
For this project Commission I.6 has joint forces with Commission III.3 (photochemistry). The third draft of the document by Parmon and Bolton looks very promising and has been sent out for comments to experts in the field. The Glossary will be close to its final stage at the General Assembly in Brisbane.

"*Recommendations for the use of Atomic Force Microscopy in the Direct Measurements of Colloidal Forces*" (Ralston).
The reviews on this proposal are favorable and after some delay, due to the restructuring of IUPAC, the project is accepted by the PBCD. A first draft is expected by the end of 2001.

"*Manual of Symbols and Terminology for Physicochemical Quantities and Units: Appendix II: Definitions, terminology and symbols in colloid and surface chemistry - part 1: Colloid and surface chemistry",* by Everett, D.H. (*Pure Appl. Chem*. **31**, pp. 577-638, 1972)
This important manual has been made partially available at the IUPAC internet site. However, the quality of the reproduction is poor, therefore a better quality document (including minor revisions) is in preparation. The intention is that the revised document can easily be consulted through the IUPAC website, so that the general terminology in colloid and surface chemistry is directly available to chemists all over the world.

## Advanced Materials (nomenclature and methods)

"*Pillared clays and pillared layers*" (Schoonheydt)

This project focused on nomenclature is finished. The technical report is published in *Pure Appl. Chem.* **71**(12), pp. 2367-2371, 1999.

"*Nomenclature in Zeolites and New Microporous Crystalline Materials*" (Unger, Schoonheydt).
Both the title of this project and the working party have changed somewhat in the course of the project. The work has been done in close cooperation with the Structure Commission of the International Zeolite Association. The final output of the project is a recommendation document "*Nomenclature of structural and compositional characteristics of ordered microporous and mesoporous materials with inorganic hosts*" by McCusker, Liebau and Engelhardt in *Pure Appl. Chem.*, 73.2 (2001) 381-394. The paper will be cited in the new "Atlas of Zeolite Framework Types" as nomenclature recommendation. Moreover, publication in "Microporous and Mesoporous Materials", an international journal is planned.

"*Recommendation for the Characterization of Inorganic Membranes*" (Ma, Koopal).
This project has recently been accepted by the PBCD. As first activity a Workshop (June 2000, sponsored by C I.6) has been organized in conjunction with the Sixth International Conference on Inorganic Membranes in Montpellier (France). At the workshop several specialists in the field have given their views on different aspects of membrane characterization. A draft document is in preparation.

**Environmental Protection (sustainable development)**

Interaction platform for colloid and surface chemists and specialists in the field of environmental protection.

*"Environmental Protection: Surface, Colloid and Catalytic Aspects"* (J. Ralston)
This project comprised involvement in 3 meetings:
(1) "Colloids in the Aquatic Environment" (Gregory, London 1992, proceedings: *Colloids Surfaces A*, **73** (1993);
(2) "Soil Pollution" (Iyer, Madras 1994);
(3) "Environmental Catalysis" (Misono, Tokyo 1995, proceedings: *Catalysis Today*, **35**, 1-2, (1997). The project is completed.

*"Colloid Chemical and Catalytic Processes for the control and Protection of Environmental Pollution"* (L. K. Koopal, M. Misono, I. Dékány)
This project has been the focus of the IUPAC sponsored International Conference "Interfaces Against Pollution" (Wageningen 1997). The Proceedings, edited by de Keizer and Koopal, have been published in *Colloids and Surfaces* A, **151** (1999) 1-2. The project is completed.

"*Electrochemistry and interfacial chemistry in environmental clean-up and green chemical processes*" (Brett and Rusling CI.3 and Koopal CI.6)
This is an ICSU/IUPAC project. A Workshop, directed to specialists, scientists from developing countries and students concerned with environmental problems, has been held at 6-7 April 2001 in Coimbra, Portugal. Prior to the workshop a half day "Tutorial Course" of four introductory lectures has been offered. The workshop was

attended by 77 participants from 16 different countries worldwide. At the workshop 16 oral lectures and 41 posters were presented. At the end of the workshop a well attended panel discussion on sustainable development was held. The next activity is the production of the proceedings.

**Coordination**

An important part of the projects of Commission I.6 are connected with the nomenclature, preparation or characterization of *Advanced Materials*. Communication and coordination with other Commissions and Divisions in this field is effectuated through the Inter Divisional (limited-lifetime) working party "*Strategic Initiative in Materials*" co-chaired by Professor John Corish (Inorganic Division) and Professor Robert Gilbert (Macromolecular Division).
Communication and coordination of the projects in the field of *Environmental Protection* is done through the *Chemistry and Environment Division* (in particular by communication with Commission VI.1)

Luuk Koopal
Chairman C I.6