

## Editorial

A central component of each chemical sensor and biosensor in particular is its sensing system responsible for recognition of a target analyte as, among others, IUPAC emphasised in its recommendation report [D.R. Thévenot, K. Tóth, G. Wilson, Electrochemical biosensors: recommended definitions and classification, *Pure Appl. Chem.* 71 (1999) 2333–2348]. In sequence to this sensing system, a physicochemical transducer is connected that generates a measurable signal. In order to obtain sensing systems for selective and, even more important, specific sensing, surfaces of solid substrates of both chemical and biochemical sensors are modified according to dedication for the desired application. With these objectives in mind, the meeting Surface Modification for Chemical and Biochemical Sensing (SMCBS 2003) was organised in Białowieża, Poland, from November 13 to 16, 2003.

The meeting is part of the activity of Surface Phenomena and Reactions (SURPHARE; Contract No. G5MA-CT-2002-04034) Centre of Excellence in Competitive and Sustainable Growth Programme (Grow-2001-5.2) of the European Commission. The Centre was established (<http://ichf.edu.pl/surphare/main.htm>) in November 2002 through November 2005 at the Institute of Physical Chemistry of the Polish Academy of Sciences in Warsaw within the Fifth Frame Programme of the European Commission. Promotion of scientific activities and dissemination of new findings to a broad audience through meetings like this one and publications like this special issue are among the goals of this Programme.

For the purpose of combining research and teaching, the meeting had the structure of a workshop thus attracting distinguished scientists as well as graduate students, postdoctoral fellows, and researchers who wanted to enter the field or update their knowledge on recent developments in the rapidly growing area related to surface modification for chemical and biochemical sensing. A total of 70 participants coming from 17 countries in Europe, United States, and Canada had the opportunity to enjoy, besides discussions and exchange of ideas, 20 invited tutorial lectures delivered by prominent scientists, 11 keynote

lectures presented by internationally recognised researchers, and 14 short oral communications contributed by young researchers and graduate students.

The workshop was focused on the fundamentals of chemical sensors and biosensors, which comprise the art of recognition-oriented decorating of surfaces of solid substrates. It covered recent developments in the broad interdisciplinary research on various aspects of surface chemistry related to sensing and biosensing, including investigations of chemical surface reactions, structure and physicochemical properties of self-assembled monolayers, Langmuir and Langmuir–Blodgett films, thin polymer and oxide films, performance of chemically modified electrodes and polymer modified electrodes in particular, development of detection techniques, as well as novel instrumentation for surface probing, signal transduction and processing.

The present special issue contains papers based upon the contributions presented at the workshop. Several participants have recapitulated their oral presentations in the form of a paper for this special issue. Review articles summarise the applications of lipidic cubic phases for electrode modification, application of microsystem technology for the development of sensing nanodevices, as well as design, synthesis and characterization of monomolecular interfacial layers. Original papers address several fundamental aspects of surface modification with an ultimate goal of sensor development. They include, among others, the DNA film investigations involving the AFM imaging of DNA films under potential control, DNA hybridisation, DNA surface immobilization for the development of affinity biosensors, and an application of the DNA electrochemical biosensor to the study of the degradation kinetics of an anaesthetic drug. Original papers related to cytochrome *c* include its surface immobilization and investigations of its properties in films of the fullerene polymer, films of TiO<sub>2</sub> phytate, and Langmuir–Blodgett films of Nafion and Eastman AQ 55.

It is my pleasure to thank all the authors who contributed to the special issue. All papers were peer-reviewed, and the help of many colleagues who assisted in the reviewing process is gratefully acknowledged. I hope that not only workshop participants, but also all readers will find the

papers both interesting and useful. These papers reflect the open and interactive spirit present throughout the workshop, which was certainly aided by the beautiful surroundings of the wonderful conference venue at the outskirts of the Białowieski primeval national forest and the lively social events. All these activities would not have been possible without the support of the European Commission through the SURPHARE Centre of Excellence. Both participants and organisers are grateful to these organisations, as well as

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