- specialists in chemical education and education in general, to design effective ways of acquainting students with all the aspects of the problem
- specialists in territorial economy and communities studies, to evaluate the territorial contexts in which and purposes for which biomass burning is practiced, to identify optimal time and hierarchy sequences for its replacement with alternative options (targeting firstly contexts other than subsistence agriculture), and to participate in the design of options for subsistence agriculture that will not penalize it, but will be to its advantage
- specialists in fostering community participation, because any alternatives to existing practices need to be presented to communities in an informative way that helps to gain their consent; and because interesting suggestions for alternative options might come from communities

The proposed book is meant as a resource offering new insights on the issue of biomass burning in sub-Saharan Africa. It will include contributions from different countries in the region and will be prepared in such a way as to be accessible to students. Given the envisaged characteristics of the book, the contributions are not expected to duplicate research articles as published in research journals. Rather, they are expected to utilize research outcomes to explore:

- relationships between outcomes of different individual research (including comparisons and other investigations relevant to a better understanding of the subcontinental nature of the problem)
- possible alternative options to the current practice of biomass burning, taking simultaneously into account the needs of the environment and the need that subsistence agriculture be sustainable
- the role of chemistry and chemists in designing alternative options, predicting their impacts, and proposing/designing their implementation

By proposing to attract attention and disseminate information on the chemical aspects related to biomass burning and to the search for viable alternative options, the planned book is in line with green chemistry objectives and attitudes, above all in terms of pollution prevention (avoidance of the emission of gases, particles, and heat into the atmosphere) and economy-sound utilization of renewable resources (maximization of the products/benefits that can be obtained from biomass through options that are not purely destructive).

Finally, the book is also meant to serve as a prototype/model for analogous projects focusing on problems identified as "priority ones" for other groups of countries, subcontinents, or continents. Projects of this type would have a common set of motivations and objectives:

- selecting a problem that is of particular relevance for a large area
- highlighting the aspects that are common to the whole area
- devoting special attention to the chemical aspects of the problem and to the roles of chemistry in designing options to address the problem and ways of implementing them

This envisaged prototype role adds to the challenges of the project and to the motivations for pursuing quality in its realization, and expands its potential significance.

For more information and comments, please contact Task Group Chairperson Liliana Mammino <liliana@univen.ac.za>.

www.iupac.org/projects/2007/2007-025-1-300.html

Green Chemistry, Sustainable Development, and Social Responsibility of Scientists

The more than 3 000 chemists who came to Moscow in September this year to participate in the XVIII Mendeleyev Congress on General and Applied Chemistry had a chance to enjoy a true Indian summer—in Russia, known as a "woman's summer." The Congress was held in the headquarters of the Russian Academy of Sciences, situated in the green, southwest part of the city, not far from the bank of the Moskva river. From there, participants could enjoy the colors of the turning leaves, which seemed to emphasize the beauty of nature and our role in protecting it. So it was only fitting that during the congress, the international symposium on Green Chemistry, Sustainable Development, and Social Responsibility of Scientists took place.

The symposium was financially supported by the Russian Academy of Sciences, IUPAC, OPCW, the European Commission (through the Russian Regional Environmental Centre), and the Institute of Chemistry and the Problems of Sustainable Development at D. Mendeleyev Univ. of Chemical Technology of Russia.

The symposium had several goals:

- disseminating new educational materials related to responsible stewardship, and showing the necessity and practicality of including "green" chemistry principles in chemical education
- emphasizing the social responsibility of scientists in promoting sustainable development, both in developed and developing countries
- promoting all aspects of chemistry, not just among the members of the profession but, increasingly, to the worldwide community, and contributing to the public's understanding of chemistry.

Undoubtedly, the symposium has helped to facilitate the exchange of information among scientists, educators, and decision makers; helped promote awareness about the Chemical Weapons Convention (CWC) and its implementation in the scientific community; and has provided additional impetus to developing a culture of responsibility within the scientific community and encouraging compliance with international norms, including the CWC.

Chemistry plays a critical role in sustainable development because progress of new technologies is inextricably tied to the progress of modern civilization. We live in a world completely grounded on chemistry: everything that we are and do is controlled by chemistry. Fortunately, there are many chemical educators, well trained in environmental issues, who would like to take the next step and contribute to the development of education related to sustainable development, as was evidenced at this symposium.

The symposium featured presentations from more than 120 speakers from academia, international organizations, research organizations, and chemical companies from Russian and the Commonwealth of Independent States as well as from Australia, Canada, Great Britain, Italy, and the United States. The presentations addressed several themes:

- practical applications of green chemistry in scientific research and practice
- introduction of principles of green chemistry into classical chemical education
- the risks and safety of chemical processes, and the safe destruction of chemical weapons
- environmental management and the social responsibility of professional chemists
- environmental education as a part of education for sustainable development

In the opening session, Pietro Tundo, Valery Petrosyan, Peter Mahaffy, and Mary Kirchhoff each made clear presentations describing the challenges and opportunities of green chemistry. In the technical sessions, the key themes of the symposium were discussed in depth. In fact, the presentation made by E. A. Mamontova (Institute of Geochemistry of SB of RAS, Irkutsk, Russia), entitled "The Problem of POPs in Lake Baikal and the Lake Baikal Region," generated such a great number of questions concerning the responsibility of chemists for environmental risks that the chairs of the session had to limit the questions.

Two poster prizes were awarded at the symposium recognizing young chemists:

- "The Synthesis of Extended Porphyrins in Aqueous Microemulsions," by S. Chernov, A. Cheprakov, and I. Beletskaya, Chemistry Department, Moscow State University, Moscow, Russia
- "Synthesis of Alkoxysilylated Humic Derivatives and Their Immobilization Onto Mineral Surfaces," by L.A. Karpiouk, I.V. Perminova, S.A. Ponomarenko, and A.M. Muzafarov.

Much of the discussion during the symposium centered on the following topics:

- the necessity of introducing the principles and methods of "green" chemistry into chemical education, both at the university and the high school level
- the role of chemical education in understanding global environmental problems
- the movement from environmental education to education for sustainable development
- the safe destruction of chemical weapons
- opportunities for the resolution of regional environmental problems by methods of "green" chemistry
- legal questions of environmental management and the social responsibility of chemists

- the search for new chemical methods and recipes of for "green" chemistry processes that can help solve environmental problems and help in the safe destruction of chemical weapons

The following recommendations emerged from the symposium:

- chemists should work together in a spirit of humanism and tolerance to help achieve sustainable development, and that ethical principles guiding the professional work of chemists should be outlined in a code of conduct
- principles of green chemistry should be used in scientific research and brought into industrial development
- principles of sustainable development and green chemistry and should be introduced into chemical education at the grade school, high school, and university levels
- education related to sustainable development should include chemical education as a way of adequately understanding the processes taking place in the environment
- "green" chemistry methods should be used to create new, safe technologies for the destruction of chemical weapons
- the fundamental principles of chemical education should be preserved, and that they should be connected with the problems of sustainable development (i.e., environmental problems, problems of energy and resource conservation , and the social and ethics aspects of development)
- M.V. Lomonosov Moscow State University's initiative to organize the second International IUPAC Conference on green chemistry should be supported

For detailed information on the congress, see <www.chemend.ru>.

For more information and comments, please contact Task Group Chairperson Natalia Tarasova <nptar@online.ru>.

www.iupac.org/projects/2006/2006-043-3-050.html

Provisional Recommendations

Provisional Recommendations are drafts of IUPAC recommendations on terminology, nomenclature, and symbols made widely available to allow interested parties to comment before the recommendations are finally revised and published in Pure and Applied Chemistry.

www.iupac.org/reports/provisional

Glossary of Terms Used in Pharmaceutics

This Glossary of Terms in Pharmaceutics is needed by practitioners in the field of pharmaceutics—a field that fulfills an important and crucial role, different from the roles of other scientific disciplines involved in the drug-making process. The glossary contains 156 definitions used in pharmaceutics. These are related to various aspects of this discipline such as 1) physicochemical characterization of pharmaceutical preparations and the active ingredients they contain; 2) unit operations used in the practice of pharmaceutics; 3) terms related to the various dosage forms; 4) terms related to the various modes and routes of drug delivery; and 5) terms used in pharmacokinetics and biopharmaceutics in general, and additional miscellaneous terms. Since the field of pharmaceutics is multidisciplinary, with practitioners from a variety of fields such as chemistry or various biological sciences, a glossary containing authoritative definitions would be useful to them. The terms used in pharmaceutics are rarely covered by existing glossaries, and in cases were they are, their definitions are often inappropriate for the field of pharmaceutics and require new or modified definitions to better fit the new context.

Comments by 30 April 2008

Prof. Eli Breuer
Hebrew University of Jerusalem, Department of Medicinal Chemistry, P.O. Box 12065, IL-91120 Jerusalem, Israel
TEL.: +[972] 2 675 8704
FAX: +[972] 2 675-8934
E-MAIL: breuer@cc.huji.ac.il

www.iupac.org/reports/provisional/abstract07/breuer_300408.html