

## The Project Place

are now so large (5 of the largest 10 companies in the world are oil companies) that they appear to be more powerful than state governments.

The objective of this new IUPAC project is to publish a book that first considers the reasons for developing alternate forms of energy and then details all the possible forms available to us. Each chapter of the book will be written by an engineer or scientist working in the field.

Each of the book's 22 chapters will detail a form of energy that will be available to us, globally, over the next few decades. The review will focus on all types of energy available to us, taking into account our major problems: reducing our dependence on fossil fuel, reducing the amount of carbon dioxide we produce, and finding a suitable fuel for our transportation system.

The book will be unique among available titles in the same genre because each chapter will be written by a scientist or engineer who is an expert in his or her field. Each chapter highlights the details, scope, and problems associated with a particular type of energy. New and emerging forms of energy will be covered, including wave power, tidal energy, recent developments in battery and fuel cell technology, the hydrogen economy, tar sands, wind energy, solar (concentrated), solar (photovoltaic), and geothermal. However, old forms of energy will not be forgotten and there will be chapters on the latest improvements in coal burning, oil and gas burning, oil from coal and methane technology, bio-fuels, carbon dioxide capture and storage, hydroelectric power, and nuclear fission. Areas of great potential that have not yet come of age, such as pebble bed nuclear reactors, methane gas hydrates, energy storage, and nuclear fusion, are also dealt with. Looking at the whole spectrum of options in the book, it should be possible to discern which forms of energy best suite us now and in the future.

This book is part of the education process needed to boost public appreciation and understanding of science. It will present a non-political and unemotional

set of solutions to the problems facing us—and it will offer a way forward. We hope that the book will be of interest to students, teachers, and professors and researchers of new energy, as well as politicians, government decision makers, captains of industry, corporate leaders, journalists, and editors.

For more information, contact the Task Group Chair Trevor Letcher <trevor@letcher.eclipse.co.uk>.

 [www.iupac.org/projects/2007/2007-015-2-100.html](http://www.iupac.org/projects/2007/2007-015-2-100.html)

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### Green Book: Abridged Version

The new project "Green Book: Abridged Version" aims at creating a condensed version of the third edition of the *Green Book—Quantities, Units, and Symbols in Physical Chemistry*\*—that will consist of only 40 to 50 pages and be more suitable for university teaching and continuing education in an industrial context. The project aims to support the typical contents of physical chemistry at the university level by restricting the range of topics covered in the Green Book to those that are most important for students: general chemistry, thermodynamics, kinetics, spectroscopy, and basic physics. This "light" version of the Green Book will focus on examples of best practices in the use of terminology, quantities, and units and their symbols and will be made available both as printed material and via the Web.

\*[www.iupac.org/publications/books/author/cohen.html](http://www.iupac.org/publications/books/author/cohen.html)

For more information and comments, please contact Task Group Chairperson Roberto Marquardt <roberto.marquardt@chimie.u-strasbg.fr>.

 [www.iupac.org/projects/2007/2007-032-1-100.html](http://www.iupac.org/projects/2007/2007-032-1-100.html)

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### Postgraduate Course in Polymer Science

The 12th and 13th runs of this course will be held in the academic years 2007–2008 and 2008–2009 at the Institute of Macromolecular Chemistry, Academy of Sciences of the Czech Republic, in Prague. The courses are sponsored by UNESCO with minor financial assistance from the Academy of Sciences of the Czech Republic. The institute, with more than 100 scientists and offering more than 40 years of experience in postgraduate education, offers up-to-date facilities



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for postgraduate training in polymer science.

Between 5 and 13 students have participated in the 11 sessions of the course that have been so far completed, with the number of students varying based on the funds that have been available. The course lasts 10 months and comprises about 50 hours of lectures in modern polymer science, including an introduction to the nomenclature and terminology recommended by IUPAC, experimental work on research projects under the supervision of senior scientists of the institute, and participation in all educational activities within the institute. The results of the research are published in international technical journals and presented at meetings. All told, the course has had 85 participants and boasts 119 papers published in international journals and 167 communications at international meetings.

This project is supported by IUPAC and is intended to enable young university graduates and Ph.D.s from countries with limited research facilities to acquire knowledge on recent advances in polymer science and given them the professional skills needed for to promote polymer science in their home countries.

For detailed information on the course, see [www.imc.cas.cz/en/imc/unesco.html](http://www.imc.cas.cz/en/imc/unesco.html).

For more information and comments, please contact Task Group Chairperson Pavel Kratochvíl <[krat@imc.cas.cz](mailto:krat@imc.cas.cz)>.

 [www.iupac.org/projects/2007/2007-049-1-400.html](http://www.iupac.org/projects/2007/2007-049-1-400.html)

### Chemical Issues in Biomass Burning in Sub-Saharan Africa

A new project, endorsed by the IUPAC Subcommittee on Green Chemistry, proposes the preparation of a collaborative book exploring all the aspects relevant to biomass burning in sub-Saharan Africa, with special focus on the chemistry aspects.

Biomass burning implies emission of combustion products into the air (including greenhouse gases) and the waste/loss of biomass that could be utilized as valuable material resource. The extent of biomass burning in sub-Saharan Africa, and the complexity of the aspects involved, constitutes an important motivation to view it as a problem deserving priority attention and careful multisided investigation at the subcontinental level.

Chemistry can have multisided roles in its investigation, including:

- evaluation of the emission of combustion products into the air, and the comparison of its extent

with that of other pollution sources, to view the problem within a comprehensive picture of pollution-generating activities

- analysis of the impact on the humus composition and properties, an evaluation of actual or expected benefits, and the search for ways to ensure that any actual benefit will not be lost within alternative options
- estimation of the waste/loss of biomass
- design of alternative options and the estimation of their expected benefits and impacts

Important contributions to the understanding of the various aspects of the problem, and of the interconnections between them, can be expected from professional interactions between chemists and other specialists. It will be important for a variety of specialists to be involved, including:

- specialists in agriculture, because biomass-burning is extensively practiced in areas devoted to agriculture; therefore, the design of viable alternative options has to consider agriculture-related needs, with particular attention to subsistence agriculture
- specialists in forestry, because the needs of forests and reforestation initiatives may be different from those of areas devoted to agriculture
- meteorologists, for the consideration and estimation of the impact, on climate, of the emissions from biomass burning



*Bush Fires in Southern Mozambique. Winter is the dry season in southern Africa and fires are set to hasten the greening of the grass shoots for cattle grazing. Source: Image Science and Analysis Laboratory, NASA-Johnson Space Center.*