S10-01

The "Taoism" of Developing Green Chemistry for Multi-step Synthesis

Chao-Jun Li, Department of Chemistry, Tulane University, New Orleans, Louisiana, 70118 USA. Tel: 504-8623574; fax: 504-8655596; email: cjli@tulane.edu

When designing strategies for multi-step synthesis, some fundamental skills include the delicate balance of protection and deprotection, the choice of oxidation and reduction, and the change of acidity and basicity. The teachings of "Taoism" gave us a concept that would be beneficial for pursuing the goals of green chemistry in developing multi-step synthesis. Examples were shown to illustrate such a strategy.

S10-02

Recent Electrochemical Contributions to Green Chemistry – *Will They Enhance Sustainability?*

Hermann Pütter, GCI/E - M311, BASF AG, 67056 Ludwigshafen, Germany
Tel 049 62160 45437, Fax 049 62160 79985, hermann.puetter@basf-ag.de

Electrochemistry is an established tool for chemical production. Electrochemical processes oxidations and reductions have a reputation to be „clean" and efficient and many new reactions are illustrative examples for Green Chemistry. Electrochemists found new and exiting ways to improve the energy-efficiency and atom-efficiency of many electrosyntheses and electrolyses. Electrochemical technologies also help to solve environmental problems. They can save precious resources, for example water, thus benefitting areas in which it is in short supply. How can we integrate these tools into a sustainable society?

S10-03

Novel Biocatalytic Processes for the Production of Semisynthetic Opiate Drugs

Neil C Bruce, CNAP, Department of Biology, University of York, PO Box 373, YORK, YO10 5YW, United Kingdom
01904 328777, Fax 01904 328801, ncb5@york.ac.uk

The morphine alkaloids are the major alkaloid components of the opium poppy *Papaver somniferum* and these compounds provide some of the most important painkilling drugs in clinical use. The morphine alkaloids are a structurally complex group of compounds with multiple sensitive functionalities. The stereochemistry at their several chiral centres is pharmacologically critical. The difficulties inherent in any potential synthesis of compounds of this sensitivity and complexity, combined with the ready availability and purification of plant-derived material, have thus far prevented any total synthesis from finding commercial application. ?

S10-04

Green Catalytic Processes with Ionic Liquids/Supercritical Carbon Dioxide Media

Giancarlo Franciò and Walter Leitner

Institute for Technical Chemistry and Macromolecular Chemistry, RWTH-Aachen
Worringerweg 1; 52056 Aachen; Germany
Tel: + 49-(0)241-80 264 88; Fax : +49-(0)241-80 22 177;
E-mail: francio@itmc.rwth-aachen.de

Ionic liquids (ILs) are emerging as valuable reaction media for catalytic transformations. They are characterized by excellent thermal and chemical stabilities (including air and H_2O-tolerance) and good solvent properties.