



Kemijski inštitut
Ljubljana
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VABILO NA INŠTITUTSKO PREDAVANJE / INVITATION TO THE INSTITUTE LECTURE

Dr. Roland Wohlgemuth

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Četrtek/ Thursday, 11. 9. 2008, ob / at 13:00

Velika predavalnica Kemijskega inštituta / Lecture Hall at the
National Institute of Chemistry; Hajdrihova 19, Ljubljana

Opportunities and Frontiers in Selective Biocatalytic Reactions for Sustainable Chemistry

The atom and step economy of molecular transformations as well as safety, health and environment issues are key drivers for process improvements in chemical industry. The exact build-up of functional groups within a complex molecule without auxiliary chemistry is still representing a synthetic challenge today. Auxiliaries, activating and protecting groups increase stoichiometrically the amount of waste per unit of product. Therefore the development of highly selective biocatalytic reaction methodology is of much current interest globally. This can be performed easily in any chemistry laboratory and needs no protecting groups at all. The industrial realization of biocatalytic chemo- and enantioselective reaction steps like hydrolytic reactions, oxidations, reductions and carbon-carbon bond formation reactions has been decisive in the synthesis of many important products. The availability of these new biocatalytic tools and ingredients for single biocatalytic reaction steps has opened new opportunities in the synthetic design of related compounds. The interface of the biocatalytic reaction with the preceding and sub-sequent step in a total synthesis offers many new opportunities for short routes to densely functionalized molecules. The elucidation of the metabolic pathways utilized by nature for the synthesis of highly complex molecules, the discovery of novel bio-catalysts and their properties and functions are key frontiers towards the advancement of selective reactions in order to make chemistry more sustainable.

Vljudno vabljeni! / Kindly invited!

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