General Director of RCPTM cordially invites you to the lecture in the framework of RUDOLF ZAHRADNÍK LECTURE SERIES

This talk will be delivered by

prof. Niyazi Serdar Sariciftci
Johannes Kepler University Linz

"Organic and bio-organic systems for solar energy conversion and CO2 recycling"

Wednesday, April 11, 2018, 12:00 a.m., assembly hall of Faculty of Science, 17. listopadu 12, Olomouc.

Prof. Sariciftci is Ordinarius Professor for Physical Chemistry and the Founding Director (Vorstand) of the Linz Institute for Organic Solarcells (LIOS) at the Johannes Kepler University of Linz/Austria. He studied at the University of Vienna (Austria) and graduated as PhD in physics in 1989. After two years postdoctoral study at the University of Stuttgart (Germany) he joined the Institute for Polymers and Organic Solids at the University of California, Santa Barbara, USA, by Prof. Alan J. HEEGER, Nobel laureate 2000 for Chemistry. His major contributions are in the fields of photoinduced optical, magnetic resonance and transport phenomena in semiconducting and metallic polymers. He is the inventor of conjugated polymer and fullerene based "bulk heterojunction" solar cells. Prof. Sariciftci published almost 600 publications and with almost 50000 citations he is one of the most cited scientists in material science (2011, Thomson Reuter ranking No: 14 of the world in material science, h=93).

Abstract: Organic photovoltaic cells are maturing from the academic research into the industrial development, entering the markets. Pure organic nanostructures and organic/inorganic hybrid nanostructures are comparatively studied for such devices. This talk gives an overview of materials' aspect and devices. In order to account for a sustainable future, the application of biodegradable and biocompatible systems for organic optoelectronics are needed. The use of cheap electronic devices in a large scale will introduce a “consumable electronics” into the market of “consumer electronics”. Therefore, environmentally friendly materials are important to use. This is a next great challenge to material science in organic electronics. New developments of bio-inspired and/or bio-origin, biocompatible materials from our institute will be reported. Such materials can also be used to interface the biological and biomedical research with the organic electronics field. Last but not least the conversion of CO2 to methane (or other synthetic fuels) using solar energy is an important step to make an efficient, large scale energy storage. At the same time this will make a cyclic and sustainable CO2 economy. We report organic as well as bio-organic catalysts which can be used in photo-electro-catalytic conversion devices. Such bio-catalysts can be enzymes as well as living bacteria immobilized on electrodes. Selectivity of such bio-catalysts is very high and combined with the room temperature operation of such bio-electro-catalytic systems makes them industrially highly attractive.