

# **BIG** energy seminar series

Addressing global energy challenges in scale and complexity.



## ***Organic and Bio-organic Electronic Devices***

Professor

N. Serdar Sariciftci

*Linz Institute for Organic Solar Cells (LIOS), Physical Chemistry,  
Johannes Kepler, University Linz*

**Date:** Tuesday, January 30 at 12:30pm

**Location:** Discovery Learning Center, Room 1B70 [CAMPUS MAP](#)

### **Abstract:**

Organic electronic devices are maturing from the academic research into the industrial development, entering the markets. 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, bio-compatible materials are interesting. 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 CO<sub>2</sub> 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 CO<sub>2</sub> 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.

### **Bio:**

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 photo induced 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 over 600 publications and with over 50000 citations he is one of the most cited scientists in material science (2011, Thompson Reuter ranking No: 14 of the world in material science, h=91).



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