

1. PREFACE

Vorwort

The year of 2008 was in the beginning dominated by the international symposium “Towards Organic Photovoltaics” which took place in February 6-8, 2008 at the Johannes Kepler University. The full documentation of this conference is displayed at our homepage www.lios.at with video streams of the full lectures of invited plenary lecturers Dr. Laurence Lutsen (IMEC, Belgium), Prof. Dr. Alan Heeger (Univ. of California, Santa Barbara), Prof. Dr. Niyazi Serdar Sariciftci (LIOS, Linz, Austria), Prof. Dr. Michael Grätzel (EPFL Lausanne, Switzerland), Prof. Dr. Paul Alivisatos (Univ. of California, Berkeley), Prof. Dr. Karl Leo (IAPP, TU Dresden, Germany), Dr. Albert Plessing (Fa Isovolt, Austria), Dr. Jan Kroon (ECN, The Netherlands).

Our new project “solar fuel” officially started in March 2008. In this project we address to important problems of the renewable electrical energy production: the storage of energy and the transport of energy. Electrical photovoltaic energy production (as well as wind power etc.) will face sooner or later the problem of energy storage and transport over large distances. For this purpose, a chemical substance, produced by the renewable energy conversion may play a decisive role. Pure hydrogen production via electrochemical water splitting is, of course, a straight forward idea as chemical fuel production, which has been pursued worldwide in many institutions. However, hydrogen gas has the same problems as electrical energy: storage and transport is problematic. We have decided to go for the hydrocarbon based synthetic fuels. For this purpose, we have to capture and recycle CO₂ from the atmosphere and/or concentrated sources such as chimneys of coal based power plants. This CO₂ shall be recycled to an artificial fuel using renewable energy such as photovoltaics. The new spin of company of LIOS together with Austrian private investors is named “Solar Fuel GesmbH” (www.solar-fuel.com) and already fully engaged in research and technology. In the next two years the feasibility and proof of existence of this idea shall be demonstrated in a small scale prototype apparatus. Together with the Institute of Inorganic Chemistry at the Johannes Kepler University as well as German and Swiss partner institutions and companies this “Solar Fuel” project is now fully started in the year of 2008.

Linz, February 2009

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