FRIEDRICH-SCHILLER-
UNIVERSITÄT
JENA
Chemisch-Geowissenschaftliche Fakultät

CEEC JENA
Center for Energy and Environmental Chemistry Jena (CEEC Jena)

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Chemisch-Geowissenschaftliche Fakultät

Institut für Organische Chemie und Makromolekulare Chemie

Laboratory for Organic and Macromolecular Chemistry (Lehrstuhl II)

http://www.ceec.uni-jena.de/

Jena, 2. März 2018

EINLADUNG

Am Donnerstag, **12. April 2018**, spricht um **15:00 Uhr**
im Hörsaal des ZAF, Philosophenweg 7, 07743 Jena

Herr Prof. Dr. Christoph J. Brabec

Friedrich-Alexander-Universität Erlangen-Nürnberg
Dept. of Materials Science and Engineering

zum Thema

"Material's Genome Challenges in Functional Material Research: Researching High Throughput Methods for Device Engineering"

gez. Prof. Dr. Ulrich S. Schubert

Es handelt sich um eine gemeinsame Veranstaltung des Center for Energy and Environmental Chemistry Jena, (CEEC) und des Jena Center for Soft Matter *(JCSM)* der FSU Jena.

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Curriculum Vitae

Christoph J. Brabec is holding the chair “materials for electronics and energy technology (i-MEET)” at the materials science of the Friedrich Alexander University Erlangen-Nürnberg. Further, he is the scientific director of the Erlangen division of the Bavarian research institute for renewable energy (ZAE Bayern, Erlangen), board member of the ZAE Bavaria and board member of the Energy Campus Nurnberg.

He received his PhD (1995) in physical chemistry from Linz university, joined the group of Prof Alan Heeger at UCSB for a sabbatical, and continued to work on all aspects of organic semiconductor spectroscopy as assistant professor at Linz university. He joined the SIEMENS research labs as project leader for organic semiconductor devices in 2001, finished his habilitation in physical chemistry in 2003 at Linz university and joined Konarka in 2004, where he was holding the position of the CTO before joining Friedrich-Alexander University Erlangen-Nürnberg.

Abstract:

Solution processed semiconductors play an essential role in the future renewable energy scenarios where power generation by photovoltaics will be one of the pillars for the world´s clean energy supply. The printed organic photovoltaics technology has evolved from the 1 % regime in the 90s to the 10 % regime nowadays. Perovskite semiconductors have lead the efficiency pathway of printed semiconductors beyond the 20 % regime. Most interestingly, some candidates of the most recent generation of high performance materials show a number of unforeseen microstructure related degradation mechanisms, which are closely related to their performance.

Recent advances in material and device processing have opened a venue to introduce high-throughput and combinatorial methods into the photovoltaics research. First experimental investigations underpin the complexity to introduce high throughput systematics as a concept for device engineering as compared to material designing. The last part of the presentation will introduce into the concept of robot based systems as a hardware platform for high throughput device engineering.