



Alexander von Humboldt-Lecture

Alexander von Humboldt
Stiftung/Foundation

15.07.2014 | 16 Uhr c.t.
Rotunde | Cartesium

VORTRAG

Integrated Circuits for the Life Sciences

Microfluidic Biochips: Towards Functional Diversity and More than Moore

William H. Younger Distinguished Professor of Engineering

Prof. Krishnendu Chakrabarty, Ph.D.

Duke University | School of Engineering | USA

Advances in microfluidics have led to the emergence of biochip devices for automating laboratory procedures in biochemistry and molecular biology. These devices enable the precise control of nanoliter-volume droplets of biochemical samples and reagents. Therefore, integrated circuit (IC) technology can be used to transport "biochemical payload" for life science applications. As a result, non-traditional biomedical applications and markets (e.g., high-throughput sequencing, point-of-care clinical diagnostics, drug discovery), and fundamentally new uses are opening up for ICs and systems.

After an overview of market drivers and technology platforms, Prof. Chakrabarty will describe how design techniques can be used to map biochemistry protocols to biochips such that on-chip biochemistry can be carried out. The role of the microfluidic platform as a "programmable and reconfigurable processor" for biochemical applications will be highlighted. Finally, Prof. Chakrabarty will describe quality-assurance techniques and dynamic adaptation through a combination of cyber-physical system integration and sensor-driven error recovery.



Programm

- 16.15 Uhr **Begrüßung**
Prof. Dr. Scholz-Reiter
Rektor der Universität Bremen
- Einführung**
Prof. Dr. Rolf Drechsler
AG Rechnerarchitektur | Einladender Professor
- Vortrag**
Prof. Krishnendu Chakrabarty, Ph.D.
Duke University, USA
- ca. 17.00 Uhr **„Get-Together“**
mit dem Preisträger bei einem kleinen Snack

ANMELDUNG

Um Anmeldung wird gebeten bei:
Frau Semken (semken@informatik.uni-bremen.de | Tel: 0421 / 218 - 63930)