



informatik-Kolloquium

Der Fachbereich Informatik der Johannes Kepler Universität Linz¹ lädt in Zusammenarbeit mit der Österreichischen Gesellschaft für Informatik (ÖGI) zu folgendem Vortrag ein:

- Topic: **Quo Vadis Microfluidic Biochips? Bridging the Gap between Microfluidics and Microbiology**
- Presenter: **Prof. Krishnendu Chakrabarty**
Electrical and Computer Engineering, Duke University, Durham, USA
- Datum: **Tuesday, August 8th 2017, 16:00**
- Location: **Johannes Kepler University Linz, Science Park 3, S3 058**

Abstract: Microfluidics is transforming microbiology research by providing new opportunities for high-throughput sample preparation and point-of-care diagnostics. Over the past decade, several design-automation (synthesis) techniques have been developed for on-chip droplet manipulation. However, these methods oversimplify the dynamics of biomolecular protocols and they have yet to make a significant impact in biochemistry/ microbiology research, leading to a large gap between advances in biochip design and the adoption of biochips for running biomolecular protocols. In this talk, I will explore a pathway to bridge this gap by introducing a new paradigm for biochip design automation. I will describe synthesis solutions that use realistic models of biomolecular protocols to address real-world microbiology applications through cyberphysical adaptation. This talk will conclude with a vision for continued research on design-automation and optimization methodologies for the realization of biomolecular protocols using microfluidic biochips.

Short Bio: Prof. Chakrabarty received the B. Tech. degree from the Indian Institute of Technology, Kharagpur, India in 1990, and the M.S.E. and Ph.D. degrees from the University of Michigan, Ann Arbor in 1992 and 1995, respectively, all in Computer Science and Engineering. During 1990-95, he was a research assistant at the Advanced Computer Architecture Laboratory of the Department of Electrical Engineering and Computer Science, University of Michigan. During 1995-1998, he was an Assistant Professor of Electrical and Computer Engineering at Boston University. Krish Chakrabarty has been at Duke University since 1998. His current research is focused on: testing and design-for-testability of integrated circuits (especially 3D and multicore chips); digital microfluidics, biochips, and cyberphysical systems; optimization of digital print and production system infrastructure. His research projects in the recent past have also included chip cooling using digital microfluidics, wireless sensor networks, and real-time embedded systems.

*Einladender: Univ.-Prof. Dr. Robert Wille
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¹ Der Fachbereich (<http://informatik.jku.at>) besteht aus folgenden Instituten:
Application Oriented Knowledge Processing (FAW), Bioinformatics, Computational Perception, Computer Architecture, Applied Systems Research and Statistics, Computer Graphics, Formal Models and Verification, Networks and Security, Integrated Circuits, Pervasive Computing, Software Systems Engineering, System Software, Telecooperation, Signal Processing