

SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING

Faculty of Engineering

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Area: Microelectronic Technologies & Devices

Host: Assoc. Prof Vincent C Lee

TOPIC	:	Optofluidics from A(daptive) to Z(oom)
SPEAKER	:	Prof. Hans Zappe, Gisela and Erwin Sick Chair for Micro-optics Department of Microsystems Engineering University of Freiburg Germany
DATE	:	19 December 2019, Thursday
TIME	:	10am to 11am
VENUE	:	E5-03-20, Engineering Block E5, Faculty of Engineering, NUS

ABSTRACT

Optofluidics uses the bulk and interfacial properties of liquids to achieve a wide spectrum of optical functionality. This technology has led to the realization of a wide spectrum of devices including tunable lenses; adaptive optics; optical switches; liquid lasers; and tunable apertures.

We will consider here recent advances in the use of optofluidics for highly-advanced optical imaging systems. These include individual and multiple tunable lenses; astigmatism-tunable optics; variable and rotatable prisms; tunable apertures; all-fluidic optical zooms and in-line refractive adaptive optics systems. We will demonstrate how these extremely compact, liquid-based adaptive optical components have sufficiently refined performance to allow realization of ultra-miniaturized tunable imaging systems or entirely new schemes for adaptive-optical microscopy.

BIOGRAPHY

Hans Zappe is Gisela and Erwin Sick Professor of Micro-Optics at the University of Freiburg in Germany. He is one of the internationally leading researchers in the areas of optical microsystems and micro-optical components and has made fundamental contributions to the state-of-the-art in fluidic imaging systems, tunable lenses and adaptive optics.



Born in Paris and raised in New York, Prof. Zappe earned BSc and MSc degrees at MIT in 1983 and a PhD from the University of California, Berkeley, in 1989, all in Electrical Engineering. He worked at IBM (USA), the Fraunhofer Institute for Applied Solid State Physics (Germany) and the Centre Suisse d'Electronique et de Microtechnique (Switzerland), before joining the Department of Microsystems Engineering at the University of Freiburg in 2000. In Freiburg he was Dean of Engineering from 2008 to 2010, Dean of Studies from 2002 to 2008, and currently serves as Department Chair.

Prof. Zappe is a Fellow of SPIE and IOP.

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