

# Kolloquium

Am Donnerstag, dem **21. Juni 2012**, um **16:00 Uhr** hält

**Professor Jean-Marc Breguet**  
**CSEM (Centre Suisse d'Electronique et de Microtechnique SA)**

einen Vortrag mit dem Titel

## **Overview of CSEM activities with focus on mechatronics development**

**Der Vortrag findet im OFFIS, Escherweg 2, Konferenzraum F02 statt.**

### **Abstract:**

After a short introduction to CSEM organization and an overview of CSEM general activities, the talk will focus on the research and development conducted in the group of precision mechanisms. Precision Mechanisms group core business is the development of complex, high added value positioning systems characterized by:

- A high precision (few microns down to a few nanometers)
- A high dynamic (fast settling time, high bandwidth)
- A high stability (vibrations, thermal variation, ...)
- A compatibility with extreme environmental conditions (high/low vibrations, clean environment, vacuum, high/low temperature, ...)
- A high reliability

CSEM is addressing several domains and markets such as scientific instrumentation (e.g. astrophysics, space, synchrotron, medtech), industrial equipment (e.g. laser manufacturing, EUV lithography) and watch industry.

CSEM activities will be demonstrated through several project examples: e.g. MOSFIRE (multi-objects spectrometer for infra red exploration the Keck telescope in Hawaii), M5-E-ELT (Mirror 5 assembly for the European Extremely Large Telescope), SOFIA (Tip-Tilt assembly for the secondary mirror of the airborne SOFIA telescope), FEMTOPRINT (development of a tabletop femtolaser machining system), SugarCub (Silicon based 8 cm<sup>3</sup> micro-delta robot) and PRIGO (Goniometer for a line at the SLS synchrotron).

### **Short biography:**

In 1982, Jean-Marc Breguet graduated at the Engineering High School in Le Locle, Switzerland, in Electronic Engineering. In 1989 he graduated at the Swiss Federal Institute of Technology (EPFL) in Lausanne, Switzerland, in Micro Engineering and in 1998 he obtained his doctorate at EPFL in microrobotics.

From 1982 to 1985 and from 1989 to 1993 Jean-Marc Breguet worked at Minimotor SA (Faulhaber Group) first as manager of the electronic department and then as R&D manager. In 1989, Jean-Marc Breguet worked one year as researcher in the research laboratory of Toppan printing Inc. in Japan.

From 1993 to 2007, Jean-Marc Breguet worked at EPFL as senior researcher and lecturer at the "Laboratoire de Systèmes Robotiques (LSRO)" where he created the "High Precision Robotics group (HPR)". HPR was mainly funded by European (6 EU projects) and national projects in cooperation with industry (7 CTI projects, 2 FNS projects). From 1996 to 1998, Jean-Marc Breguet was deputy coordinator of the very successful MICORB module part of the MINAST national program.

In December 2007 he was appointed Section Head of the Precision Mechanism Section at CSEM (Centre Suisse d'Electronique et de Microtechnique SA).

Jean-Marc Breguet is author or co-author of more than 80 publications. Four of them were awarded in conferences. He holds five patents. He was involved in the founding of 3 start-ups in the field of micro-robotics. He is shareholder in one of those companies.

**Eingeladen von: Prof. Dr.-Ing.habil. Sergej Fatikow**

*Weitere Kolloquiumstermine sind im WWW abrufbar.*