



TECHNISCHE  
UNIVERSITÄT  
WIEN

Vienna University of Technology

INSTITUT FÜR  
ANGEWANDTE PHYSIK  
Institute of Applied Physics  
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# IAP-SEMINAR

## ANNOUNCEMENT

- Date:** Tuesday, 8.3.2016  
**Time:** 16:00 p.m.  
**Location:** Technische Universität Wien, Institut für Angewandte Physik, E134  
yellow tower „B“, 5<sup>th</sup> floor, Sem.R. DB gelb 05 B (room number  
DB05L03), 1040 Wien, Wiedner Hauptstraße 8-10
- Lecturer:** Maximilian Dirnbacher MSc.  
TU Wien, IAP & BURL Concepts, Inc., San Diego, CA/USA
- Subject:** Pre-hospital Stroke Diagnosis with Non-Invasive Transcranial  
Ultrasound
- Abstract:** A *stroke* is a devastating neurovascular event that happens worldwide to over 15 million people each year. The figure of speech “*Time is Brain*” should point out the critical factor of time when it comes to diagnosis and treatment. As stroke progresses, two-thirds of stroke victims suffer from severe damages, such as speech disorder or paralysis, whereas for the remaining one-third it may lead to death. Family members and friends of the survivors have to deal with the relentless consequences, too. Needless to say that this emphasizes the importance to develop innovative, affordable medical care solutions for present and future generations to battle strokes. One promising, non-invasive, stroke diagnosis approach, a portable transcranial ultrasound platform, is currently being developed at the company BURL Concepts, Inc., located in Southern California. This device uses ultrasound waves in combination with so-called microbubbles, which are tiny gaseous bodies commonly used as ultrasound contrast agent. The talk will discuss technology and the physical challenges that had to be overcome in the R&D phase, such as the intervening human head or the specific acoustic response of microbubbles.

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*All interested colleagues are welcome to this seminar lecture  
(45 minutes presentation followed by discussion).*

*M. Gröschl e.h.  
(Seminar-Chairperson)*

*H. Störi e.h.  
(LVA-Leiter)*