

## Elektrotechnik-Elektronik-Informationstechnik

# EEI KOLLOQUIUM

### Implantable Wireless Medical Devices and Systems

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**Donnerstag, der 10.07.2014, 13<sup>00</sup> Uhr**

Martensstraße 1 (Rechenzentrum), Hörsaal H 4

**Diskussionsleitung: Prof. Dr.-Ing. G. Fischer**

The presentation focuses on the development of wireless micro devices and systems for medical applications at UT-Arlington. They are based on technology platforms such as wireless energy transfer for batteryless implants, miniature electrochemical sensors, nanoparticle modified surfaces, MEMS devices and wireless communication. An integrated wireless body network for chronic pain management will be discussed. The system provides a wireless closed loop for neurorecorders to recognize pain signals and neurostimulators to inhibit pain. Batteryless endoluminal sensing telemetry architecture will also be discussed with an esophagus implant for remote diagnosis of gastroesophageal reflux disease (GERD), an endoscopically-implantable wireless gastrostimulator for gastroparesis management, and a wireless bladder volume monitoring implant for urinary incontinence management. These applications enable new medicines to improve human welfare and assist better living.