Job Opportunity

The Department of Microsystems Engineering (IMTEK), Microsystem Materials Laboratory (Prof. Dr. O. Paul) is offering a

PhD position

in the field of MEMS-based optoelectronic cochlear implants with highly integrated of miniaturized light-emitting diodes

Your project

You will be part of a project team at the University of Freiburg with the academic and industrial partners and will focus on the development and validation of an innovative optical cochlear implant based on thin-film LED-arrays. In the framework our research project “Optical CI” funded by the German Ministry of Research and Education (BMBF) you will gain broad experience in close collaboration with leading companies in medical engineering and clinical end-users. Supplementary information is available in the project description:
http://www.photonikforschung.de/fileadmin/Verbundsteckbriefe/1._Bio/barrierefreie_Steckbriefe/OpticalCI_Projektsteckbrief_KMU-bf2_C1.pdf

Your tasks

- Investigation und optimization of the **long-time stability** of biomedical electrooptical probes focusing on the development of mechanically flexible, polymer-based encapsulation concepts
- **Optoelectronic characterizatio**n of LED probes defining appropriate operating modes and their optimization as well as analyzing LED efficiency
- Thermomechanical and optical **modelling** and **characterization** (e.g. with Comsol Multiphysics, LightTools)
- Design of miniaturized, micro-controller-based **control electronics** for micro-LED arrays

Your profile

- University degree (Master/Diploma) in microsystems engineering, physics or related disciplines
- Personal identification with the project idea of optical cochlear implants and strong commitment to the project goals in cooperation with industrial and academic project partners
- Accurate, well structured and self-reliant way of working, ability to plan and implement new cochlear implant concepts in cooperation with an international team
- Sound knowledge of semiconductor physics and technology, experience with optoelectronics and especially GaN-based LEDs are beneficial
- Skills in MEMS processing, FEM modelling and LabView programming are advantageous

Application

Please send a single pdf file containing a motivation letter, your CV, a two-page summary of your Master thesis, the transcript of records and certificates, and the contact information of two references to ruther@imtek.de.

For further information please contact:

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79110 Freiburg Freiburg, September 26, 2016