



**DOCH.**

Finden Sie es heraus bei Fraunhofer.

THE FRAUNHOFER INSTITUTE FOR PHOTONIC MICROSYSTEMS IPMS AND ITS 350 EMPLOYEES WORK ON NANOELECTRONIC, MECHANICAL AND OPTICAL COMPONENTS AS WELL AS THEIR INTEGRATION INTO THE TINIEST "INTELLIGENT" PARTS AND SYSTEMS. YOU WANT TO DEMONSTRATE YOUR HIGH INNOVATIVE POTENTIAL AND IMPRESS US WITH YOUR IDEAS?

POSTS ARE IMMEDIATELY AVAILABLE FOR:

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### **MASTER-/ DIPLOMA THESIS "HIGH RESOLUTION MEASUREMENT OF LARGE OUT-OF-PLANE DISPLACEMENTS UTILIZING DIGITAL HOLOGRAPHIC MICROSCOPE" (IPMS-2018-128)**

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The work will focus on measuring large out-of-plane displacements ( $>100\ \mu\text{m}$ ) with high resolution ( $<50\ \text{nm}$ ) of "Nanoscopic Electrostatic Drive (NED)" actuators developed by MAS team of Fraunhofer IPMS. The large displacements will be evaluated using different out-of-plane measurement methods associated with Digital Holographic Microscope (DHM). The various possible measurement methods will be investigated along with their errors and limitations to find the most suitable large out-of-plane displacement measurement method for DHM.

#### **Key aspects:**

- To get familiarized with the out-of-plane MEMS actuators based on NED principle and the measurement setup of DHM
- Investigation of possible large out-of-plane displacement ( $>100\ \mu\text{m}$ ) measurement methods in DHM
- Evaluation of the resolution, associated errors and limitations of the different methods using NED test structures and selecting the most suitable method
- Standardization and automation of the selected method using LabVIEW

#### **What you bring:**

- Study of MEMS/microsystems technology, electronics engineering, electrical engineering, mechanical engineering, physics or a comparable degree program
- Basic knowledge of microsystem domain, optics, interferometers and/or digital holographic microscope is beneficial
- Knowledge of LabVIEW programming and/or general programming is an advantage
- Self-motivated, goal-oriented, independent and structured way of working is desired

#### **What you can expect:**

You will find a large network of experts working in an open and collegial environment within the excellent Fraunhofer research and development infrastructure.

We offer an exciting, up-to-date thesis position in which you can benefit from our experienced team. Our excellent industry-related research and development infrastructure provides you access to a large network of experts. You will become part of an inspirational international work environment based on trust, creativity and team spirit. We bestow upon you the responsibility for your thesis project, ensuring you space for autonomous work.

Work is planned to be carried out in our office in Cottbus. The thesis is awarded over a German partner university according to the higher education laws of the respective federal state.

If you have any questions regarding this position, please do not hesitate to contact us:

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<http://www.ipms.fraunhofer.de>

**Job Reference: IPMS-2018-128**