ESR 8 Information Sheet

Project title: "Micro-optical imaging system for multimodal non-linear endospectroscopy" in the context of Multimodal nonlinear imaging for clinical diagnosis in combination with laser tissue ablation for selective tissue removal

Host institution/company: GRINTECH GmbH Jena (Germany).

Supervisors
- *Academic:* Prof. Dr. Juergen Popp, Scientific director Leibniz-Institute of Photonic Technology (Leibniz-IPHT) and head of research department Spectroscopy / Imaging at Leibniz-IPHT.
- *Industrial:* Dr. Bernhard Messerschmidt, Grintech GmbH (Germany)

Type of contract: 36-months full-time research grant within the PHAST-ETN project.

Brief description of the project: The ESR 8 project will cover the conception, mechanical and optical design of the distal probe head (including micro-optics, a MEMS scanner and optical fibers) for multimodal endomicroscopy and spectroscopy as well as the related electronics and software to drive a suitable MEMS scanning device for image acquisition. Beside this, the studies will include optical and electronical qualification of a MEMS mirror or piezoelectric scanner, the developed micro-optical components by confocal imaging tests, interferometry, Shack-Hartmann sensors, and assembly technologies of the micro-optical imaging systems and their optical qualification close or in the final application.

Planned secondments at Leibniz-IPHT Jena (Germany) and Medical University Vienna (Austria)

Qualifications
Essential
- Applicants should hold or expect to attain, as a minimum an MSc in Optics/Photonics, Physics, microtechnologies, electrical engineering or related area.

Knowledge and Experience
Essential
- A demonstrated knowledge and capabilities of at least two of the following: experimental optics labwork / microscopy and their application in biomedicine, photonics / optics, laser physics, optical and mechanical design, nonlinear optics, electronics, technical programming language (Labview, Python or Mathlab), image analysis.

Desirable
- Research project carried out in at least one of the above disciplines.

Skills and Competencies
Essential
- Applicants whose first language is not English must submit evidence of competency in English,
- Evidence of interest, aptitude and research experience in the above disciplines.

Further information
For any informal queries, please contact Dr. Bernhard Messerschmidt by email at messerschmidt@grintech.de.

For queries relating to the application and admission process please contact phast-etn@unipr.it. Website: http://www.phast-etn.eu