

# Scalable fabrication of twisted aperiodic multicore fibers for next-generation lens-less endoscopy

*Thursday, 1 September 2022 12:00 (2 hours)*

A scalable fabrication approach for aperiodic and twisted multicore fibers is presented, which will enable next-generation lens-less endoscopy for 3D imaging deep inside tissue. Particularly, an aperiodic fiber with 1281 cores was developed, which is single-mode throughout the visible spectrum. The design process was supported by in-depth numerical design studies.

**Primary authors:** STEPHAN, Ronja (Leibniz University Hannover, Institute of Quantum Optics, Hannover, Germany); SCHARF, Elias (TU Dresden, Chair of Measurement and Sensor System Technique, Dresden, Germany); ZOLNACZ, Kinga (Wroclaw University of Science and Technology, Department of Optics and Photonics, Wroclaw, Poland); HAUSMANN, Katharina (Leibniz University Hannover, Institute of Quantum Optics, Hannover, Germany); LIESSMANN, Matthias (Leibniz University Hannover, Institute of Quantum Optics, Hannover, Germany); KÖTTERS, Lea (Leibniz University Hannover, Institute of Quantum Optics, Hannover, Germany); CZARSKE, Jürgen (TU Dresden, Chair of Measurement and Sensor System Technique, Dresden, Germany); RISTAU, Detlev (Leibniz University Hannover, Institute of Quantum Optics, Hannover, Germany); KUSCHMIERZ, Robert (TU Dresden, Chair of Measurement and Sensor System Technique, Dresden, Germany)

**Presenter:** STEPHAN, Ronja (Leibniz University Hannover, Institute of Quantum Optics, Hannover, Germany)

**Session Classification:** Lunch and Poster Session 2