

**Prof. Peter Uhd Jepsen – Technical University of Denmark**

**Title:** THz-driven strong-field lightwave electronics and nanoscale THz imaging

**Abstract:**

Terahertz (THz) spectroscopy has been used for decades as a driver for the development of novel applications in sensing, nondestructive testing, and quality control. In the recent few years, we have had an increased interest in using strong-field THz sources for technologies that are close to fundamental research but still with a near-future commercial scope. I will discuss our recent development of the world's first THz-sensitive photomultiplier, THz-based imaging techniques for large-scale mapping of thin-film conductivity with a focus on graphene in the semiconductor industry, and finally show the route towards mapping of thin-film conductivity with a resolution of 20 nanometers, using THz waves.

**Biography:**

Peter Uhd Jepsen has been active in the field of THz science and technology since 1993. His focus areas include fundamental and application aspects of generation, propagation, and detection of ultrashort pulses of coherent THz radiation, and he holds strong expertise within ultrafast laser optics, light-matter interactions, optical spectroscopy, and photonics engineering. He is a Fellow of Optica (former Optical Society of America) and has published 145 peer-reviewed articles with >10,000 citations and an H-index of 47.