

Carbon Nanotubes for Nanophotonic Devices

Jana Zaumseil is head of the Nanomaterials for Optoelectronics group at Heidelberg University in Germany. Her team is particularly interested in the production and design of new materials for nanophotonic devices. One focus is devices based on carbon nanotubes. By measuring emission and photoluminescence spectra the researchers can in detail measure how light interacts with their devices and determine the influence of external parameters such as electric fields.

Prof. Zaumseil and her team have implemented a Fourier-imaging setup based on the Isoplan 320, PIXIS and NIRvana cameras allowing for extended spectral characterization from the visible into the SWIR spectral range. In this technique instead of projecting an image of the sample onto the entrance slit of the spectrograph, the backfocal plane of the objective lens is imaged at the entrance slit. Effectively this allows the team to detect angle dependent reflectance and emission spectra in one single measurement. By design the technique uses the whole area of the camera sensor so low aberration systems are ideally suitable for this technique.

Featured Paper/Publication: [Trion-Polariton Formation in Single-Walled Carbon Nanotube Microcavities](#), ACS Photonics, 2018

Reference Lab: [Jana Zaumseil](#), Heidelberg University, Germany

Featured Product: [Isoplan](#), [PIXIS](#), [NIRvana](#)