

Photoluminescence Spectroscopy to Characterize Microstructured Silica Fibers

Silica based materials that emit light under excitation have huge applications in creating novel sensors, laser sources and optical devices in general. Silica can be doped with different elements to tailor its emission properties for different applications, however the interactions and exact mechanisms determining the emission are often complex and not easy to understand. So various techniques are used for characterization of these materials.

Researchers around Prof. Ouerdane from Univeristy Lyon in France are probing microstructured silica fibers doped with Bi ions using various forms of photoluminescence spectroscopy. The PL emission changes when the fibers are exposed to gamma rays, with laser excitation energy and with time after a laser excitation pulse. The results give the researchers new insights into the structure of the Bi color centers in the silica fibers.

The team performed the time resolved PL and PL excitation measurements using a spectroscopy setup and a PI-MAX4 ICCD camera as detector for experiments with high sensitivity and time resolution from nanoseconds to microseconds.

Featured Paper/Publication: [Structured blue emission in Bismuth doped fibers](#), Optical Materials, 2018

Reference Lab: Prof. Ouerdane, Lyon Univ, France

Featured Product: [PI-MAX](#), [HRS](#), [Isoplane](#)