Mid-IR supercontinuum generation beyond 7 μm using a silica-fluoride-chalcogenide fiber cascade - DTU Orbit (09/11/2017)

**Mid-IR supercontinuum generation beyond 7 μm using a silica-fluoride-chalcogenide fiber cascade**

We report on an experimental demonstration of mid-infrared cascaded supercontinuum generation in commercial silica, fluoride, and chalcogenide fibers as a potentially cheap and practical alternative to direct pumping schemes. A pump continuum up to 4.4 μm was generated in cascaded silica and fluoride fibers by an amplified 1.55 μm nanosecond diode laser. By pumping a commercial Ge10As22Se68 single-material photonic crystal fiber with 135.7 mW of the pump continuum from 3.5-4.4 μm, we obtained a continuum up to 7.2 μm with a total output power after the collimating lens of 54.5 mW, and 3.7 mW above 4.5 μm.

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