Upconversion imaging using an all-fiber supercontinuum source - DTU Orbit (09/11/2017)

Upconversion imaging using an all-fiber supercontinuum source

In this Letter, the first demonstration, to the best of our knowledge, of pulsed upconversion imaging using supercontinuum light is presented. A mid-infrared (IR) imaging system was built by combining a mid-IR supercontinuum source emitting between 1.8 and 2.6 mu m with upconversion detection. The infrared signal is used to probe a sample and mixed with a synchronized 1550 nm laser pulse inside a lithium niobate (LiNbO3) crystal. The signal is thus upconverted to the 860-970 nm range and acquired on a standard silicon CCD array at a rate of 22 frames per second. In our implementation, spatial features in the sample plane as small as 55 mu m could be resolved. (C) 2016 Optical Society of America

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