Heavily Germanium-Doped Silica Fiber With a Flat Normal Dispersion Profile - DTU Orbit (27/01/2019)

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A heavily germanium-doped (Ge-doped) silica fiber with a four-layer refractive index profile is proposed to obtain all normal flat dispersion property. The waveguide dispersion in the fiber can be modified by adjusting the fiber parameters, including the refractive indices and the core radiuses. As a result, the flat normal dispersion in the fiber can be obtained in the wavelength range of 1540-2600 nm, where the values of the dispersion slope are between -0.0058 and 0.03 ps/nm(2)/km. Furthermore, the numerical results show that the flat-top supercontinuum spectrum ranging from 1000 to 2600 nm can be generated by launching pump pulses at the wavelength of 1550 nm in the heavily Ge-doped fiber with a four-layer refractive index profile.

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