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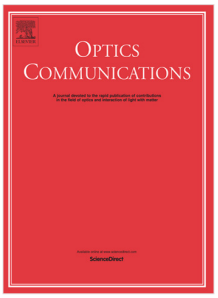


Generation of phase singular optical beams in microstructure optical fibers

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**Highlights**



- Generation and propagation of optical vortex in microstructure optical fiber (MOF).
- Chalcogenide $As_2S_3$ five ring hexagonal lattice MOF is numerically simulated.
- Effective index, V-parameter, dispersion and loss is calculated for MOF.
- MOF achieves a dispersion < 40nm/ps/km over 650nm bandwidth and loss < 0.029dB/km.
- Applications: optimized tweezers, high-resolution imaging and sensing.