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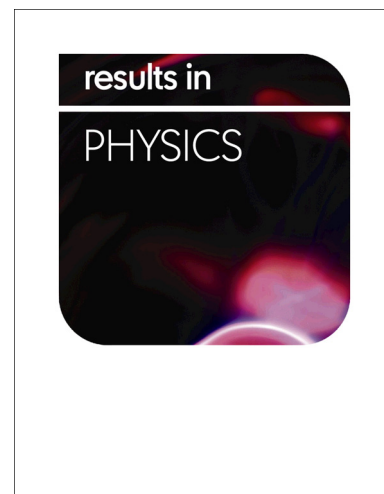
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Abstract — A non-circular core fiber with a metamaterial cladding using gold is proposed. The mode confinement properties of the disclosed fiber are investigated under various metallic (gold) and dielectric (Al_2O_3) thickness for different wavelengths and different elliptic ratios of 0.8 μm and 0.9 μm . The parameters like birefringence, confinement loss and dispersion are numerically analyzed theoretically using finite element method (FEM). The overall performance of the proposed fiber is studied and the results show that the fiber exhibits a stable relation between birefringence and confinement loss.

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