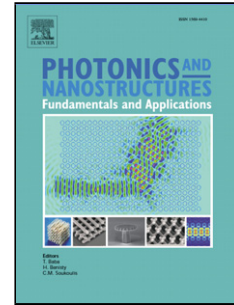


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Magneto-optical Faraday effect in suspended core micro-structured optical fiber filled with magnetic CoFe₂O₄ nanoparticles doped composite material

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Highlights

- Integration of Magneto-optical functionalities is still challenging, due to the high thermal budget of common magneto-optical materials. We develop a magneto-optical material using a low temperature (<100°C) sol gel process. It is based on the use of magnetic nanoparticles embedded in a silica matrix.
- We applied this versatile material to coat a suspended core optical fiber and we show in this article a full magneto-optical hysteresis loop measurement in guided configuration. The magnitude of the Faraday rotation is a few degrees in a non-optimized structure. This suggests possible applications in the field of sensor or telecommunication

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