Magneto-optical materials for optical applications: Bi:YIG made by metal-organic decomposition and crystallized by laser annealing, and gasogyrochromism in oxidized permalloy

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This talk presents the results of a study on the synthesis of bismuth-substituted yttrium iron garnets (Bi:YIG), fabricated using a metal-organic decomposition method [1] with subsequent crystallization under laser irradiation [2,3]. The integration of Bi:YIG with silicon-on-insulator technology is investigated through the study of micron- and sub-millimeter-sized Bi:YIG stripes and areas crystallized in air, oxygen, and inert gas atmospheres. The effect of gasogyrochromism is demonstrated, and the applicability of oxidized permalloy nanofilms to hydrogen sensing is discussed.

Bibliography

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