

# Linear and non-linear magneto-optical response of magneto-plasmonic Au/YIG crystals

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We report about our linear and non-linear magneto-optical studies of the plasma resonances in a 1D Au/YIG magneto-plasmonic crystal. Excitation of the resonances was studied as function of the applied magnetic field and angle of incidence of the fundamental light. An interplay between different surface plasma resonances was shown to play an important role in the magneto-plasmonic effect observed in both experimental configurations. Obtained resonance branches are in good agreement with theoretical calculations. This work was supported by the SYMPHONY project operated within the Foundation for Polish Science Team Programme co-financed by the EU European Regional Development Fund, OPIE 2007-2013.