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Maximization of surface-enhanced transversal magneto-optic Kerr effect in Au/Co/Au thin films[1] EDGAR PATIÑO, CESAR HERREÑO, Universidad de los Andes — In order to maximize the transversal magneto optic Kerr effect (T-MOKE) of a Au/Co/Au structure we propose a method to obtain the optimum thickness values. A criteria based on preserving good plasmonic properties has been included as part of this method. Using the theoretical prediction we grew Au/Co/Au trilayers and perform optical and MO characterization using the Kretschmann configuration. The results admit very easy interpretation in terms of the in-teraction between the magneto-optical and plasmonic proper-ties dictating the optimal thicknesses of the structure. Moreo-ver we have grown and characterized the optimized structure finding good agreement with theory reaching, for a 532 nm green laser, a maximal surface magneto-optic (MO) signal enhancement of close to nine folds with respect to the signal without plasmonic excitation.

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