

17:05 - Performance of Tb doped glass based current sensor designed to work at 1550 nm region

Marcelo Nalin¹, Douglas F. Franco¹, Thiago A. Lodi¹, Eduardo O. Ghezzi¹, Adriana M. França¹, Enver F. Chillce², João R. Nogueira Junior², João B. Rosolem²

¹ Institute of Chemistry, UNESP - Sao Paulo State University, Brazil

² CPQD - Research and Development Center, Brazil

We evaluated the sensitivity of Tb glass used in a new packaging of discrete magnetic optical fiber current sensors operating at 1550 nm. Although the Verdet constant of Tb glasses is higher at 650 nm region there are difficulties to find and to package the other components (polarizers and polarization beam splitters) of the sensor in this spectral region. On the other way, 1550 nm spectral region presents many suppliers which results in lower final cost for the sensor.

17:20 - Surface plasmon resonance sensor based on a planar waveguide with a bimetallic layer

Hudson J. B. Rodrigues¹, Markos P. Cardoso¹, Cauã C. Miranda¹, Amanda F. Romeiro¹, Maria Thereza R. Giraldi², Anderson O. Silva³, João C. W. A. Costa¹, José L. Santos^{4,5}, Ariel Guerreiro^{4,5}

¹ Applied Electromagnetism Laboratory, Federal University of Para, Brazil

² Laboratory of Photonics, Engineering Military Institute, Brazil

³ Federal Center for Technological Education Celso Suckow da Fonseca, Brazil

⁴ Faculty of Sciences, University of Porto, Portugal

⁵ INESC-TEC, Portugal

This paper presents the examination of a planar waveguide sensor featuring a bimetallic layer, revealing its potential applicability across both the visible and infrared spectrums. The bimetallic layer consists of adjacent gold and silver slabs positioned atop the waveguide's core. This arrangement demonstrates the activation of two distinct plasmon resonances, indicating promising prospects for multiparameter sensing applications.