

BENEMÉRITA UNIVERSIDAD AUTÓNOMA DE PUEBLA



**INSTITUTO DE FÍSICA
“Luis Rivera Terrazas”**



**SEMINARIO
“DR. JESUS REYES CORONA”**

**“Quantum-Enhanced Nonlinear Spectroscopy:
Probing Materials with Entangled Light”**

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Entangled two-photon absorption spectroscopy has been widely recognized as a powerful tool for revealing relevant information about the structure of complex molecular systems. However, to date, experimental implementation of this technique has remained elusive, mainly because of the need to performing multiple experiments with two-photon states differing in temporal correlations, which translates in the necessity to have at the experimenter’s disposal tens, if not hundreds, of entangled-photon sources. In this talk, I will describe an experimentally-feasible scheme, developed in my group, which successfully overcomes this limitation. By making use of a temperature-controlled entangled-photon source, I will show that the two-photon absorption signal, recorded as a function of the temperature of the nonlinear crystal that generates the paired photons, and a controllable delay between them, carries all information about the electronic structure of the absorbing medium, which can be revealed by a simple Fourier transformation.

**Auditorio-IFUAP
Viernes 28 de Febrero de 2020
13:00 Hrs.**