

# Colloquium Notice

## Miquel Rude\*

**ICFO - The Institute for Photonic Sciences**

### *Tunable Micro- and nano- structured optical devices using phase change materials*

Phase-change materials (PCMs) are a group of chemical compounds that exhibit two stable phases with large contrast in their optical and electrical properties. Moreover, reversible transitions between the two phases can be easily triggered using optical or electrical pulses. These properties make PCMs interesting to implement new applications in photonics. In the first part of the talk we will show an optical switch in a Si ring resonator covered with GST as well as control of surface-plasmon propagation in Au/SiO<sub>2</sub> plasmonic waveguides. In the second part we will explain how to combine GST with thin-film multilayer structures, showing how it can be used to tune EOT resonances in periodic arrays of nanoholes drilled in metallic films, achieving large shifts (385 nm) in the resonance wavelength after crystallization. Finally using thin-film interference effects and exploiting the high absorption of GST we demonstrate broadband perfect absorbers in the visible and narrowband absorbers in the NIR.

\*Miquel Rude is a graduate student at ICFO

Wednesday  
**April 26, 2017**  
Starts at 12:15 PM  
Coffee at 12:00 PM  
Physics Conference Room, SB B326