

# SEMINARIO

Instituto Nicolás Cabrera

**Title:** Searching for the best thermoelectric materials

**Who:** Raquel Ribeiro, Universidad Federal do ABC, Ames Laboratory

**When:** Friday 21 April, 15h30

**Where:** Sala de seminarios, modulo 03, planta 5

## Abstract:

Since Seebeck's discovery in the 19th century, many materials have been found useful to generate thermoelectricity. The first were based on electric conductors and semiconductors, such as antimony and bismuth. Later, in the 20th century, many other thermoelectric materials were discovered and developed, such as ceramics and composites. Nevertheless, even today semiconductors remain among the basic materials for the production of thermoelectric devices. In this lecture we will review recent efforts on improving thermoelectric efficiency in general. We will focus on strategies to improved thermoelectric conversion efficiency, that is, the figure of merit for thermoelectric performance as a basis for understanding the evolution of materials with good thermoelectric properties. Particularly, several novel proof-of-principle approaches such as phonon disordered in phonon-glass-electron crystal and charge-spin-orbital degeneracy in strongly correlated systems on thermoelectric performance will be discussed.



