

## **#SEMINARIOS:**

**Miércoles 14 de Diciembre / A las 14 hs.**

**Aula Prof. José R. Galvele – Instituto Sabato**

**Av. Gral. Paz 1499 (1650) San Martín, Buenos Aires Argentina**

## **Advanced High Strength Steels (AHSS) for Improved Performance**

a cargo de:

**Dr. Ilana Timokhina (Senior Research Fellow)**

**Institute for Frontier Materiales - Deakin University - Australia**

### **Resumen:**

The development of modern steels is based on the tailoring of the microstructure to achieve the required properties. While historically this was performed at the micrometer scale length there is now the scope to undertake this at the nanoscale or atom scale. This presentation reviews recent work related to the development of ultrafine and nanoscale microstructures in steel as well as changes at shorter scale lengths, such as cluster formation and solute effects. This includes the development of ultrafine ferrite through phase transformation, nanoscale and ultrafine bainite, precipitation and cluster strengthening, nano-twins formation and bake hardening of steels. A key element of this work has been the use of advanced characterization techniques to unlock the nature of these structures.

## **Severe Plastic Deformation and Prediction of Fracture**

a cargo de:

**Rimma Lapovok (Senior Research Fellow)**

**Institute for Frontier Materiales - Deakin University - Australia**

### **Resumen:**

This talk will be an overview on results of research in area of nanostructured metals and alloys by severe plastic deformation. It will cover three major topics: (i) SPD processes for bulk, thin and tube materials; (ii) enhancement of mechanical.

and other properties; and (iii) hybrid materials by SPD processing. It also will cover (iv) the damage models developed by Rimma Lapovok for prediction of fracture in metal forming, exemplified by cracking of workpiece and forming dies.