

# **SEMINARIUM Z MAGNETYZMU I NADPRZEWODNICTWA**

Uprzejmie zawiadamiamy, że w **środe**

**3 grudnia 2014 r., o godz. 10:00**

w sali 203 (bud. 1) odbędzie się seminarium, na którym

**mgr Rachid Thaljaoui**

*Wydział Fizyki PW, Warszawa*

wyłosi referat na temat:

## **Magnetic, magnetocaloric and transport studies of mixed valence manganites doped with monovalent metals**

I will talk about a new class of less studied mixed valence manganites doped with monovalent Na and K metals. They are of interest due to the magnetocaloric and magnetoresistance effects. The structural analysis indicates that all studied compounds are single phase with orthorhombic structure. Magnetic measurements for both series of manganites show a clear paramagnetic - ferromagnetic transition close to room temperature. The decrease of the Curie temperature with increasing the x content is related to the decrease of the effective exchange interaction controlled by the  $Mn^{3+}/Mn^{4+}$  ratio. The Arrott plots and universal curves of magnetic entropy confirm the second order magnetic transition. The  $\Delta S$  maximum diminishes with increasing Na content and slightly increases with K content. The so-called relative cooling power RCP falls between 83 and 102 J/kg. The electron magnetic resonance studies (EMR) technique was applied for selected manganite to investigate the mixed phase. The electrical resistivity shows a distinct metal - insulator transitions below the Curie temperatures, which may be related to the structural disorder in the surface layer of nanocrystallites.

Serdecznie zapraszamy

Roman Puźniak  
Henryk Szymczak  
Andrzej Wiśniewski