

SEMINARIUM Z MAGNETYZMU I NADPRZEWODNICTWA

Uprzejmie zawiadamiamy, że we **WTOREK**

5 października 2010 r., o godz. 13:00

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

Prof. Zhuan Xu

Department of Physics, Zhejiang University, Hangzhou, Chiny

wyłosi referat na temat:

„Exploration of new iron-based superconductors: chemical doping within FeAs layer”

In this presentation, I report systematic investigation of various chemical doping approaches and the effects on superconductivity in the recently-discovered FeAs-based superconductors. Firstly, superconductivity has been induced by Co or Ni doping on Fe site in both 1111 and 122 systems and a dome-like doping dependence of T_c is observed. The result points to an itinerant picture of 3d electrons in the iron arsenides. We also observed that the absolute value of thermopower is enhanced at the optimal doping level, suggesting a correlation between T_c and thermopower. Secondly, the doping effect of non-magnetic impurity Zn is investigated and a possible change in the pairing symmetry with doping level is proposed. Finally, I report the effect of chemical pressure induced by P doping on As site. In P-doped Eu-122, a coexistence of superconductivity and ferromagnetism is observed. In P-doped Ba-122 system, a possible quantum critical point of Fe SDW is evidenced. A rich phase diagram of CeFeAs_{1-x}P_xO system is revealed and we suggested that the inter-layer Kondo coupling plays an important role in the rare earth iron pnictides.

Serdecznie zapraszamy

Roman Puźniak
Henryk Szymczak
Andrzej Wiśniewski