SEMINARIUM RENTGENOWSKIE

Dnia 23.09.2016r. o godz. 12.00, w sali A Instytutu Fizyki PAN, odbędzie się seminarium rtg., na którym **dr Eric Pellegrin** oraz **dr Hari Babu Vasili** z Synchrotronu ALBA w Barcelonie wygłoszą następujące referaty:

Dr. Hari Babu Vasili

1. **A new insight into cation distribution in $CoFe_2O_4$ thin films using soft x-ray magnetic circular dichroism** *(30 min.)*

   Cobalt ferrite, $CoFe_2O_4$ (CFO), thin films have received a renewed attention for novel spintronic devices exploiting pure spin currents .Yet, anomalous magnetic properties have been reported in very thin CFO films, including large spin magnetoresistance and smaller magnetization. Apart from the antiphase boundary defects , the peculiar properties could be related to the distribution of cations (Co/Fe) between tetrahedral (Td) and octahedral (Oh) sites in the spinel structure which -due to the inherent out-of-equilibrium conditions of pulsed laser ablation (PLD) thin film growth process - may lead to unexpected cationic distribution. In view of this, we report the cationic ordering and its effects on the magnetic properties of CFO thin films.

Dr. Eric Pellegrin

2. **Remote Plasma Enhanced - Chemical Vapor Deposition (rPE-CVD) of Graphene on Various Substrates** *(30 min.)*

   Multiple layers of graphene thin films and graphene nano-sheets were grown on different substrates (i.e., polycrystalline nickel foil, Ni(111), HOPG(0001)) using rPE-CVD. As a novel basic approach to this technique, a new remote low-pressure RF plasma source has been used to (i) minimize the effect of the plasma electrical field on the orientation of resulting grapheme nano-sheets, (ii) decouple the dissociation process of the gas from the growth process of graphene on the substrate, (iii) warrant for a low graphene defect density via slow plasma kinetics, (iv) tune the feedstock gas chemistry in view of improving the graphene growth, and (v) reduce the growth temperature as compared to conventional chemical vapor deposition (CVD). In order to assess the quality of the resulting graphene layers Raman spectroscopy, x-ray photoemission spectroscopy, scanning electron microscopy, and scanning tunneling microscopy were used.

Prof. dr hab. Krystyna Jabłońska
Dr hab. Iraida Demchenko