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PROGRAMOVÝ VÝBOR:

Milan Timko, predseda
Ústav experimentálnej fyziky SAV, Košice
Peter Bokes
Fakulta elektrotechniky a informatiky STU, Bratislava
Peter Bury
Fakulta elektrotechniky a informačných technológií,
Žilinská univerzita v Žiline
Štefan Gmuca
Fyzikálny ústav, SAV, Bratislava
Jaroslav Staníček
Fakulta matematiky, fyziky a informatiky UK, Bratislava

ORGANIZAČNÝ VÝBOR:

Július Cirák, predseda
Fakulta elektrotechniky a informatiky STU, Bratislava
Andrea Džubinská
Prírodovedecká fakulta UPJŠ v Košiciach
Mária Kovaľaková
Fakulta elektrotechniky a informatiky TU v Košiciach
Jozef Kúdelčík
Fakulta elektrotechniky a informačných technológií,
Žilinská univerzita v Žiline
Marián Reiffers
Fakulta humanitných a prírodných vied, Prešovská
univerzita, Prešov

analyzed by the spectral measurement at normal incidence of white light using a reflectometric probe. Angular response was measured in Kretschmann configuration.

OP4 3D POLYMER BASED LASER LITHOGRAPHY FOR PHOTONIC APPLICATION ON A CHIP AND OPTICAL FIBERS

D. Pudiš, M. Goraus, P. Urbancová, D. Jandura, P. Gašo, I. Lettrichová, I. Martinček, J. Ďurišová, L.Šušlik

[1]*Dept. of Physics, University of Žilina, Univerzitná 1, 010 26 Žilina, Slovakia*

dusan.pudis@fel.uniza.sk

The laser lithography based on direct laser writing process (DLW) using nonlinear two-photon absorption in the focus of the laser beam in photoresist volume seems to be very promising in future photonics. This technology allows fabrication of polymer based structures in three dimensions achieving submicrometer resolutions and acceptable optical quality. Here we present interesting areas where three dimensional (3D) DLW laser lithography was used for 3D components fabrication as photonic crystal structures, photonic devices for waveguide optics, microstructures for lab on fiber and structures for lab on a chip.

OP5 OBSERVATION OF QUANTUM PHASE TRANSITIONS AND ANTIFERROMAGNETIC DOME IN HEAVY FERMION SYSTEM BASED ON Yb

G. Lamura[1], T. Shiroka[2,3], I. Onuorah[4], P. Bonfà[4], S. Sanna[5], Z. Shermadini[3], R. Khasanov[3], R. De Renzi[4], I. Curlik[6], A. Dzubinska[7], G. Pristas[8], M. Reiffers[6,8], F. Gastaldo[9], M. Giovannini[1,9], C. Ritter[10], T. Goko[3], R. Sheuermann[3], E. Bauer[11]

[1]*CNR-SPIN c/o Dipart. di Fisica, via Dodecaneso 33, I-16146 Genova, Italy*
[2]*Labor. für Festkörperphysik, ETH-Hönggerberg, CH-8093 Zürich, Switzerland*
[3]*Paul ScherrerInstitut, CH-5232 Villigen PSI, Switzerland*
[4]*Dipart. di Fis. e Scien. della Terra, VialedelleScienze 7A, I-43124 Parma, Italy*
[5]*Dep. of Physics and Astronomy, University of Bologna, I-40127 Bologna, Italy*
[6]*Fac. of Hum. and Nat. Sciences, PU, 17. novembra 1, 08116 Prešov, Slovakia*
[7]*CPM-TIP, UPJS, Park Angelinum 9, 04154 Kosice, Slovakia*
[8]*Institute of Exp. Physics, SAS, Watsonova 47, SK 043 53 Košice, Slovakia*
[9]*Dipart. di Chim. e Chim. Indust., University of Genova, I-16146 Genova, Italy*
[10]*ILL, rue Jules Horowitz, 38042 Grenoble, France*
[11]*Inst. of Sol. St. Phys., Vienna University of Technology, A-1040 Wien, Austria*

marian.reiffers@unipo.sk

The electronic ground state of *f*-electron intermetallic systems is result of competition between the Kondo exchange coupling and the Ruderman-Kittel-Kasuya-Yoshida (RKKY) exchange interaction. Kondo coupling screens the local *f*-moments to produce a non-magnetically ordered state, characterized by heavy quasiparticles. $Yb_2Pd_2In_{1-x}Sn_x$represents a paradigmatic case: at the phase-diagram boundaries [x(Sn) = 0 and 1] the system is nonmagnetic, and exhibits low temperature non Fermi-liquid (NFL) properties. In the $0.5 \le x \le 0.9$ doping range, the system develops a dome-like region with long-range AF order and a maximum Néel temperature of about 3 K at ambient pressure. Muon spectroscopy (μSR) studies in the x = 1 case detect an unexpected AF dome, delimited by two pressure-driven quantum critical points at 1 and 4 GPa with low temperature

NFL and FL normal state properties, resp. µSR measurements down to $T = 0.25$ K in applied pressures up to 2.4 GPa were carry out. The AF ordering temperature, T_N, increases systematically with p, reaching ~ 4.9 K at the highest pressure for $x = 0.6$. Interestingly, the $x = 0.3$ compound, although nonmagnetic at ambient pressure, develops a robust AF order with $T_N = 3.8$ K at 2.4 GPa.

OP6 EXPERIMENTAL STUDY OF THE RARE EARTH MAGNETISM IN (Yb/Ce)Ni$_5$ COMPOUNDS

A. Dzubinska[1,2], M. Giovannini[3], M. Reiffers[4], J. R. Fernandez[2], R. Varga[1], J. I. Espeso[2], A. I. Cimentada[5], J. C. Gomez Sal[2]

[1] CPM-TIP, UPJS, 041 54 Kosice, Slovakia
[2]Departament of CITIMAC, Faculty of Sciences, University of Cantabria, 390 05 Santander, Spain
[3]Department of Chemistry, University of Genova, Via Dodecaneso 31, 16146 Genova, Italy
[4]Faculty of Humanities and Natural Sciences, Presov University, 081 16 Presov, Slovakia
[6]LADICIM Lab Mat Sci & Engn, ETS Ingenieros Caminos Canales & Puertos, University of Cantabria, 390 05 Santander, Spain

andrea.dzubinska@student.upjs.sk

Rare earth intermetallic compounds are systematically investigated more than 30 years already. One of the main reasons for this interest is the competition between Kondo effect and RKKY interaction. CeNi$_5$ is a well-known spin fluctuations compound without magnetic ordering down to the lowest temperatures [1] and YbNi$_5$ orders magnetically at 0.55 K [2]. In this work we focused on competition between effect of spin fluctuations and magnetic ordering state. We experimentally studied structural properties and physical properties of the substitution in (Yb/Ce)Ni$_5$. The effect of spin fluctuations (SF) has been observed in M(T) at ~ 40 K. Heat