Paul Plachinda

Education

Ph.D. in Applied Physics, Portland State University, Portland, Oregon
Expected graduation: January 2012, GPA: 3.97/4.00
Dissertation topic: Electronic properties and structure of functionalized graphene.
Advisor: Prof. R. Solanki
Areas of study: Solid state physics, Electron microscopy, Nanoscaled electronics

M.S. in Physics, Humboldt-University of Berlin, Berlin, Germany.
October2006 - December 2008
Thesis topic: Determination of deformation of nanoscaled objects by convergent electron diffraction.
Advisor: Prof. W. Neumann

B.S. in Material Science, Lomonossov Moscow State University, Moscow, Russia.
September 2002 - June 2006, *Cum Laude*, (with distinction)
Thesis topic: Framework borates as the materials for nonlinear optical applications.
Advisor: Prof. V. Dolgikh

Fellowships and academic Awards

The Pacific North West National Laboratory, Richland, WA
Summer Research Fellow
Research project: "In-Situ Electron Microscopy and Spectroscopy Studies of Interfaces in Advanced Li-Ion Batteries under Dynamic Operation Conditions".

Portland State University

- Sigma Xi special award, PSU, 2010.

Humboldt-University of Berlin

- DAAD (The German Academic Exchange Service) Fellowship, 2006-2008

Lomonossov Moscow State University

- XIV Mendeleev school-conference for chemistry students. 2004. First prize.
- Struchkov Competition, Special Prize, 2006
- Winner of the competition to support talented undergraduate students, graduate students and young researchers, MSU, 2006.

Publications

M. B. Zagudailova, P. A. Plachinda, P. S. Berdonosov, S. Yu. Stefanovich, and V. A. Dolgikh Second Harmonic Generation in Boracites // Inorganic Materials, 2005, Vol. 41, No. 4, pp. 393-396. (In Russian)

Paul A. Plachinda, Valery A. Dolgikh, Sergey Yu. Stefanovich and Petr S. Berdonosov Nonlinear-optical susceptibility of hilgardite-like borates M2B5O9X (X=Cl, Br) // Solid State Sciences,2005, 7, p.1194-1200

S. Yu. Stefanovich, Yu. N. Eremicheva, V. N. Sigaev, P. Pernice, A. Aronne, E. Fanelli, P. A. Plachinda, V. A. Dolgikh Optical Nonlinear Pb2B5O9Br: A New Polar Dielectric with Glass-Forming Properties // Ferroelectrics, 2005, V.318, P.105 - 112

P. A. Plachinda, V. A. Dolgikh and S. Y. Stefanovch, Comparative study of framework borates optical non-linearities // Acta Cryst.,2005, A61, C364

D. O. Charkin, P. A. Plachinda, N. V. Pervukhina, S. V. Borisov and S. A. Magarill. PbCl(ReO4), A derivative of the matlockite (PbFCl) structure // Acta Cryst.,2006, E62, i23-i25

P. Plachinda and E. Belokoneva. Synthesis and crystal structures of high temperature borate in REE2O3 - Al2O3 - CuO - B2O3 system // Acta Cryst.,2006, A62, s286

E. L. Belokoneva, A. G. Al-Ama, S. Yu. Stefanovich, and P. A. Plachinda. Crystal Structure of the Lead Bromo-Borate Pb2[B5O9]Br from Precision Single-Crystal X-ray Diffraction Data and the Problem of Optical Nonlinearity of Hilgardites //Crystallography Reports, 2007, Vol. 52, No. 5, 795–800

P. Plachinda and E. Belokoneva. High temperature synthesis and crystal structures of new representatives of huntite family REEAl3(BO3)4.// Cryst. Res. Technol.,2008, 43, No. 2, 157 – 165

P. Plachinda and E. Belokoneva. Synthesis, crystal structure of high temperature commensurate polymorph of Ln4AlCu2B9O23 (Ln=Lu,Ho) and refinement of Cu2Al6B4O17// Z.Anorg.Allg.Chem. 2008, 634, 1965-1970

P. Plachinda and E. Belokoneva. Electron density in the lead bromine and chlorine hilgardites (Pb2[B5O9]Br and Pb2[B5O9]Cl), on the basis of precise x-ray diffraction data and ab-initio calculations, correlation with the properties.//Cryst. Res. Technol., 2010, 45, No. 10, 1041 – 1049

P. Plachinda, S. Rouvimov, R.. Solanki. Structure analysis of CVD graphene films based on HRTEM contrast simulations. // Physica Status Solidi (a), 2011, 208(11), 2681–2687.

P. Plachinda, D. Evans, R. Solanki. Electronic properties of metal-arene functionalized graphene. //The Journal of Chemical Physics, 2011, 135(4), 044103.

P. Plachinda, D. Evans, R. Solanki. Thermal conductivity of graphene nanoribbons: effect of the edges and ribbon width. //Journal of Heat Transfer, 2011, accepted

Oral presentations

Autumn School on Materials Science and Electron Microscopy (Berlin, Germany, 8-11 Oct, 2007) "Microscopy - advanced tools for tomorrow's materials"

American Physical Society Meeting (Portland, OR, 15-19 March, 2010), “Crystallographic Image Processing Software for Scanning Probe Microscopy”

Invited talk: IEEE Nano (Portland, OR, August 15-19, 2011) “Graphene Bandgap Modification Via Functionalization with Metal-Bis-Arene Molecules”

IEEE Nano (Portland, OR, August 15-19, 2011) “HRTEM Contrast Analysis for Structure Characterization of Graphene Films Grown by CVD”

Poster presentations

7th European Conference on Applications of Polar Dielectrics, Book of Abstracts 3-93 (Liberec, Czech Republic, 6-9 Sept, 2004)

The 4th International Conference on Inorganic Materials. Book of Abstracts p.163 (Antwerp, Belgium, 19-21 Sept.2004)

XXth Congress of the International Union of Crystallography. Book of Abstracts P.09.06.2 (Florence, Italy, 23-31 August 2005)

IVth. National Crystal-chemical Conference. Posters (№ 26,48) (Chernogolovka, Russia, June 2006) 2

23rd European Crystallography Meeting. Book of Abstracts m41.p30 (Leuven, Belgium, 6-11 Aug, 2006) and Satellite Conference on Mathematical and Theoretical Crystallography

Materials and Microanalysis. Book of abstracts, p. 456, 1348, 1504, 1822 (Portland, OR, 1-5 Aug, 2010)

2011 MRS Fall Meeting. (Boston, MA, November 28 - December 2, 2011) AA20.22. “Engineering of Graphene Band Structure by Haptic Functionalization.”