CURRICULUM VITAE

Galina E. Yalovega

1. Personal data

Data/ Place of birth: 1968, Taganrog (USSR)

Nationality: Russian Federation

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2. Professional data

Professional address (actual): Faculty of Physics, Southern Federal University, 5 Zorge str., Rostov-on-Don, 344090, Russia.

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3. Education and Degrees

2012 Full Doctor Degree (Habilitation) in Physics, Southern Federal University (Russia)

Thesis: " Local atomic and electronic structure of a number of compounds without structural order: investigation by the methods of X-ray spectroscopy using synchrotron radiation"

2005 Docent, Rostov State University (Russia)

2000 *Ph.D.* in Physics, Faculty of Physics, Rostov State University (Russia)

Thesis: «Electronic and local structure of some cluster and protein materials»

1998 Master's Degree in Physics, Faculty of Physics, Rostov State University (Russia)

1996 Bachelor Degree in Physics, Faculty of Physics, Rostov State University (Russia)

4. Academic positions

2013-today Full Professor at Faculty of Physics, Southern Federal University (Russia).

2003-2013 Associate Professor at Faculty of Physics, Southern Federal University (former Rostov State University).

2000-2003 Senior lecturer at Faculty of Physics, Rostov State University (Russia).

1998-2000: PhD student, Department of solid state physics, Rostov State University (Russia).

5. Research activity

2010-today Head of laboratory X-ray spectroscopy, Southern Federal University (Russia, former Rostov State University).

1993-2010 Researcher at Laboratory x-ray spectroscopy, Rostov State University (Russia).

Scientific publications

Published **65** papers in refereed journals, **113** abstracts

Scopus -54 papers, citation index 213, h-8;
Web of science- 45 papers, citation index 226, h-9;

***Methods*:**

- Experimental investigation by the methods of X-ray absorption (XAS), X-ray fluorescence (XRF) and X-ray photoelectron (XPS) spectroscopy using synchrotron radiation (BESSY-II (Berlin), DESY (Gamburg), LNF (Italy), Kurchatov Center (Moskow), Soleil (France), ESRF (France);
- Advanced method of theoretical analysis of X-ray Absorption Near Edge Structure (XANES) to extract 3D (three dimensional) local atomic nanostructure at high resolution. Full multiple scattering XANES simulations (**FEFF 9.03**);
- Advanced DFT quantum chemistry calculations including geometry optimization;
- Non-muffin-tin Finite Difference method for XANES/EELS simulations (**FDMNES-2016**);

Fields of interest

- investigation of the composition, local atomic and electronic structure in various types of condensed matter including:
  - -nanocomposites;
  - -free and supported clusters;
  - -liquid materials and amorphous alloy;
  - -various types of solids (advanced alloys, semiconductors, modern magnetic materials);
  - -biological materials with active metal centers;
  - -nanopartical, nanoclasters, nanotubes;
  - -biominerals;
- effects and properties under the study:

-local structure around active metal center in metalloproteins and complexes;

-electronic structure (density of states and fine details of hybridization of electronic states) of condensed materials;

-polarized XANES analysis;

Joint works abroad:

1999 Rome University «La Sapienza» (Italy)

2000 DESY, Hasylab (Hamburg, Germany)

2001 (3 months) Martin Luter University (Halle, Germany)

2003 (1 month) Martin Luter University (Halle, Germany)

2005 University of Science & Technology of China (Hefei)

2005 University of Nijmegen, The Netherlands (Nijmegen)

2008 (1 month) Synchrotron «Soleil», (France)

2013-2015 Synchrotron «Bessy-II», Institute for Nanometre Optics and Technology (HZB) (Germany)

International conference participation:

1998 International Conference of Strong correlated electronic system (France, Paris);

2003 International Conference XAFS-12 (Malmo, Shweeden);

2006 International Conference XAFS-13 (Stanford, USA) (oral);

2007 International Conference VUV-XV (Germany, Berlin) (oral);

2009 International Conference XAFS-14 (Camerino, Italy) (oral);

2016 International Conference Solid Compounds of transition elements (SCTE 2016) (Zaragosa, Spain) (oral);

Honor awards

1996 Soros Student Honor of International Science Education Foundation (N.Y.)

1997 Soros Student Honor of International Science Education Foundation (N.Y.)

1998 Soros Student Honor of International Science Education Foundation (N.Y.)

1999 Soros Ph.D. student Honor of International Science Education Foundation (N.Y.)

2000 Soros Ph.D. student Honor of International Science Education Foundation (N.Y.)

6. Pedagogic activity

Supervising of students:

Graduated PhD students 1

Graduated specialists **9**

Graduated masters **5**

Under supervision now:

PhD students 3;

Bachelors-3;

Lecture courses:

2002-today Synchrotron radiation: methods of investigation of materials

2013-today (In English)
«Synchrotron radiation in materials science»;
«Carbon materials and nanodevice»
«Biomedical nanosystems»

Practical courses

2002-today Laboratory x-ray spectroscopy analysis

2002-today Laboratory of Atomic physics

Participation and leadership in grants

2014-2016 Diagnosis of the composition, structure, morphology organometallic gas-absorbtion nanocomposites based on metal nanoparticles and physico-chemical mechanisms of their interaction with the gaseous medium (Project manager).
Ministry of education and science of the Russian Federation under grant agreement № 11.2432.2014/K.

2014-2016 The development of electronic functional elements on the basis of metal-polymer composite nanomaterials Federal Program "Research and development on priority directions of scientific-technological complex of Russia for 2014-2020". N 14.575.21.0103.

2014-2016 Search for new mixed oxides containing 3d-elements in reduced and mixed oxidation states and their crystal structures, magnetic, electrical and redox properties. RFBR (Russia), 14-03-01122A.

2013 XAFS investigation of the nucleation and growth of Pt and Pt-Me (Me=Co, Ni) nanoparticles for fuel cells application". Project № CH-3813 (ESRF, France). (Project manager)

2013 In situ combined SAXS and XRD investigation of the nucleation and growth of Pt and Pt-Me (Me=Co, Ni) nanoparticles for fuel cells application». Project № 2013_1_121320. (Bessy, Berlin). (Project manager)

2012 In situ combined SAXS and XRD investigation of the nucleation and growth of Pt and Pt-Me (Me=Co, Ni) nanoparticles for fuel cells application». № CH-3570 (ESRF, France). (Project manager)

2012-2014 In-situ combined investigations of nanoparticles nucleation and growth processes of the platinum carbon supported electrocatalysts for low-temperatures fuel cells, RFBR (Russia), 12-08-01193-a.

2011-2013 Dynamics of nanoscale atomic and electronic structure of materials for hydrogen storage under "operando" conditions. Russian Federal Programme "Research and development within priority areas of Russia for 2007-2013" : 2011-2013, Soldatov A (SFedU)- Dmitriev V (SNBL ESRF).

2006-2008 3D local geometry and electronic structure of nanomaterials (AlN nanoparticles and nanotubes): x-ray absorption analysis, Ministry of

Science and Education (Russia) RNP 2.1.1.1038 (2006-2008, Soldatov A V)

2005-2007 Nanoscale 3D geometry and electronic structure of advanced materials for spintronics: Ga-Mn-N, Ga-Mn-As and Ge-Mn-Co dilute magnetic semiconductors - synthesis of materials and x-ray absorption analysis, RFBR (Russia) –NSCF (China) 05-02-39016_a

2005-2006 Local geometry of active center in metalloproteins: x-ray absorption analysis RFBR (Russia) 05-04-49050 (Project manager)

2005 Electronic textbook "X-ray spectroscopy" Rostov State University

2005 Creation of virtual laboratory (Compton effect. Mozli`s law) for course of «Atomic physics». Rostov State University

2003-2006 X-Ray absorption spectroscopic studies of changes in the Ni environment of polymerization and epoxidation catalysts during turnover RFBR (Russia) – NWO (Netherlands) 03-03-89010_NWO.

2004 Electronic textbook "Synchrotron radiation" Rostov State University

2004 Local and electronic structure of copper nanoclusters: analysis of x-ray absorption, President of Russian Federation grant MK-2048.2004.2 (Project manager)

2002-2004 Development of new methods for the study of local structure and its application for quantum nanostructures in heteroepitaxial systems All-Russian Programme "Integration" I0761 (2002-2004)

2002-2003 X-ray interaction with spin-polarized electronic structure of materials. RFBR (Russia) 02-02-17922.

2002-2004 Local and electronic structure of metal nanoclusters: analysis of x-ray absorption, Ministry of Science and Education (Russia) PD02-1.2-198 (Project manager)

2002 INTAS Fellowship grants for Young Scientists Fellowship Reference N YSF 2002-90. (Project manager)

1998-2000 Electronic subsystem and local structure free clusters: X-ray absorption analysis (theory and experiment), 98-02-04097- joint DFG(Germany)-RFBR (Russia) project.