Assoc. Prof. RNDr. Adriana Zeleňáková, PhD.
Pavol Jozef Šafárik University in Košiciach
Faculty of Science
Institute of Physics
Department of Condensed Matter Physics
Park Angelinum 9, 040 01 Košice
tel.: +421 55 2342536
E-mail: adriana.zelenakova@upjs.sk
URL: http://exphys.science.upjs.sk/

Current position(s):
Associated Professor of Condensed Matter Physics
Head of Department of Condensed Matter Physics

Profile:
Assoc. Prof. Adriana Zeleňáková, PhD. in his scientific research activities he deals with the following issues:
1. Research of magnetic nanoparticle systems based on Fe, Co, Gd, applicable from the viewpoint of biomedical applications as drug carriers,
2. Magnetism of nanoparticle systems, the phenomenon of superparamagnetism, the phenomenon of magnetization quantization, the phenomenon of superspin glass, the phenomenon of bias exchange bias.
3. Magnetocaloric effect in nanoparticle systems based on Gd.
He co-authored more than 50 CC scientific publications, cited more than 250 times (h-index: 10), 6 invited lectures.

Experience:
1997 - 2000 researcher at the Department of Experimental Physics, PF UPJŠ
2000 - 2006 junior researcher at the Department of Experimental Physics, PF UPJŠ,
1999 Institute of Physics, Polish Academy of Sciences, Varsaw, Poland, Research study and realization of experimental measurements of the domain structure of ferromagnetic magnetic soft materials by means of a magnetooptic apparatus using Kerrov phenomenon, September-October 1999
1999 Research Institute for Technical Physics and Material Science, Hungarian Academy of Sciences, Budapest, Hungary, Research study focused on the experimental study of the magnetic domain structure of ferromagnetic magnetic soft materials by SEM (scanning electron microscope), May 1999
2000 Institute of Physics, Polish Academy of Sciences, Varsaw, Poland, Research study and experimental measurements of the domain structure of ferromagnetic magnetic soft materials using a magnetooptical apparatus using the Kerrov phenomenon, May-June 2000
2007 Deutche-Electron Synchrotron / DESY-Hasylab, Residual Stay and Measurements on Synchrotron DORIS, beamline B2, in-situ measurement of Fe and Co nanoparticle structure using high-energy XRD, temperature range up to 800 ° C. Hamburg, Germany, January 2007
2008 Deutche Electron Synchrotron / DESY-Max von Laue Institute, Researchers' Surveys and Measurements on Synchrotron PETRA III, beamline P02.1, Managing an Experimental Method for Measuring Structural Properties of Fe and Co Nanoparticle Systems, Hamburg, Germany, November 2013
2015 Deutche Electron Synchrotron / DESY-Max von Laue Institute, Researchers' Survey and Measurements on Synchrotron PETRA III, beamline P02.1, Measurement of Structural Properties of Nanoparticle Systems, Hamburg, Germany, December 2015
2017 DUBNA FLNP, Research stay and measurements at the IBR 2 nuclear reactor
2014 Associated professor in the field of study 4.1.3 physics of condensed matter and acoustics

Organisation of Scientific Meetings:

1. Member of the organizing committee conference CSMAG'98 1998, Košice
2. Member of the organizing committee conference CSMAG'04, l 2004, Košice
3. Member of the organizing committee conference CSMAG'07, 9.-12. júl 2007, Košice
4. Member of the organizing committee conference CSMAG'10 2010, Košice
5. Member of the organizing committee conference CSMAG'13, 2013, Košice
6. Member of the organizing committee conference CSMAG'16, 2016, Košice
7. Member of the organizing committee conference SFEL 2017.
8. Member of the organizing committee conference SFEL 2017.

Projects:

1. APVV-15- 0152: „Intelligent Nanoporous Systems for Drug Delivery“, 2016-2020, responsible investigator: V. Zeleňák
2. APVV-0073-14, Magnetocaloric effect in quantum and nanoscopic systems, 2015 - 2019, responsible investigator: M. Orendáč
3. APVV-15-0115, Design of Structure and Functional Properties of Magnetically Soft Composite Materials Based on 3-D Transition Metals, 2016 - 2020, responsible investigator: P. Kollár
4. Research Centre of Progressive Materials and Technologies for Present and Future Applications "**PROMATECH**", ŠF 26220220186, 2013-2015, *ŠF EÚ 2007-2013 z OPVaV*
5. Center of Excellence of Progressive Materials with Nano and Submicron Structure, ŠF 26220120019, 2009-2011 a ŠF 26220120035, 2010-2013 , *ŠF EÚ 2007-2013 z OPVaV*

Five representative publications:

Researcher ID (in SCOPUS): **56086445800**

1. **A. Zeleňáková**, P. Hrubovcak, O. Kapusta, V., Zelenak, V. Franco, Large magnetocaloric effect in fine (GdO3)-O-2 nanoparticles embedded in porous silica matrix, Applied Physics Letters 109 (2016) 122412
2. **A. Zeleňáková**, V. Zeleňák, S. Michalík, J. Kováč, M. Meisel, Structural and magnetic properties of CoO-Pt core-shell nanoparticles, Physical Review B , 89 (2014) 104417.
3. **A. Zeleňáková**, V. Zeleňák, I. Mat'ko, M. Strečková, P. Hrubovčák, J. Kováč, Superferromagnetism in chain-like Fe@SiO2 nanoparticle ensembles, J. Appl. Phys. 116 (2014) 033907
4. V . Zelenak, D. Halamova, **A. Zelenakova,** V. Girman, Periodic 3D nanoporous silica modified by amine or SPION nanoparticles as NSAID delivery system, Journal of Porous Materials 23 (2016) 1633-1645.
5. V. Zeleňák, **A. Zeleňáková**, J. Kováč, U. Vainio, N. Murafa, Influence of Surface Effects on Magnetic Behavior of Hematite Nanoparticles Embedded in Porous Silica Matrix, The Journal of Physical Chemistry C, 113 (2009) 13045-13050.

Fellowships / Awards / Memberships of Scientific Societies:

Co-garant at III. degree in the field Progressive materials PMd,
Member of commissions for rigorous examinations, dissertation tests,
Member of the Defense Committee in the form of co-tutelle in PMd.