



**Dr. Marianna BATKOVA (Mlynarcikova)**

First Last name (Maiden name)

Contact information

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Current position Senior research worker at the Department of Magnetism, Institute of Experimental Physics, Slovak of the Academy of Sciences in Kosice, Slovak republic (since 2017)

Education 2004 – 2008 *PhD in Condensed Matter Physics*  
Institute of Experimental Physics, Slovak of the Academy of Sciences, Slovak republic/ Faculty of Science, Pavol Jozef Safarik University in Kosice, Slovak republic

1986 –1992 *Master of Condensed Matter Physics*  
Faculty of Science, Pavol Jozef Safarik University in Kosice, Slovak republic

Awards 2021 *Award of the Slovak Academy of Sciences for the results of international scientific and technical cooperation (in the field of studying magnetic nanoparticles that change the properties of traditional materials and open new application possibilities)*  
2012 *The most significant results award of IEP SAS*  
2008 *The most significant results award of IEP SAS*  
2005 *The most significant results award of IEP SAS*

Professional experience *Research experience in electrical transport properties of rare earth borides, with concern of the properties at low temperatures; characterization of surface, electrical and magnetic properties of different materials by atomic force microscopy techniques. .*  
Co-author of 42 CC publications

Projects

*Current*

APVV-20-0299 Hydrogen evolution electrocatalysts for future electrolyzers and fuel cells (2019–continuing); principal investigator from IEP SAS

VEGA 2/0043/21 Self-organization processes in soft hybrid mixtures of liquid crystals and nanoparticles (2021–continuing) investigator

*Finished*

APVV 15- 0115 Design of the structure and the functional properties of soft magnetic 3-d transitions metals based composites; Principal investigator from IEP SAS

VEGA 2/0015/17 The role of surface states in samarium hexaboride and other valence-fluctuating systems exhibiting metal-insulator transition; (2017-2020); principal investigator

VEGA 2/0184/13 Thin films and thin film structures for sensoric and memristive applications (2013-2016); principal investigator

VEGA 2/0133/09 Anomalous transport properties of strongly correlated electron systems (2009-2012); deputy of principal investigator

Selected publications in SCI-indexed journals

- **Nanoarchitectonics of binary transition metal phosphides embedded in carbon fibers as a bifunctional electrocatalysts for electrolytic water splitting**  
M.Streckkova, O.Petrus, A.Guboova, R.Orinakova, V.Girman, C.Beraa, M.Batkova, M.Balaz, J.Shep, J.Dusza  
Journal of Alloys and Compounds 923 (2022) p. 166472; Scimago best quartile 2021–Q1 ; IF2021 – 6.371
- **The Influence of Microstructure on the Electromagnetic Behavior of Carbon Steel Wires**  
Isadora Maria Oliveira Anício Costa, Marianna Batková, Ivan Batko, Abdelkader Benabou, Christophe Mesplont and Jean-Bernard Vogt  
Crystals 12 (2022) p. 576; Scimago best quartile 2021–Q2 ; IF2021 –2,67
- **Effect of heat treatment on the morphology of carbon fibers doped with Co2p nanoparticles**  
Stelmakova M., Streckkova M., Orinakova R., Guboova A., Balaz M., Girman V., Mudra E., Bera C., Batkova  
Chemical Papers, 76 (2022) pp. 855–867; Scimago best quartile 2021–Q2 ; IF2021 –2.146
- **Dependence of the nanoscale composite morphology of Fe<sub>3</sub>O<sub>4</sub> nanoparticle-infused lysozyme amyloid fibrils on timing of infusion: A combined SAXS and AFM study**  
Martin A. Schroer \*, Po Sheng Hu \*, Natalia Tomasovicova, Marianna Batkova, Katarina Zakutanska, Po-Yi Wu, Peter Kopcansky  
Molecules 2021, 26(16), p.4864; Scimago best quartile 2020– Q1; IF2020 –4.412
- **Electrical resistivity of SmB<sub>6</sub> thin films prepared by pulsed laser deposition with various heat treatment**  
Marianna Batkova, F. Stobiecki, B. Szymański, P. Kuświk  
Physica B 613 (2021) p.413021; Scimago best quartile 2020– Q2; IF2020 – 2,436
- **Electrical properties of SmB<sub>6</sub> thin films prepared by pulsed laser deposition from a stoichiometric SmB<sub>6</sub> target**  
Marianna Batkova, Ivan Batko, Feliks Stobiecki, Bogdan Szymanski, Piotr Kuswik, Anna Mackova, Petr Malinský  
Journal of Alloys and Compounds 744 (2018) pp.921-827; Scimago best quartile 2017– Q1; IF2017 – 3.779
- **SmB<sub>6</sub>: A material with anomalous energy distribution function of charge carriers?**  
Batko, I., Batkova, M.  
Materials Letters 236 (2019) pp. 260-263 Scimago best quartile 2018–Q1; IF2018 – 3.019
- **Low temperature resistivity studies of SmB<sub>6</sub>: Observation of two-dimensional variable-range hopping conductivity**  
Marianna Batkova, Ivan Batko, Slavomir Gabani, Emil Gazo, Elena Konovalova, Vladimir Filippov  
Physica B: Condensed Matter 536, (2018) pp.200-202; Scimago best quartile 2017–Q2; IF2017 – 1.453
- **Magnetic properties and loss separation in FeSi/MnZnFe<sub>2</sub>O<sub>4</sub> soft magnetic composites**  
M. Lauda, J. Füzér, P. Kollár, M. Strečková, R. Bureš, J. Kováč, M. Baťková, I. Baťko  
Journal of Magnetism and Magnetic Materials 411 (2016) pp.12–17; Scimago best quartile 2015–Q1; IF2015 – 2,357
- **Evidence for magnetic phase separation in colossal magnetoresistance compound EuB<sub>5.99</sub>Co<sub>0.01</sub>**  
I. Batko, M.Batkova, V.H.Tran, U.Keiderling, V.B.Filipov  
Solid State Communications 190 (2014) pp.23–27; Scimago best quartile 2013–Q1; IF2013 – 1.698
- **Electrical resistivity and superconductivity of LaB<sub>6</sub> and LuB<sub>12</sub>**  
Bat'ko, I., Bat'ková, M., Flachbart, K., Filippov, V.B., Paderno, Yu.B., Shicevalova, N.Yu., Wagner, Th.  
1995 Journal of Alloys and Compounds 217 (2) p. L1-L3  
IF1994 – 0.961