

Curriculum Vitae

Anna Petrova Petrova

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Education

2016 - PhD in Physics, Space Research and Technology Institute, BAS. Ph. D. thesis: „*Structure, properties and applications of detonation nanodiamonds*”

1996 - MSc in Physics, Faculty of Physics, Sofia University „St. Kliment Ohridski”, Diploma thesis: „*Analysis and interpretation of magnetic measurements (Livingston Island)*“ in Geophysics; second degree Physics Teacher

Professional Career

From 1996 to 1998 teacher of Man and nature, Physics and Astronomy for students in grades 4-12

From 1998 until now physicist in Department of „Space Material Science”, SRTI-BAS:

- 2000 - Research Fellow
- 2012 - Chief Assistant
- 2015 - Assistant Professor
- 2016 - Assistant Professor PhD
- 2017 - Chief Assistant PhD
- 2021 - Associate Professor

Supervisor of full-time PhD student Petya Tabakova (2024)

List of selected publications

Petrova A, Yaneva S, Stoichev N “Solidification of aluminium alloys in different conditions” *J. Phys.: Conf. Ser.*, 2668, 012005 (2023)

doi:10.1088/1742-6596/2668/1/012005

Petrova A, Yaneva S, Miteva A, Stefanov G, Barbov B “Study of oxidation kinetics of Al-Si alloys with high concentration of impurities (Fe, Zr, V)” *Advanced Engineering Letters*, 1, 1, 1-7 (2022)

doi: 10.46793/adeletters.2022.1.1.1

Petrova A, Yaneva S, Stoichev N “Ideas for Changing the Microstructure and Properties of Aluminum Alloys” *Research & Development in Material Science*, 17, 3, 1952-1960 (2022)

doi:10.31031/RDMS.2022.17.000911

Miteva A, **Petrova A**, Stefanov G “Surface oxidation of Al-Si alloys at elevated temperatures” *Appl. Eng. Lett.*, Vol. 6, №3, 105-110 (2021)

doi: 10.18485/aeletters.2021.6.3.3

Petrova A, Stefanov G, Yaneva S, Avdeev G, Miteva A, Petrov R “Influence of inert particle additives on properties of nano-microcrystalline alloys on based on Al-Fe-V-Si” *Metallurgist*, 64, 253-262 (2020)

doi: 10.1007/s11015-020-00990-1

Petrova A, Stefanov G, Miteva A “Some properties of the nanozone in nano-microcrystalline ribbons of aluminium alloys” *Comptes rendus de l’Academie Bulgare des Sciences*, Vol 73, №10, 1434-1442 (2020)

doi: 10.7546/CRABS.2020.10.13

Петрова А, Стефанов Г, Янева С, Авдеев Г, Митева А, Петров Р “Влияние добавок инертных частиц на свойства наномикроструктурных сплавов на основе Al-Fe-V-Si” *Металлурџ*, №3, 79-85 (2020)

Petrova A, Miteva A “Influence of additive on structural and physicomechanical properties of nano-microcrystalline aluminum alloys” *JBTA*, Vol. 26, №2, 314-318 (2020)

Petrova A, Miteva A, The abrasive properties of detonation nanodiamonds, *13th International Conference on Tribology BULTRIB*, 93-97 (2018)

<http://tribolab.mas.bg.ac.rs/proceedings/bultrib/2018.pdf>

Miteva A, **Petrova A** “Detonation nanodiamonds - some biomedical applications” *13th International Conference on Tribology BULTRIB*, 98-103 (2018)

<http://tribolab.mas.bg.ac.rs/proceedings/bultrib/2018.pdf>

Barbov B, **Petrova A** “Oxidation of aluminum alloys in the processing condition”, *SES 2018* 447-450 (2018)

<http://space.bas.bg/SES/archive/SES%202018%20DOKLADI/PROCEEDINGS%20SES%202018.pdf>

Barbov B, **Petrova A** “Microstructure and mechanical properties of nano-microcrystalline aluminum alloys” *SES 2018*, 451-456 (2018)

<http://space.bas.bg/SES/archive/SES%202018%20DOKLADI/PROCEEDINGS%20SES%202018.pdf>

Ivanova T, Harizanova A, **Petrova A** “Morphological and optical investigation of Sol-Gel ZnO films” *J. Phys.: Conf. Ser.*, Vol. 700, №1, 012047-012054 (2016)

doi:10.1088/1742-6596/700/1/012047

Karaguiozova Z, **Petrova A**, Ciski A, Cieślak G “Displacement (Immersion) Tin Plating” *SES 2015*, 383-388 (2016)

http://space.bas.bg/SES/archive/SES%202015_DOKLADI/PROCEEDINGS%20SES%202015.pdf

Pejova B, Nesheva D, Aneva Z, **Petrova A** “Photoconductivity and relaxation dynamics in sonochemically synthesized assemblies of AgBiS₂ Quantum Dots” *J. Phys. Chem. C*, 9327455, 19327447, 115 (1), 37-46 (2011)

doi: 10.1021/jp106605t

Nesheva D, Šćepanović M, Levi Z, Aškračić S, Aneva Z, **Petrova A**, Popovic Z “Structural characterization and photoluminescence of ZnSe nanolayers” *J. of optoelectronics and advanced materials*, Vol. 11, №9, 1351-1354 (2009)

Dimitrova M, Pramatarova L, Pecheva E, Laquerriere P, Montgomery P, **Petrova A**, Altankov G “Osteoblast cell activity on calcium phosphate layers grown on glass by a laser-liquid-solid interaction” *J. of optoelectronics and advanced materials*, Vol. 9, № 1, 240-243 (2007)

Nesheva D, Aneva Z, Pejova B, Grozdanov I, **Petrova A** “Photoelectrical characterization of nanocrystalline AgBiS₂ thin films” *J. of optoelectronics and advanced materials*, Vol. 11, №9, 1347-1350 (2009)

Pramatarova L, Pecheva E, Dimitrova M, Laquerriere P, **Petrova A**, Montgomery P, Petrov T “Mechanical properties of extracellular matrix/hydroxyapatite composites” *J. of optoelectronics and advanced materials*, Vol. 9, №1, 229–232 (2007)

Pejova B., Grozdanov I., Nesheva D., **Petrova A** ”Size-dependent properties of sonochemically synthesized three-dimensional arrays of close-packed semiconducting AgBiS₂ quantum dots”, *Chemistry of Materials*, Vol. 20, Issue 7, 2551-2565 (2008)
doi 10.1021/cm071794k

Nesheva D, **Petrova A**, Stavrev S, Levi Z, Aneva Z “Thin film semiconductor nanomaterials and nanostructures prepared by physical vapour deposition: An atomic force microscopy study”, *J. of Physics and Chemistry of Solids*, Vol. 68, Issue 5-6, 675-680 (2007)
doi: 10.1016/j.jpcs.2007.02.025

Kaschieva S, Christova K, Boradjiev I, **Petrova A**, Koprinarova J, Dmitriev S “The role of high-energy electron irradiation induced defects in some mechanical properties of Si-SiO₂ structures”, *J. of optoelectronics and advanced materials*, Vol. 9, №2, 394-397 (2007)

Participation in scientific projects

- Program Education with Science, project „Introducing the student and youth audience to the research approaches in physics; in particular in astronomy, space physics and space technology”
<https://educationwithscience.online/projects/> (2019-2020)

- Joint research project „Optimization of surface properties of aluminum alloys with prospects for terrestrial and aerospace applications”, Partner institute: Institute of Metallurgy and Materials Science of Polish Academy of Sciences (with support of the Institute of Precision Mechanics, Łukasiewicz Research Institutes Network) (2018-2019)

- Joint research project „Influence of nanosized additives on the physical and mechanical properties of the composite materials and coatings”, Partner institute: Institute of Metallurgy and Materials Science of Polish Academy of Sciences (with support of the Institute of Precision Mechanics, Łukasiewicz Research Institutes Network) (2015-2017)

- Project “Investigation of nanomodified metal alloys and their application In casting”, National Science Fund (Bulgaria), Contract № 311/19.12.08 (2010-2013)

- Project “Development and research for new composite biocompatible ceramic material with nanocarbon coating intended for endo prosthesis”. National Science Fund (Bulgaria), Contract № DO 02-234/2008 (2008-2012)

- European Space Incubator network “ESINET” - European Space Incubators Network, FP5, FP6 and FP7 (2001-2012)

- Innovation Network EBN, FP6

- International Thematic Scientific Network “Envitech-Net” (2009-2010)

- “NAVOBS“, “A support measure to boost the business prospects of GMES and Telecom Satellites through focused and innovative RTD work involving SMEs”, Contract №SSA3-CT-2003-502903, FP 6 (2003-2005)

- Project “Hardened aluminum alloys”, Partner institute: TISNCM, Toitzk, Russia (2006)

- “NAVOBS+“, “Participation of Small and Medium-sized enterprises (SMEs) in Research and Technology Development (RTD) activities related to the development of

innovative services based on Space infrastructures' worked parts of EU and ESA", Contract №030980, FP 6 (2006-2008)

- First ESA Technology Transfer Road Show in Bulgaria (2008)
- Project "X-Gear" from FP6. Contract № 030 433, "Development of Gear Drive-Trains Based on New Materials and Novel Gear Systems" (2006-2010)
<http://mech-ing.com/x-gear/X-GEAR-Presentation-bg.pdf>
<http://www.x-gear.org/>, <http://dappolonia-reseath.com/xgear>
- Project "I-Stone" from CORDIS "Re-Engineering of Natural Stone Production Chain through Knowledge Based Processes, Eco-Innovation and new Organizational Paradigms" from FP5, Contract № 515 762-2 IP (2005-2009)
<http://www.istone.ntua.gr>
- Project "Development on the methodology and technology for tightening the mechanics of the gate valve", Contract №4ИФ-02-5 with National Innovation Fund (Bulgaria) (2009)
- European Space Incubators Network "ESINET", FP6
- Project "OSNET" from PII5, "Realization of Thematic Network on Ornamental Stones", Contract №GTG1-2000-28020 (2001-2005)
- Project "Smart wire" from FP5, Co-operative Research project under the KRAFT Program, Contract № G1ST-CT-2002-50265 (2003-2005)
- Project "Synthesis, characterization and applications of new materials with nanodiamond", HT3 - 01/2004 (2004-2007)

Languages

English

Russian

20.05.2024

Sofia