

Curriculum Vitae

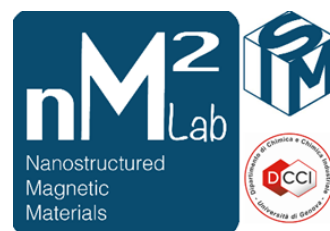
Dr. Alexander Omelyanchik

in Cyrillic: Александр Омелянчик
Transliteration: Aleksandr Omelianchik



Smart Materials &
Biomedical Applications
IKBFU Research and Education Center

University of Genova,
Department of Chemistry and Industrial Chemistry (DCIC)
Nanostructured Magnetic Materials Laboratory (nM²-Lab)
Address: Via Dodecaneso 31 16146, Genova, Italia



Laboratory of Nano- & MicroMagnetics (LNMM),
REC Smart Materials and Biomedical Applications,
Immanuel Kant Baltic Federal University (IKBFU);
Address: Gaidara 6, 23600 Kaliningrad, Russia

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COLAB ID: [R-35DBC-134CB-MG98Q](#)
ResearchGate: researchgate.net/profile/Alexander_Omelyanchik

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Email: asomelyanchik@kantiana.ru;
Aleksander.Omelianchik@edu.unige.it

Date of Birth: 23 August 1990
Place of Birth: Sevastopol, USSR

Employment experience

Aug. 2023 – present University of Genova, DCIC, nM²-Lab, *Postdoc*;

Jan. 01 – Dec. 31, 2022 Consiglio Nazionale delle Ricerche – Istituto di Struttura della Materia;
Project H2020 “MAGnetic nanoparticle based liquid Energy materials for
Thermoelectric device Applications MAGENTA”;
Associated Researcher;

Aug. 2015 – present IKBFU, Laboratory of Nano- & MicroMagnetics, *Young Researcher*.

Education

Sep. 2019 – June 2021 University of Genova, DCCI, *PhD research scholarships* supervised by
Prof. Fabio Canepa and **Prof. Davide Peddis**;

2016 – 2022 IKBFU, Institute of Physics, Mathematics and Information Technology,
PhD-student, supervisors: **Dr. Valeria Rodinova** and **Prof. Davide Peddis**
Thesis: “Magnetic anisotropy of oxide nanoarchitectures”
Date of defense: June 16, 2022
Dissertation Council Code: MSU.013.5 (MSU.01.18)
Organization: Lomonosov Moscow State University
Area of expertise: Physics and Mathematics
Specialty: 01.04.11 - Physics of magnetic phenomena
Opponents: Alexander P. Pyatakov, Ekaterina A. Elfimova, Alexey Yu. Karpenkov

available online: <https://istina.msu.ru/dissertations/452817871/>

2007–2012 IKBFU, Physics & Technology Institute, Department of Radiophysics with the degree of “specialist of radiophysics and electronics” (*equal to master-degree*).
Thesis: “Investigation of the transmission path of lines of leaky waves with the lumped parameter”

Other activity

2022 – Present Synthesis | Young Scientists Support Foundation,
Member of the Expert Council;

2021 – Present Center for development of gifted children (Kaliningrad Region),
Member of the Expert Council;

Peer-review activity

- *American Scientific Publishers*: Advances in Nano Research
- *Elsevier*: Journal of Alloys and Compounds, Journal of Drug Delivery Science and Technology, Materials Science & Engineering B, Journal of Magnetism and Magnetic Materials
- *IOP Publishing*: Journal of Physics Communications, Journal of Physics, Materials Research Express, Nanotechnology
- *SciELO*: Materials Research
- *MDPI*: Antioxidants, Biosensors, Coatings, Crystals, Electronics, International Journal of Molecular Sciences, Inventions, Journal of Functional Biomaterials, Magnetism, Magnetochemistry, Micromachines, Nanomaterials, Polymers, Sensors, Symmetry
- *Nature Research*: Scientific Reports
- *RSC Publishing*: Nanoscale Advances

Honors

Mar. 2021
Brasilia, Brasil Honorable Mention with the Poster Presentation entitled “Effect of ultrathin shell in $\text{CoFe}_2\text{O}_4/\text{NiFe}_2\text{O}_4$ and $\text{CoFe}_2\text{O}_4/\text{NiO}$ core/shell nanoparticles on magnetic properties” at 4a Jornada Francisco Tourinho conference;

Mar. 2019 Outstanding Reviewer Award winners for 2018, in recognition of the high quality and timeliness of your reviews for Nanotechnology;

Oct. 2018
Zatoka, Ukraine Best poster presentation award on IEEE International Conference on “Nanomaterials Applications & Properties” work entitled “Study of magnetic behavior of magnetite nanoparticles dispersed in fluid”;

Nov. 2017
Moscow, Russia Best oral presentation among young researchers on “Magnetic nanomaterials for biomedicine: synthesis, properties, application”;

Nov. 2017
Kaliningrad, Russia Scholarship from Interdisciplinary Reference Centre: Functionalized Magnetic Materials for Energy and Biomedical Applications.

Organizing work

Aug. 20 – 24, 2023
Svetlogorsk, Russia IBCM_2023 International Baltic Conference on Magnetism,
Chair of local programm committee;

Aug. 29 – Sep. 3, 2021
Svetlogorsk, Russia IBCM_2021 International Baltic Conference on Magnetism:
Focus on nanobiomedicine and smart materials,
Chair of local programm committee;

Aug. 18–22, 2019 Svetlogorsk, Russia	IBCM_2019 International Baltic Conference on Magnetism: Focus on nanobiomedicine and smart materials, <i>Member of organizing committee;</i>
July 2–6, 2018 Rome, Italy	ISMANAM_2018 The 25 th International Symposium on Metastable, Amorphous and Nanostructured Materials, <i>Member of organizing committee;</i>
Aug. 20–24, 2017 Svetlogorsk, Russia	IBCM_2017 International Baltic Conference on Magnetism: Focus on functionalized magnetic structures for energy and biotechnology, <i>Member of organizing committee;</i>
Aug. 30 – Sep. 3, 2015 Svetlogorsk, Russia	IBCM_2015 International Baltic Conference on Magnetism: Focus on Biomedical Aspects, <i>Member of organizing committee.</i>
Internships	
Sep. 24 – Oct. 1, 2016	Resource Centre Electrophysical methods, NRC Kurchatov Institute – (Moscow, Russia) under the supervision of Dr. Andrey Emelyanov;
Dec. 13–19, 2016	Laboratory of Pulse Processes, Institute of Electrophysics – (Yekaterinburg, Russia) under the supervision of Dr. Igor Beketov;
Regular visits during 2015–2020 (total time ~2 years)	Nanostructured Magnetic Materials group of Institute of Material Structure / CNR – (Rome, Italy) under the supervision of Dr. Davide Peddis., Dr. Gaspare Varvaro and Dr. Sara Laureti.
Other visits	
Oct. 3 – 4, 2023	Kick-off meeting MAGICAT Project – (Florence, Italy) “MAGnetic Inductive heating of nano-CATalyst onto metal foam as innovative approach for selective aerobic alcohol and polyol oxidation” PRIN: Progetti di Ricerca di rilevante Interesse Nazionale – bando 2022 Prot. 20225RBM98 Hosted by Dr. Claudio Sangregorio;
Sep. 22, 2023	Kick-off meeting ReCREATE Project – (Milano, Italy) “Economia circolare di magneti permanenti a terre rare” Hosted by Dr. Giovanni Dotelli;
Sep. 20 – 24, 2023 GIULIa	Kick-off meeting GIULIa Project – Istituto Italiano di Tecnologia IIT (Genova, Italy) <i>ERC GIULIa project consolidator</i> <i>Oral talk: “Interplay of magnetic anisotropy and Interparticle Interactions in nanoparticle assemblies”</i> Hosted by Dr. Teresa Pellegrino;
Sep. 11–12, 2023	General Meeting (GM04) of the project REMAP – (Luxemburg, Luxemburg) Hosted by Dr. Phillip Dale;
Oct. 26, 2018	Talk at group seminar: “Magnetic nanoparticles for biomedical applications”; Dept. of Microelectronics and Sensors, Institute of Electrical Engineering SAS – (Bratislava, Slovakia) Hosted and invited by Dr. Goran Karapetrov.

Projects and grants

- 2022–2026
member of the team REMAP: REusable MAsk Patterning; funded by the European Commission under the PathFinder open programme (grant agreement No. 101046909)
Coordinator: **Dr. Diego Colombara** (UNIGE) |GA 101046909
Total/UNIGE Budget: 4000/800 k€
- 2022–2024
principal investigator “Development of innovative devices for selective water and air purification based on two-dimensional materials - MXenes” Russian Science Foundation (RSF); № 22-12-20036
- 2021–2024
member of the team “Development and investigation of multimaterials with magnetic nano-inclusions for additive 3d-5d technologies”
Russian Science Foundation (RSF); № 21-72-30032
- 2021–2024
principal investigator “Development of mesoscale hybrid magnetic particles for biomedical applications”
Russian Science Foundation (RSF); № 21-72-20158
- Apr. 2021 – July 2021
PhD research scholarships under “Costruzione e ottimizzazione di sistemi automatici per la mappatura del campo magnetico generato da magneti permanenti attraverso un sonda Hall // Construction and optimization of automatic systems for mapping of the magnetic field generated by permanent magnets through a Hall probe” project led by **Prof. Fabio Canepa** and **Prof. Davide Peddis** (DCCI, University of Genova);
- Sep. 2019 – Apr. 2021
PhD research scholarships under “Sintesi e caratterizzazione cristallografica e magnetica di superstrutture Fe-N ad alta densità magnetica // Synthesis and crystallographic and magnetic characterization of high magnetic density Fe-N superstructures” project led by **Prof. Fabio Canepa** and **Prof. Davide Peddis** (DCCI, University of Genova);
- 2019–2021
member of the team “Complex research of the magnetoelectric effect in the developed and created triple-component elastomers for their application for use as active biological interfaces”
Russian Foundation for Basic Research in the frame of project мол_а_вед; № 18-32-20219
- 2018–2019
principal investigator “Investigation of the interrelation between the magnetic interaction of ferromagnetic nanoparticles in exchange-coupled multifunctional nanocomposites with different types of magnetic ordering of the ferroelectric components” - Russian Foundation for Basic Research in the frame of “my first grant” project (мол_а); №18-32- 01016
- Jan. 30 – June 30, 2018
mobility grant Russian Foundation for Basic Research in the program “Mobility of young scientists” under the supervision of **Prof. Alexander Majouga** from MSU (Moscow, Russia); №17-32-50202
- Oct. 15 – Dec. 15, 2016
mobility grant Russian Foundation for Basic Research in the program “Mobility of young scientists” under the supervision of **Dr. Alexander Inyushkin** from NRC Kurchatov Institute (Moscow, Russia); №16-32-50187
- Oct. 17 – Dec. 10, 2016
principal investigator Interdisciplinary Reference Centre: Functionalized Magnetic Materials for Energy and Biomedical Applications under the supervision of **Dr. Valeria Rodionova**;

2017–2019
member of the team “Physics fundamentals for the creation of electromagnetic actuators based on microwires”, Russian Scientific Foundation, №17-12-01569;

2017–2019
member of the team “Trapping, pinning and injecting of domain wall in wire with cylindrical symmetry with diameters from submicron to few microns and control of domain wall propagation dynamics”, Ministry of Education and Science of the Russian Federation in the framework of government assignment, №3.4168.2017/ПЧ.

Experience

- Vibrating Sample Magnetometer (7400 System, Lakeshore);
- Vector Vibrating Sample Magnetometer (model 10 MicroSense);
- Superconducting Quantum Interference Device (SQUID, Quantum Design);
- Differential Scanning Calorimeter (F1 Phoenix, NETZSCH);
- Thermogravimetric Analyzer (F3 Tarsus, NETZSCH);
- Differential Thermal Analysis and ThermoGravimetry (LabsysEvo 1600, Setaram);
- Ball milling (Retsch E-Max);
- Optical and fluorescence microscopy (EVOS Cell Imaging Systems);
- Dynamic Light Scattering (Malvern Zetasizer Nano);
- Powder X-Ray Diffraction (Philips, MiniFlex Rigaku, etc.);
- Chemical laboratory, ovens with controlled atmospheres and glovebox;
- 3d-printing: assembling and operating of printers, CAD systems;
- Laboratory automatization: microcontrollers (Arduino), LabView.

Research interests

- 1) Synthesis and magnetic properties of nanoparticles and nanocomposites;
- 2) Application of nanoparticles in biomedicine;
- 3) Investigation of the magnetic interaction between nanoparticles;
- 4) Effect of the magnetic field on the live systems;
- 5) Multiferroic material.

Conferences and Schools

Sep. 20 – 24, 2023
GIULIA
Invited [010] Kick-off meeting “GIULIA” Project– (Genova, Italy)
Invited talk: “Interplay of magnetic anisotropy and Interparticle Interactions in nanoparticle assemblies” (hosted by Dr. Teresa Pellegrino)
A. Omelyanchik, D. Peddis

Aug. 20 – 24, 2023
IBCM
[P27] IBCM_2023 International Baltic Conference on Magnetism – (Svetlogorsk, Russia)
Poster presentation: “Investigation of Magnetic Properties in Cobalt-Doped Nickel Ferrite Nanoparticles: A Comprehensive Study Using Advanced Characterization Techniques”
A. Omelyanchik, M. Albino, B. Muzzi, V. Rodionova, D. Peddis, C. Sangregorio

July 2–7, 2023
SISM
Invited [09] Samarkand International Symposium on Magnetism – (Samarkand, Uzbekistan)
1) *Invited talk:* “Tailoring magnetic properties of MXene nanocomposites through co-precipitation synthesis at reduced scale” (4IT-C-6, p.272)
A. S. Omelyanchik, K. V. Sobolev, N. R. Shilov, N. V. Andreev, M. V. Gorshenkov, V. Rodionova;
[P26] 2) *Poster presentation:* “Fabrication and magnetic characterization of 3d

printed composites from ferrite particles and poly(lactic acid) polymer” (2PO-L2-6, p.25)

A. Amirov, A. Omelyanchik, D. Murzin, V. Kolesnikova, S. Vorontsov, I. Musov, Kh. Musov, S. Khashirova, V. Rodionova;

May 15–19, 2023
Plenary Lecture [08]

1st All-Russian School of the National Centre for Physics and Mathematics in Strong and Superstrong Magnetic Fields / I Всероссийская школа НЦФМ по проблемам исследований в сильных и сверхсильных магнитных полях – (Sarov, Russia)

Plenary talk (in russian): “Magnetic properties of metal oxide nanoparticles / Магнитные свойства наночастиц оксидов металлов”

A. S. Omelyanchik, V. V. Rodionova;

March 1–4, 2023
Apricot
Invited [07]

1st International Conference APRICOT 2023 “Magnetic nanomaterials in biomedicine: synthesis and functionalization” – (Yerevan, Armenia)

1) *Invited talk:* “Scaling down of the co-precipitation synthesis to tune magnetic properties of MXene-based nanocomposites”

A. S. Omelyanchik, K. V. Sobolev, N. R. Shilov, N. V. Andreev, M. V. Gorshenkov, V. V. Rodionova;

[P25]

2) *Poster presentation:* “Magnetic properties of 3D printed composites from mesoscale ferrite particles and biodegradable poly(lactic acid) polymer”

A. Amirov, A. Omelyanchik, D. Murzin, V. Kolesnikova, S. Vorontsov, I. Musov, Kh. Musov, S. Khashirova, V. Rodionova;

February 13–17, 2023
[06]

XXIII Winter School on Continuum Mechanics – (Perm, Russia)

Oral talk (in Russian): “Магнитные свойства сверхмалых наночастиц оксидов железа // Magnetic properties of ultra-small oxide nanoparticles”

A. Омелянчик, В. Родионова;

August 22–26, 2022
EASTMAG
Invited [05]

VIII Euro-Asian Symposium «Trends in MAGnetism» – (Kazan, Russia)

Invited talk: “Effect of BaTiO₃ and Zn_{0.25}Co_{0.75}Fe₂O₄ fillers on mechanical and magnetoelectric properties of P(VDF-TrFE)-based composites” (K.I2)

K.V. Sobolev, V.G. Kolesnikova, A.S. Omelyanchik, Yu.A. Alekhina, L.A. Makarova, V.N. Antipova, A.A. Amirov and V.V. Rodionova;

August 14–20, 2022
SCIS
Lecture [04]

Smart Composites International School – (Kaliningrad, Russia)

Lecture: “Synthesis and magnetic properties of spinel ferrite nanoparticles”

Omelyanchik A., Rodionova V., Peddis D.;

June 28–30, 2022
OCTA
Invited [03]

Special session «Mathematical Modeling of Dynamic Processes» Satellite conference «Optimal Control Theory and Applications» (OCTA 2022)

International Congress of Mathematicians (ICM 2022) – (Yekaterinburg, Russia)

Oral communication: “Chemical tailoring of the magnetic properties of core/shell nanoparticles” (P. 19)

A. Omelyanchik, S. Villa, G. Singh, G. Varvaro, K.N. Trohidou, M. Vasilakaki, F. Canepa, V.V. Rodionova, D. Peddis;

Sep. 14–23, 2021
SCI
[P24]

Congresso Nazionale della Società Chimica Italiana – (Rome, Italy)

Poster presentations online:

1) “Superstructure effect on magnetic properties of magnesium doped maghemite nanoparticles” (FIS PO045)

Alexander Omelyanchik, Nader Yaacoub, Claudia Innocenti, Claudio Sangregorio, Fabio Canepa, Davide Peddis;

[P23]

2) “Best focusing for drug delivery with composite shape NdFeB magnetic

	lenses" (FAR P0033) <u>Alexander Omelyanchik</u> , Gianrico Lamura, Davide Peddis, Fabio Canepa;
Aug. 29 – Sep. 3, 2021 IBCM [P22]	International Baltic Conference on Magnetism – (Svetlogorsk, Russia) <i>Poster presentation</i> : "Magnetic properties of CoFe ₂ O ₄ /NiFe ₂ O ₄ and CoFe ₂ O ₄ /NiO core/shell nanoparticles: the case of ultrathin shells" (P. 179-179) <u>Alexander Omelyanchik</u> , Silvia Villa, Gurvinder Singh, Valeria Rodionova, Fabio Canepa, Sara Laureti, Davide Peddis;
June 13–16, 2021 IEEE-AIM [P21]	Advances in Magnetism 2020 – (Moena, Italy) <i>Poster presentation online</i> : "Synthesis of bismuth and cobalt ferrites nanoparticles for preparation of magnetoelectric nanocomposites" (SMU-P11) <u>Alexander Omelyanchik</u> , Liudmila Makarova, Irina Baraban, Karim Amirov, Vladimir Rodionov, Nikolai Perov, Davide Peddis and Valeria Rodionova;
Mar. 8–12, 2021 JFBFT [P20]	4a Jornada Francisco Tourinho – (Brasilia, Brasil) <i>Poster presentation online</i> : "Effect of ultrathin shell in CoFe ₂ O ₄ /NiFe ₂ O ₄ and CoFe ₂ O ₄ /NiO core/shell nanoparticles on magnetic properties" (P. 01) <u>Alexander Omelyanchik</u> , Silvia Villa, Gurvinder Singh, Valeria Rodionova, Fabio Canepa, Davide Peddis;
Feb. 11–12, 2021 MAGnet [P19]	The VII Italian Conference on Magnetism – (Florence, Italy) <i>Poster presentation online</i> : "Hard/soft and soft/hard magnetic spinel ferrites nanoparticles" (P. 70-70, PS2-C) <u>Alexander Omelyanchik</u> , Silvia Villa, Gurvinder Singh, Gaspare Varvaro, Kalliopi Trohidou, Marianna Vasilakaki, Fabio Canepa, Davide Peddis;
Jan. 29–31, 2020 NALS [P18]	2 nd International Conference on Nanomaterials Applied to Life Sciences – (Madrid, Spain) <i>Poster presentation</i> : "Magnetic Properties of Spinel Ferrite Nanoparticles Engineered by the Synthesis Process and Chemical Composition" (O25) <u>A. Omelyanchik</u> , G. Muscas, S. Villa, F. Canepa, G. Singh, V. Rodionova and D. Peddis;
Feb. 10–12, 2020 SuperFox [P17]	Conference on Superconductivity and Functional Oxides – (Santa Margherita Ligure, Italy) <i>Poster presentation</i> : "Hard/soft and soft/hard magnetic spinel ferrites nanoparticle" (P. 37) <u>A. Omelyanchik</u> , S. Villa, G. Singh, F. Canepa, G. Varvaro and D. Peddis;
Dec. 8–12, 2019 3NANO [P16]	5 th International Conference on Nanoscience, Nanotechnology and nanobiotechnology – (Brasilia, Brasil) <i>Poster presentation</i> : "Magnetic and structural properties of cobalt ferrite nanoparticles doped with zinc and nickel" (P. 60-60) <u>Alexander Omelyanchik</u> , Gurvinder Singh, Mikhail Volochaev, Alexey Sokolov, Ivan Kozenkov, Valeria Rodionova, and Davide Peddis;
Aug. 18–22, 2019 IBCM [P15]	International Baltic Conference on Magnetism 2019 – (Svetlogorsk, Russia) <i>Poster presentation</i> : "Controlling the magnetic properties of sub 10 nm ferrite nanoparticles by engineering the synthesis process" (P. 73) G. Muscas, M. Cobianchi, A. Lascialfari, C. Cannas, A. Musinu, <u>A. Omelyanchik</u> , V. Rodionova, V. Mameli, and D. Peddis;
May 26–31, 2019	10 th International Conference on Fine Particle Magnetism 2019 – (Gijón,

ICFPM [P14]	Spain) <i>Poster presentation: "Magnetocrystalline And Surface Anisotropy In CoFe₂O₄ Nanoparticles Dispersed In Silica Matrix" (P. 63)</i> <u>Alexander Omelyanchik</u> , Maria Salvador, Carla Cannas, Dino Fiorani, Anna Musinu, Montserrat Rivas, Valeria Rodionova, Davide Peddis;
Sep. 9–14, 2018 NAP [P13]	IEEE International Conference on "Nanomaterials Applications & Properties" – (Zatoka, Ukraine) <i>Poster presentations:</i>
[P12]	1) "Nanocomposite of cobalt and bismuth ferrite nanoparticles" <u>Alexander Omelyanchik</u> , Irina Baraban, Davide Peddis and Valeria Rodionova;
[P11]	2) "Magnetic interactions in powder and pressed alpha-iron nanoparticles" <u>Alexander Omelyanchik</u> , Mikhail Gorshenkov, Igor Beketov, Gaspare Varvaro, Valeria Rodionova;
	3) "Study of magnetic behavior of magnetite nanoparticles dispersed in fluid" <u>Alexander Omelyanchik</u> , Sara Laureti, Gaspare Varvaro, Valeria Rodionova, Vladan Kusigerski, Nikola Knezevic, Davide Peddis and Erzsébet Illés;
Sep. 3–7, 2018 JEMS [P10]	9 th Joint European Magnetic Symposia – (Mainz, Germany) <i>Poster presentation: "Surfaces effects and cationic distribution in ultra-small CoFe₂O₄ nanoparticles" (P. 487, P-C.070)</i> <u>Alexander Omelyanchik</u> , Maria Salvador, Carla Cannas, Dino Fiorani, Anna Musinu, Montserrat Rivas, Valeria Rodionova, Davide Peddis;
July 2–6, 2018 ISMANAM_2018 [P9]	The 25 th International Symposium on Metastable, Amorphous and Nanostructured Materials – (Rome, Italy) <i>"Magnetic properties of core/shell manganese oxide nanoparticles before and after degradation in water" (P. 54)</i> <u>Alexander Omelyanchik</u> , Gurvinder Singh, Birgitte Hjelmeland McDonagh, Valeria Rodionova, Dino Fiorani, Davide Peddis, Sara Laureti;
Dec. 13–15, 2017 NALS [P8]	Nanomaterials Applied to Life Sciences – (Gijón, Spain) <i>Poster presentation: "Evolution of magnetic properties of manganese oxide nanoparticles during dissolution" (P. 113)</i> <u>Alexander Omelyanchik</u> , Gurvinder Singh, Birgitte Hjelmeland McDonagh, Valeria Rodionova, Dino Fiorani, Davide Peddis, Sara Laureti;
Oct. 23–27, 2017 [O2]	Magnetic nanomaterials for biomedicine: synthesis, properties, application – (Zvenigorod, Russia) 1) <i>Oral talk (in Russian): "Эволюция магнитных свойств при переходе от наночастиц Mn₃O₄/MnO со структурой ядро/оболочка к полым наночастицам Mn₃O₄ // From Mn₃O₄/MnO core-shell nanoparticles to hollow Mn₃O₄: evolution of magnetic properties"</i> <u>Alexander Omelyanchik</u> , Gurvinder Singh, Birgitte Hjelmeland McDonagh, Valeria Rodionova, Dino Fiorani, Davide Peddis, Sara Laureti;
[P7]	2) <i>Poster presentation: "Development of electro-magnetic manipulator based on planar microwires for control of ferromagnetic nanoparticles"</i> <u>Alexander Omelyanchik</u> , Valeria Rodionova, Valentine Novosad;
Sep. 6–9, 2017 [P6]	Phase Transitions, Critical and Nonlinear Phenomena in Condensed Matter Physics Conference – (Makhachkala, Russia) <i>Poster presentation (in Russian): "Эволюция магнитных свойств при переходе от наночастиц Mn₃O₄/MnO со структурой ядро/оболочка к полым наночастицам Mn₃O₄ // From Mn₃O₄/MnO core-shell nanoparticles to hollow Mn₃O₄: evolution of magnetic properties" (P.248, B2-38)</i>

	<u>A.Омельянчик</u> , Г.Синг, Б.Мак-Донах, В.Родионова, Д.Фиорани, Д.Педдис, С.Лаурети;
Aug. 20–24, 2017 IBCM [P5]	International Baltic Conference on Magnetism 2017 – (Svetlogorsk, Russia) <i>Poster presentations:</i> 1) “From Mn ₃ O ₄ /MnO core-shell nanoparticles to hollow Mn ₃ O ₄ : evolution of magnetic properties” (P 1-1) <u>Alexander Omelyanchik</u> , Gurvinder Singh, Birgitte Hjelmeland McDonagh, Valeria Rodionova, Dino Fiorani, Davide Peddis, Sara Laureti;
[P4]	2) “Magnetic properties of CoFe ₂ O ₄ /SiO ₂ nanoparticles: magnetocrystalline and surface component of anisotropy” (P 1-2) <u>Alexander Omelyanchik</u> , Maria Salvador, Carla Cannas, Dino Fiorani, Anna Musinu, Montserrat Rivas, Valeria Rodionova, Davide Peddis;
July 1–5, 2017 MISM [P3]	Moscow International Symposium on Magnetism 2017 – (Moscow, Russia) <i>Poster presentation:</i> “Study of magnetic behavior of magnetite nanoparticles dispersed in fluid” (P. 296, 2PO-J-43) <u>Alexander Omelyanchik</u> , Sara Laureti, Gaspare Varvaro, Valeria Rodionova, Vladan Kusigerski, Nikola Knezevic, Davide Peddis and Erzsébet Illés;
Nov. 8–11, 2016 [O1]	XIV Kurchatov Youth Scientific School – (Moscow, Russia) Oral talk (<i>in Russian</i>): “Investigation of magnetic properties of iron oxide nanoparticles” <u>A. Omelyanchik</u> , V. Bagratashvily, A. Emelyanov, A. Inushkin, V. Rodionova, A. Tandenkov, L. Sajti, B.N.Chichkov;
Oct. 12–16, 2016 [P2]	The International Joint School “Smart Nanomaterials and X-ray Optics 2016: Modeling, Synthesis and Diagnostics” – (Kaliningrad, Russia) <i>Poster presentation:</i> “Measuring magnetic properties of ferrofluids using Henkel plots protocol” <u>Alexander Omelyanchik</u> , Erzsébet Illés, Sara Laureti, Gaspare Varvaro, Valeria Rodionova, Ana Mrakovic, Vladan Kusigerski, Vojislav Spasojevic, Sanja Vranjes-Djuric, Nikola Knezevic and Davide Peddis;
Apr. 18–22, 2016 [P1]	Italian School on Magnetism – (Milan, Italy) <i>Poster presentation:</i> “Experimental protocols for measuring magnetic properties of ferrofluids” <u>Alexander Omelyanchik</u> , Erzsébet Illés, Sara Laureti, Gaspare Varvaro, Valeria Rodionova, Ana Mrakovic, Vladan Kusigerski, Vojislav Spasojevic, Sanja Vranjes-Djuric, Nikola Knezevic and Davide Peddis;
Oct. 26–28, 2015	XI National Conference on Nanophase Materials – (Rome, Italy);
Aug. 30 – Sep. 3, 2015	International Baltic Conference on Magnetism: Focus on Biomedical Aspects – (Svetlogorsk, Russia).

Conference proceedings:

- 1) Experimental protocols for measuring properties of nanoparticles dispersed in fluids;
A. Omelyanchik, V. Rodionova, D. Peddis, G. Varvaro, S. Laureti, M. Salvador, A. Mrakovic, V. Kusigerski, E. Illés, N. Knezevic;
IEEE Xplore 2018; IEEE 8th International Conference Nanomaterials: Application & Properties (NAP)

DOI: [10.1109/NAP.2018.8915059](https://doi.org/10.1109/NAP.2018.8915059)

- 2) Composite multiferroic materials consisting of NdFeB and PZT particles embedded in elastic matrix: The appearance of electrical polarization in a constant magnetic field;
Liudmila Makarova, Yuliya Alekhina, Elena Kramarenko, [Alexander Omelyanchik](#), Valeria Rodionova, Olga Malyshkina, Nikolai Perov;
EPJ Web of Conferences 2018; Moscow International Symposium on Magnetism (MISM 2017)
DOI: [10.1051/epjconf/201818507008](https://doi.org/10.1051/epjconf/201818507008)
- 3) Magnetic Properties of Nanoparticles Prepared from α -Fe Target by Laser Ablation in Liquids;
M. M. Nosan, A. S. Omelyanchik, I. G. Samusev, N. M. Myslitskaya, R. Y. Borkunov, I. I. Lyatun, V. V. Rodionova, V. V. Bryukhanov,
IEEE Xplore 2018; Progress In Electromagnetics Research Symposium (PIERS — FALL 2017),
DOI: [10.1109/PIERS-FALL.2017.8293120](https://doi.org/10.1109/PIERS-FALL.2017.8293120)

Proceedings indexed in elibrary.ru (available only in Russian):

- 1) “Конструкция нового электромагнитного пинцета” (Design of the new electro-magnetic tweezers);
[Омельянчик А.](#), Родионова В., Левада Е., Бессалова В., Перов Н.;
В книге: Магнитные наноматериалы в биомедицине: получение, свойства, применение. сборник тезисов II Международной Научно-практической школы-конференции. НИТУ "МИСиС", РХТУ им. Д.И. Менделеева, Химический факультет МГУ им. М.В. Ломоносова. 2017. С. 143-144.
- 2) “Эволюция магнитных свойств при переходе от наночастиц Mn_3O_4/MnO со структурой ядро/ оболочка к полым наночастицам Mn_3O_4 ” (Evolution of magnetic properties in the transition from Mn_3O_4/MnO nanoparticles with core/shell structure to hollow Mn_3O_4 nanoparticles);
[Омельянчик А.](#), Родионова В., Синг Г., Мак-Донах Б., Фиорани Д., Педдис Д., Лаурети С.;
В книге: Магнитные наноматериалы в биомедицине: получение, свойства, применение. сборник тезисов II Международной Научно-практической школы-конференции. НИТУ "МИСиС", РХТУ им. Д.И. Менделеева, Химический факультет МГУ им. М.В. Ломоносова. 2017. С. 48-49.
- 3) “Синтез и аттестация магнитных наночастиц состава магнетит-золото со структурой «гантель»” (Synthesis and characterization of magnetic nanoparticles of magnetite-gold composition with dumbbell structure);
Козенкова Е.И., Наленч Ю.А., [Омельянчик А.С.](#);
В сборнике: Дни науки. материалы межвузовской научно-технической конференции студентов и курсантов на базе ФГБОУ ВО «Калининградский государственный технический университет». 2019. С. 376-379.
- 4) “Супергидровобные покрытия на основе наночастиц магнетита и оболочки из оксида кремния” (Superhydrous coatings based on magnetite nanoparticles and silicon oxide shell);
Смирнов И.Г., Козенков И.И., Наленч Ю.А., [Омельянчик А.С.](#);
В сборнике: Дни науки. материалы межвузовской научно-технической конференции студентов и курсантов на базе ФГБОУ ВО «Калининградский государственный технический университет». 2019. С. 382-386.
- 5) “Синтез и характеристика биосовместимых многослойных наночастиц структуры «ядро-оболочка»” (The synthesis and characterization of biocompatible multilayer nanoparticles of the core-shell structure);
Смирнов И.Г., Козенков И.И., Наленч Ю.А., [Омельянчик А.С.](#);
В сборнике: Дни науки. материалы межвузовской научно-технической конференции студентов и курсантов на базе ФГБОУ ВО «Калининградский государственный технический университет». 2019. С. 382-386.

университет». 2019. С. 397-400.

- б) “Особенности влияния магнитных полей постоянных магнитов, наличия наночастиц и ферромагнитных микропроводов на жизнеспособность мононуклеарных клеток периферической крови человека и т-лимфобластов клеточной линии jurkat” (Features of the effect of magnetic fields of permanent magnets, nanoparticles and ferromagnetic microwires on the viability of human peripheral blood mononuclear cells and t-lymphoblasts of the Jurkat cell line);
Пшеничников С.Е., Шунькин Е.О., Малащенко В.В., Газатова Н.Д., Колесникова В.Г., Омельянчик А.С., Литвинова Л.С., Родионова В.В., Левада Е.В.;
В сборнике: Сборник научных трудов VI съезда биофизиков России. 2019. с. 70.

Publications

2024

-
1. Chemical engineering of cationic distribution in spinel ferrites nanoparticles: the effect on the magnetic properties;
M. Baricic, P. Maltoni, G. Barucca, N. Yaacoub, [A. Omelyanchik](#), F. Canepa, R. Mathieu, D. Peddis;
Phys. Chem. Chem. Phys.;
DOI: [10.1039/D3CP06029B](https://doi.org/10.1039/D3CP06029B)
WoS: IF= 3.3; Q2;
Scopus: Q1 2021

2023

-
2. Iron oxide nanoparticle-assisted delamination of $Ti_3C_2T_x$ MXenes: a new approach to produce magnetic MXene-based composites;
K. Sobolev, [A. Omelyanchik](#), N. Shilov, M. Gorshenkov, N. Andreev, A. Comite, S. Slimani, D. Peddis, Y. Ovchenkov, A. Vasiliev, K. E. Magomedov and V. Rodionova;
Nanomaterials;
DOI: [10.3390/nano14010097](https://doi.org/10.3390/nano14010097)
WoS: IF= 5.3; Q1;
Scopus: Q1 2021

Notes: Invited paper, waver fee.

-
3. Enhancing wettability and adhesive properties of PVDF-based substrates through non-thermal helium plasma surface modification;
V. Antipova, [A. Omelyanchik*](#), K. Sobolev, S. Pshenichnikov, S. Vorontsov, E. Korepanova, D. Schitz, D. Peddis, L. Panina, K. Levada, V. Rodionova;
Polymer;
DOI: [10.1016/j.polymer.2023.126567](https://doi.org/10.1016/j.polymer.2023.126567)
WoS: IF= 4.6; Q1;
Scopus: Q1 2022

-
4. Effect of PEG nanoparticle surface coating on the magnetic and structural properties of $CoFe_2O_4/PVDF$ composites;
V.D. Salnikov, S.E. Aga-Tagieva, V.G. Kolesnikova, A.O. Tovpinets, [A.S. Omelyanchik](#), V.V. Rodionova
Journal of Magnetism and Magnetic Materials;
DOI: [10.1016/j.jmmm.2023.171498](https://doi.org/10.1016/j.jmmm.2023.171498)
WoS: IF= 2.7; Q3;
Scopus: Q2 2022

-
5. The do-it-yourself approach of developing a magnetic field mapping setup using 3D printer;
[A. Omelyanchik*](#), J.L. Marqués, M. Rivas, V. Rodionova, F. Canepa and D. Peddis;
Measurement Science and Technology;
DOI: [10.1088/1361-6501/acde9b](https://doi.org/10.1088/1361-6501/acde9b)
WoS: IF= 2.398; Q2;
Scopus: Q2 2022

-
6. 10-year stability of magnetite nanopowder prepared by the exploding wire method: is it a useful feature for environment safety and biomedical applications?;
I.A.Khlusov, [A.S. Omelyanchik*](#), V.V. Rodionova, V.V. Shupletsova, O.G. Khaziakhmatova, K.A. Yurova, L.S. Litvinova, I.K. Norkin;
Bulletin of Siberian Medicine;
DOI: [10.20538/1682-0363-2023-1-96-102](https://doi.org/10.20538/1682-0363-2023-1-96-102)
WoS: -
Scopus: Q4 2022

-
7. Modification of the Codeposition Method for the Synthesis of Iron-Oxide Nanoparticles with a High Magnetization Value and a Controlled Reaction Yield;
[A.S. Omelyanchik*](#), K.V. Sobolev, N.R. Shilov, N.V. Andreev, M.V. Gorshenkov, V.V. Rodionova;
Nanobiotechnology Reports;
DOI: [10.1134/S2635167623600645](https://doi.org/10.1134/S2635167623600645)
WoS: IF = 0.6;
Scopus: Q4 2021
-

-
8. PEGylated Iron-Oxide Nanoparticles: Structural, Magnetic, and Sorption Properties; S.E. Aga-Tagieva, [A.S. Omelyanchik*](#), K.E. Magomedov, A.V. Motorzhina, F.F. Orudzhev, V.V. Rodionova, E.V. Levada; *Nanobiotechnology Reports*; DOI: [10.1134/S2635167623600633](https://doi.org/10.1134/S2635167623600633) WoS: IF = 0.6; Scopus: Q4 2021
-
9. SDS-Modified Iron Oxide Magnetic Nanoparticles for Removing of Methylene Blue from Aqueous Solution; K. E. Magomedov, [A. S. Omelyanchik](#), S. A. Vorontsov, E. Čižmár, V. V. Rodionova, E. V. Levada; *Bulletin of the Russian Academy of Sciences: Physics*; DOI: [10.3103/S1062873823702027](https://doi.org/10.3103/S1062873823702027) WoS: - Scopus: Q3 2022
-
- ## 2022
-
10. 3D printing of PLA/magnetic-ferrite composites: filler particles effect on magnetic properties of filament; A. Amirov, [A. Omelyanchik](#), D. Murzin, V. Kolesnikova, S. Vorontsov, I. Musov, Kh. Musov, S. Khashirova, V. Rodionova; *Processes*; DOI: [10.3390/pr10112412](https://doi.org/10.3390/pr10112412) WoS: IF= 3.352; Q2; Scopus: Q2 2021
- Notes: This article belongs to the Special Issue "[Advances in Innovative Engineering Materials and Processes \(III\)](#)". Academic Editors: Prof. Tizazu Mekonnen (waver fee).
-
11. Effect of piezoelectric BaTiO₃ filler on mechanical and magnetoelectric properties of Zn_{0.25}Co_{0.75}Fe₂O₄/PVDF-TrFE composites; K. Sobolev, V. Kolesnikova, [A. Omelyanchik](#), Y. Alekhina, V. Antipova, L. Makarova, D. Peddis, Y.L. Raikher, K. Levada, A. Amirov, V. Rodionova; *Polymers*; DOI: [10.3390/polym14224807](https://doi.org/10.3390/polym14224807) WoS: IF= 4.967; Q1; Scopus: Q1 2021
- Notes: This article belongs to the Special Issue "[Polymer Nanocomposites and Their Applications in Device and Construction](#)". Academic Editors: Dr. Vladimir Kolesov, Dr. Hanxun Qiu and Dr. Anatoly Reshetilov (Invited paper, waver fee).
-
12. Iron oxide nanoparticles synthesized by a glycine-modified coprecipitation method: Structure and magnetic properties; [A. Omelyanchik*](#), A.S. Kamzin, A.A. Valiullin, V.G. Semenov, S.N. Vereshchagin, M. Volochaev, A. Dubrovskiy, T. Sviridova, I. Kozenkov, E. Dolan, D. Peddis, A. Sokolov, V. Rodionova; *Colloids and Surfaces A: Physicochemical and Engineering Aspects*; DOI: [10.1016/j.colsurfa.2022.129090](https://doi.org/10.1016/j.colsurfa.2022.129090) WoS: IF=5.518; Q2; Scopus: Q2 2021
-
13. Star-Shaped Magnetic-Plasmonic Au@Fe₃O₄ Nano-Heterostructures for Photothermal Therapy; B. Muzzi, M. Albino, A. Gabbani, [A. Omelyanchik](#), E. Kozenkova, M. Petrecca, C. Innocenti, E. Balica, A. Lavacchi, F. Scavone, C. Anceschi, G. Petrucci, A. Ibarra, A. Laurenzana, F. Pineider, V. Rodionova, C. Sangregorio; *ACS Applied Materials & Interfaces*; DOI: [10.1021/acsami.2c04865](https://doi.org/10.1021/acsami.2c04865) WoS: IF=10.383; Q1; Scopus: Q1 2021
-
14. Magnetoactive elastomers based on ferromagnetic and ferroelectric particles: a FORC approach; WoS: IF=3.097; Q3;
-

V.G. Kolesnikova, L.A. Makarova, [A.S. Omelyanchik](#), K.V. Sobolev, D.A. Isaev,
Iu.A. Alekhina, A.S. Komlev, V.V. Rodionova, N.S. Perov;
Journal of Magnetism and Magnetic Materials;
DOI: [10.1016/j.jmmm.2022.169506](https://doi.org/10.1016/j.jmmm.2022.169506)

Scopus: Q2
2021

15. High-Moment FeCo Magnetic Nanoparticles Obtained by Topochemical H₂ Reduction of Co-Ferrites;

[A. Omelyanchik](#)*, G. Varvaro, P. Maltoni, V. Rodionova, J.-P.M. Murillo, F. Locardi,
M. Ferretti, C. Sangregorio, F. Canepa, P. Chernavsky, N. Perov, D. Peddis;
Applied Sciences;
DOI: [10.3390/app12041899](https://doi.org/10.3390/app12041899)

WoS:
IF=2.838; Q2;

Scopus: Q2
2021

Notes: This article belongs to the Special Issue "Advances in Magnetic Nanomaterials and Nanostructures".
Academic Editors: Dr. Francesco Congiu and Dr. Giorgio Concas (Invited paper, waver fee).

16. Spatial Manipulation of Particles and Cells at Micro-and Nanoscale via Magnetic Forces;

L.V. Panina, A. Gurevich, A. Beklemisheva, [A. Omelyanchik](#), K. Levada, V. Rodionova;
Cells;
DOI: [10.3390/cells11060950](https://doi.org/10.3390/cells11060950)

WoS:
IF=7.666; Q2;

Scopus: Q1
2021

Notes: This article belongs to the Special Issue "Cellular and Molecular Mechanisms Underlying the Pathogenesis of Hepatic Fibrosis". Academic Editor: Prof. Dr. Ralf Weiskirchen (Invited paper, waver fee).

17. Synthesis of magnetic nanoparticles by laser ablation of strontium ferrite under water and their characterization by optically detected magnetophoresis supported by BEM calculations;

V. Piotta, L. Litti, [A. Omelyanchik](#), A. Martucci, P. Riello, D. Peddis, M. Meneghetti;
Journal of Materials Chemistry C;
DOI: [10.1039/D1TC04796E](https://doi.org/10.1039/D1TC04796E)

WoS:
IF=8.067; Q1;

Scopus: Q1
2021

2021

18. Multiferroic Coupling of Ferromagnetic and Ferroelectric Particles through Elastic Polymers;

L.A. Makarova, D.A. Isaev, [A.S. Omelyanchik](#), I.A. Alekhina, M.B. Isaenko,
V.V. Rodionova, Y.L. Raikher, N.S. Perov;
Polymers;
DOI: [10.3390/polym14010153](https://doi.org/10.3390/polym14010153)

WoS:
IF= 4.967; Q1;

Scopus: Q1
2021

Notes: This article belongs to the Special Issue "[Magnetic Polymer Composites: Design and Application](#)".
Academic Editors: Prof. Dr. Elena Kramarenko.

19. Innovative gold/cobalt ferrite nanocomposite: physicochemical and cytotoxicity properties;

A. Motorzhina, S. Jovanović, V.K. Belyaev, D. Murzin, S. Pshenichnikov,
V.G. Kolesnikova, [A.S. Omelyanchik](#), L. Gazvoda, M. Spreitzer, L. Panina, V. Rodionova,
M. Vukomanović, K. Levada;
Processes;
DOI: [10.3390/pr9122264](https://doi.org/10.3390/pr9122264)

WoS:
IF=3.352; Q2;

Scopus: Q2
2021

Notes: This article belongs to the Special Issue "[Advances in Innovative Engineering Materials and Processes \(II\)](#)". Academic Editors: Prof. Dr. Sergei Alexandrov, Prof. Dr. Valentina Zhukova, Prof. Dr. Arcady Zhukov, Dr. Valeria Rodionova (Invited paper, waver fee).

-
20. Interplay between inter- and intraparticle interactions in bi-magnetic core/shell nanoparticles;
A. Omelyanchik, S. Villa, M. Vasilakaki, G. Singh, A.M. Ferretti, A. Ponti, F. Canepa, G. Margaris, K. Trohidou, D. Peddis;
Nanoscale Advances;
 DOI: [10.1039/D1NA00312G](https://doi.org/10.1039/D1NA00312G)
- WoS:
 IF=5.598; Q2;
 Scopus: Q1
 2021
-
21. Magnetic properties of bi-magnetic core/shell nanoparticles: the case of thin shells;
A. Omelyanchik*, S. Villa, G. Singh, V. Rodionova, S. Laureti, F. Canepa, D. Peddis;
Magnetochemistry;
 DOI: [10.3390/magnetochemistry7110146](https://doi.org/10.3390/magnetochemistry7110146)
- WoS:
 IF=3.336; Q2;
 Scopus: Q2
 2021
- Notes: This article belongs to the Special Issue "[Advances in Magnetic Hysteresis—In Memory of Prof. Dr. Sergey Borisovich Leble](#)". Academic Editor: Dr. Christina Gritsenko (Invited paper, waver fee).
-
22. Effect of citric acid on the morpho-structural and magnetic properties of ultrasmall iron oxide nanoparticles;
A. Omelyanchik*, F.G. da Silva, G. Gomide, I. Kozenkov, J. Depeyrot, R. Aquino, A.F.C. Campos, D. Fiorani, D. Peddis, V. Rodionova, S. Jovanović;
Journal of Alloys and Compounds;
 DOI: [10.1016/j.jallcom.2021.160779](https://doi.org/10.1016/j.jallcom.2021.160779)
- WoS:
 IF=6.371; Q1;
 Scopus: Q1
 2021
-
23. Boosting Magnetoelectric Effect in Polymer-Based Nanocomposites;
A. Omelyanchik, V. Antipova, C. Gritsenko, V. Kolesnikova, D. Murzin, Y. Han, A. V. Turutin, I. V. Kubasov, A. M. Kislyuk, T. S. Ilina, D. A. Kiselev, M. I. Voronova, M. D. Malinkovich, Y. N. Parkhomenko, M. Silibin, E. N. Kozlova, D. Peddis, K. Levada, L. Makarova, A. Amirov, and V. Rodionova;
Nanomaterials;
 DOI: [10.3390/nano11051154](https://doi.org/10.3390/nano11051154)
- WoS:
 IF=5.719; Q1;
 Scopus: Q1
 2021
- Notes: This article belongs to the Special Issue "[Applications and Properties of Magnetic Nanoparticles](#)". Academic Editor: Dr. Paolo Arosio (Invited paper, waver fee).
-
- ## 2020
-
24. Optimization of a NdFeB permanent magnet configuration for in-vivo drug delivery experiments;
A. Omelyanchik, G. Lamura, D. Peddis, F. Canepa;
Journal of Magnetism and Magnetic Materials;
 DOI: [10.1016/j.jmmm.2020.167491](https://doi.org/10.1016/j.jmmm.2020.167491)
- WoS:
 IF=2.993; Q2;
 Scopus: Q2
 2020
-
25. Green synthesis of Co-Zn spinel ferrite nanoparticles: magnetic and intrinsic antimicrobial properties;
A. Omelyanchik, K. Levada, S. Pshenichnikov, M. Abdolrahim, M. Baricic, A. Kapitunova, A. Galieva, S. Sukhikh, L. Astakhova, S. Antipov, B. Fabiano, D. Peddis, V. Rodionova;
Materials;
 DOI: [10.3390/ma13215014](https://doi.org/10.3390/ma13215014)
- WoS:
 IF=3.623; Q1;
 Scopus: Q2
 2020
- Notes: This article belongs to the Special Issue "[Green and Eco-Friendly Nanotechnology](#)". Academic Editors: Prof. Andrea P. Reverberi and Prof. Marco Salerno (Invited paper, waver fee).
-
26. Control of oxidative stress in Jurkat cells as a model of leukemia treatment;
 S. Pshenichnikov, A. Omelyanchik, M. Efremova, M. Lunova, N. Gazatova, V. Malashchenko, O. Khaziakhmatova, L. Litvinova, N. Perov, L. Panina, D. Peddis, O.
- WoS:
 IF=2.993; Q2;
 Scopus: Q2
-

-
- Lunov, V. Rodionova, K. Levada; 2020
Journal of Magnetism and Magnetic Materials;
 DOI: [10.1016/j.jmmm.2020.167623](https://doi.org/10.1016/j.jmmm.2020.167623)
-
27. Magnetocrystalline and surface anisotropy in CoFe₂O₄ nanoparticles;
 A. Omelyanchik, M. Salvador, F. D'Orazio, V. Mameli, C. Cannas, D. Fiorani, A. Musinu, M. Rivas, V. Rodionova, G. Varvaro, D. Peddis; 2020
Nanomaterials;
 DOI: [10.3390/nano10071288](https://doi.org/10.3390/nano10071288)
 WoS: IF=5.076; Q1;
 Scopus: Q1 2020
- Notes: This article belongs to the Special Issue "[Applications and Properties of Magnetic Nanoparticles](#)".
 Academic Editor: Dr. Paolo Arosio (Invited paper, waver fee).
-
28. Multifunctional Fe₃O₄-Au Nanoparticles for the MRI Diagnosis and Potential Treatment of Liver Cancer
 E. Kozenkova, K. Levada, M.V. Efremova, A. Omelyanchik, Y.A. Nalench, A.S. Garanina, S. Pshenichnikov, D.G. Zhukov, O. Lunov, M. Lunova, I. Kozenkov, C. Innocenti, M. Albino, M.A. Abakumov, C. Sangregorio, V. Rodionova; 2020
Nanomaterials;
 DOI: [10.3390/nano10091646](https://doi.org/10.3390/nano10091646)
 WoS: IF=5.076; Q1;
 Scopus: Q1 2020
- Notes: This article belongs to the Section "[Synthesis, Interfaces and Nanostructures](#)" (Invited paper, waver fee).
-
29. Ferromagnetic glass-coated microwires for cell manipulation;
 A. Omelyanchik*, A. Gurevich, S. Pshenichnikov, V. Kolesnikova, B. Smolkova, M. Uzhytchak, I. Baraban, O. Lunov, K. Levada, L. Panina, V. Rodionova 2020
Journal of Magnetism and Magnetic Materials;
 DOI: [10.1016/j.jmmm.2020.166991](https://doi.org/10.1016/j.jmmm.2020.166991)
 WoS: IF=2.993; Q2;
 Scopus: Q2 2020
-
30. Progressive lysosomal membrane permeabilization induced by iron oxide nanoparticles drives hepatic cell autophagy and apoptosis;
 K. Levada, S. Pshenichnikov, A. Omelyanchik, V. Rodionova, A. Nikitin, A. Savchenko, I. Schetinina, D. Zhukov, M. Abakumov, A. Majouga, M. Lunova, M. Jirsa, B. Smolková, M. Uzhytchak, A. Dejneka, O. Lunov; 2020
Nano Convergence;
 DOI: [10.1186/s40580-020-00228-5](https://doi.org/10.1186/s40580-020-00228-5)
 WoS: IF=8.526; Q1;
 Scopus: Q1 2020
-
31. Ultrasensitive magnetic field sensors for biomedical applications;
 D. Murzin, E. Levada, V. Belyaev, A. Omelyanchik, L. Panina, V. Rodionova; 2020
Sensors;
 DOI: [10.3390/s20061569](https://doi.org/10.3390/s20061569)
 WoS: IF=3.576; Q1;
 Scopus: Q2 2020
- Notes: This article belongs to the Special Issue "[Magnetic Sensing Technology, Materials and Applications](#)".
 Academic Editors: Prof. Valentina Zhukova and Prof. Arcady Zhukov (Invited paper, waver fee).
-
32. Hard magnetic properties of Co-rich microwires crystallized by current annealing
 S.A. Evstigneeva, M.G. Nagmatov, A. Omelyanchik, N.A. Yudanov, V.V. Rodionova, L.V. Panina 2020
IEEE Magnetism Letters;
 DOI: [10.1109/LMAG.2020.2974152](https://doi.org/10.1109/LMAG.2020.2974152)
 WoS: IF=1.549; Q3;
 Scopus: Q2 2020
-
- 2019**
-
33. Magnetic-Assisted Treatment of Liver Fibrosis;
 K. Levada, A. Omelyanchik, V. Rodionova, R. Weiskirchen, M. Bartneck; 2019
 WoS: IF=6.600; Q2;
-

Cells;

Scopus: Q1)

DOI: [10.3390/CELLS8101279](https://doi.org/10.3390/CELLS8101279)

Notes: This article belongs to the Special Issue "[Cellular and Molecular Mechanisms Underlying the Pathogenesis of Hepatic Fibrosis](#)". Academic Editor: Prof. Dr. Ralf Weiskirchen (Invited paper, waver fee).

34. Magnetic Interactions Versus Magnetic Anisotropy in Spinel Ferrite Nanoparticles; G. Muscas, M. Cobianchi, A. Lascialfari, C. Cannas, A. Musinu, [A. Omelyanchik](#), V. Rodionova, D. Fiorani, V. Mameli and D. Peddis; *IEEE Magnetics Letters*; DOI: [10.1109/LMAG.2019.2956908](https://doi.org/10.1109/LMAG.2019.2956908) (WoS: Q3; IF=1.549; Scopus: Q2)
-

35. High-quality α -Fe nanoparticles synthesized by the electric explosion of wires; [A. Omelyanchik*](#), G. Varvaro, M. Gorshenkov, I. Beketov, V. Rodionova; *Journal of Magnetism and Magnetic Materials*; DOI: [10.1016/j.jmmm.2019.04.001](https://doi.org/10.1016/j.jmmm.2019.04.001) (WoS: Q2; IF=2.993; Scopus: Q2)
-

36. Magnetorheological foams for multiferroic applications; L.A. Makarova, Yu.A. Alekhina, [A.S. Omelyanchik](#), D. Peddis, V.V.Spiridonov, V.V. Rodionova, N.S. Perov; *Journal of Magnetism and Magnetic Materials*; DOI: [10.1016/j.jmmm.2019.04.001](https://doi.org/10.1016/j.jmmm.2019.04.001) (WoS: Q2; IF=2.993; Scopus: Q2)
-

37. Magnetic and optical properties of gold-coated iron oxide nanoparticles; [A. Omelyanchik](#), M. Efremova, N. Myslitskaya, A. Zubin, B.J. Carey, J. Sickel, H. Kohl, R. Bratschitsch, M. Abakumov, A. Majouga, I. Samusev, V. Rodionova; *Journal of Nanoscience and Nanotechnology*; DOI: [10.1166/jnn.2019.16797](https://doi.org/10.1166/jnn.2019.16797) (WoS: IF=1.134; Scopus: Q4)
-

2018

38. Inhomogeneous magnetic field influence on magnetic properties of NiFe/IrMn thin film structures; K. Gritsenko, [A. Omelyanchik](#), A. Berg, I. Dzhun, N. Chechenin, O. Dikaya, O.A. Tretiakov, V. Rodionova; *Journal of Magnetism and Magnetic Materials*; DOI: [10.1016/j.jmmm.2018.10.013](https://doi.org/10.1016/j.jmmm.2018.10.013) (WoS: Q2; IF=2.993; Scopus: Q2)
-

39. Tunable magnetic properties of Ni-doped CoFe₂O₄ nanoparticles prepared by the sol-gel citrate self-combustion method; [A. Omelyanchik*](#), G. Singh, M. Volochaev, A. Sokolov, V. Rodionova, D. Peddis; *Journal of Magnetism and Magnetic Materials*; DOI: [10.1016/j.jmmm.2018.12.064](https://doi.org/10.1016/j.jmmm.2018.12.064) (WoS: Q2; IF=2.993; Scopus: Q2)
-

40. Design of conductive microwire systems for manipulation of biological cells; [A. Omelyanchik](#), E. Levada, J. Ding, S. Lendinez, J. Pearson, M. Efremova, V. Bessalova, D. Karpenkov, E. Semenova, I.Khlusov, L. Litvinova, M. Abakumov, A. Majouga, N. Perov, V. Novosad, V. Rodionova; *IEEE Transactions on Magnetics – Conferences 2018*; DOI: [10.1109/TMAG.2018.2819823](https://doi.org/10.1109/TMAG.2018.2819823) (WoS: Q3; IF=1.700; Scopus: Q2)
-

2017

-
41. Elastic coupled ferromagnetic and ferroelectric micro-particles: new multiferroic materials based on polymer, NdFeB and PZT particles;
L. Makarova, Y. Alekhina, A. Omelyanchik, V. Rodionova, O. Malyshkina, N. Perov;
Journal of Magnetism and Magnetic Materials;
DOI: [10.1016/j.jmmm.2017.11.121](https://doi.org/10.1016/j.jmmm.2017.11.121) (WoS: Q2;
IF=2.993;
Scopus: Q2)
-
42. Granulocyte-macrophage progenitor cells response to magnetite nanoparticles in a static magnetic field;
I. A. Khlusov, A.S. Omelyanchik, V.V. Rodionova, O.E. Saveleva, T.A. Fedushchak, L.S. Litvinova, M.Yu. Khlusova, G.B. Slepchenko;
Journal of Magnetism and Magnetic Materials;
DOI: [10.1016/j.jmmm.2017.12.017](https://doi.org/10.1016/j.jmmm.2017.12.017) (WoS: Q2;
IF=2.993;
Scopus: Q2)
-
43. From Mn₃O₄/MnO Core-Shell Nanoparticles to Hollow Mn₃O₄: Evolution of Magnetic Properties;
A. Omelyanchik, G. Singh, B. McDonagh, V. Rodionova, D. Fiorani, D. Peddis, S. Laureti;
Nanotechnology;
DOI: [10.1088/1361-6528/aa9e59](https://doi.org/10.1088/1361-6528/aa9e59) (WoS: Q2;
IF=3.874;
Scopus: Q1)
-
44. The New Multiferroic Composite Materials Consisting of Ferromagnetic, Ferroelectric and Polymer Components;
L.A. Makarova, V.V. Rodionova, Y.A. Alekhina, T.S. Rusakova, A.S. Omelyanchik, N.S. Perov;
IEEE Transactions on Magnetism;
DOI: [10.1109/TMAG.2017.2699740](https://doi.org/10.1109/TMAG.2017.2699740) (WoS: Q3;
IF=1.700;
Scopus: Q2)

Book chapter

Ferroic Transition Metal Oxide Nano-heterostructures: From Fundamentals to Applications;
G. Varvaro, A. Omelyanchik, D. Peddis
in "Tailored Functional Oxide Nanomaterials: From Design to Multi-Purpose Application"
edited by Chiara Maccato and Davide Barreca
Publisher: *Wiley*, 2022
ISBN: 3527347593, 9783527347599
DOI: [10.1002/9783527826940.ch12](https://doi.org/10.1002/9783527826940.ch12)