



1-4 March 2023

Yeravan, Armenia

<http://apricot.ipr.am>



PROGRAM

1st International Conference

APRICOT 2023

**“Magnetic nanomaterials in biomedicine:
synthesis and functionalization”**



Wednesday, 01.03.2023

Time	
09:00 10:00	<i>Registration</i>
10:00	Opening ceremony /Welcome Speech
10:30	Prof. Aram Papoyan (<i>Director, Institute for Physical Research of National Academy of Sciences of Armenia</i>) Dr. Aram Manukyan Presentation of the MaNaCa project
Magnetic nanocomposites for cancer therapy Chairman: Dr. Aram Manukyan	
10:30 11:00	Invited talk Dr. Tapas Sen Magnetic and Magneto-optical Nanocomposites for the Benefit of Health
11:00 11:30	Invited talk Ms. Karen Bediryan The Rising Cost of Novel Therapies: Implications for Economically Challenged Populations
11.30 11.50	Dr. Gohar Tsakanova Schiff Base Copper Compounds as Radioenhancer Agents
11:50 12:20	Coffee break ☕
Chairman: Prof. Michael Farle	
12:20 13:20	Plenary talk Prof. Shivaji Pawar Applications of Magnetic Nanoparticles in Hyperthermia Therapy: a Painless Curing of Cancer
13:20 13:50	Invited talk (online) Prof. Ulrich Hofmann MPI and MFH: A Theranostic Pair not Quite Made in Heaven
13:50 14:10	Prof. Oksana Koplak Magnetic Field Stimulation of the Distribution of CoFe ₂ O ₄ Nanoparticles in Macroobjects and Living Cells
14:10 14:40	Invited talk Prof. Samvel Gevorgyan / Dr. Aleksandr Khachunts A Single-layer Flat-Coil-Oscillator-based technology as a highly sensitive promising detector for state-of-the-art applications in different fields of science
14:40 16:00	Lunch 🍽️
Magnetic nanoparticles for bio-applications Chairman: Prof. Ulf Wiedwald	
16:00 16:30	Invited talk Dr. Katerina Levada Composites of Gold and CFO-Nanoparticles as an Instrument for Photothermal Therapy
16:30 17:00	Invited talk (online) Prof. Paola Tiberto Magnetic Nanomaterials in Biomedicine: Synthesis and Functionalization

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17:00 17:30	Invited talk Dr. Marina Spasova Anisotropic Magnetic Nanoparticles for Bio-medical Applications
17:30 18:00	Invited talk Prof. Maxim Abakumov Magnetic Nanoparticles in Biomedicine: Current Applications and Future Perspectives

Thursday, 02.03.2023

Time	Synthesis, characterization, and properties of magnetic nanomaterials Chairman: Prof. Karen Martirosyan
09:00 10:00	Plenary talk Prof. Alexander Mukasyan Combustion Synthesis of Advanced Materials
10:00 10:30	Invited talk Prof. María del Puerto Morales Microwave-Assisted Synthesis of Uniform Magnetic Nanoparticles
10:30 11:00	Invited talk Prof. Aleksandr Kamzin Nanocomposites and Nanostructures for Biomedicine: Structure and Properties
11:00 11:20	Dr. Antonios Makridis 3D Magnetic Printing: From Filament Fabrication to Hyperthermia Scaffolds
11:20 11:50	Coffee break ☕
Chairman: Prof. Alexander Mukasyan	
11:50 12:10	Dr. Narek Sisakyan Magnetic Heating Investigation of Iron-Cementite Nanoparticles in Carbon Matrix
12:10 12:30	Dr. Ashkhen Hovhannisyan Biomedical Applications of Magnetic Nanoparticles
12:30 13:00	Invited talk Dr. Alexander Omelyanchik Scaling Down of the co-precipitation Synthesis to Tune Magnetic Properties of MXene-Based Nanocomposites
13:00 13:20	Dr. Anton Anikin Photothermal Conversion Efficiency of Composites of Gold and CFO-Nanoparticles
13:20 13:40	Dr. Mariia Efremova (online) Disk-shaped Nano- and Microstructures: a Tool for Cancer Therapy
13:40 14:00	Mr. Harutyun Gyulasaryan Magnetic and Hyperthermia Properties of Carbon Coated Fe-Fe ₃ C Nanoparticles Synthesized by Ferrocene Compound
14:00 15:20	Lunch 🍽️

Interaction of magnetic nanoparticles with electromagnetic waves Chairman: Prof. Makis Angelakeris	
15:20 16:20	Plenary talk Prof. Karen Martirosyan Recent Progress in the Development of Nanotheranostics for Cancer Diagnosis and Therapy
16:20 16:50	Invited talk Dr. David Serantes Interplay Between the Intrinsic Features of Magnetic Nanoparticles and their Assembly on the Heating Performance under AC Fields
16:50 17:20	Invited talk Prof. Davide Peddis Design of Magnetic Nanoarchitecture for Theranostic
17:20 17:40	Prof. Roman Morgunov Effect of CoFe ₂ O ₄ Nanoparticles on Ionic Permeability of Phosphatidylcholine Membranes
17:40 18:00	Dr. Anna Espinosa Nanothermometry of Magnetic and Photoactivated Nanoparticles for Hyperthermia Therapies Using X-rays

Friday, 03.03.2023

Time	Interaction of magnetic nanoparticles with electromagnetic waves Chairman: Prof. Davide Peddis
09:00 10:00	Plenary talk Prof. Makis Angelakeris Tuning Nanomagnetism for Biomedical Applications
10:00 10:20	Dr. Alexey Sokolov Biofunctionalized Magnetic Nanodiscs Applied in Medicine
	Advanced Methods for characterization of nanomaterials Chairman: Dr. Marina Spasova
10:20 10:50	Invited talk Prof. Michael Farle Ferromagnetic Resonance: a Versatile Tool to Determine Magnetic Properties
10:50 11:20	Invited talk Dr. Leon Avakyan Experimental and Theoretical Study of Magnetic Carbon Nano- and Microspheres
11:20 11:50	Invited talk Prof. Aleksandr Kamzin Nanocomposites and Functionalized Nanostructures for Biomedicine: Mössbauer Studies
11:50 12:20	Invited talk (online) Dr. Anna Elsukova Shedding the Light on the Properties of the Nanomaterials with Scanning and Transmission Electron Microscopy
12:20 12:50	Coffee break ☕

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12:50 13:10	Prof. Alexey Ivanov Mathematical and Computer Modelling of the Effects of Interactions, Structure Formation and Polydispersity on the Dynamic Susceptibility and Magnetic Relaxation of Ferrofluids																		
13:10 13:40	Invited talk Prof. Ulf Wiedwald Magnetic Hyperthermia and Magnetometry: What to Learn and How to Correlate Them																		
13:40 14:10	Invited talk Dr. Tapas Sen Career Prospect in Nanotechnology: Applications in Food, Water, Pharmaceutical and Medical Sectors																		
14:10 14:30	Coffee break ☕																		
Poster Session																			
14:30 15:50	<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="text-align: center; vertical-align: middle;">1</td> <td><u>G.V. Ananyan</u>, Ts.M. Jomardyan, V.B. Arakelyan Influence of Metal Oxide Nanoparticles in the Stability and Conductivity of BLM</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">2</td> <td><u>Z. Grigoreva</u> , Ch. Gritsenko , E. Levada, M. Efremova, V. Rodionova Development of a Diagnostic Method for Crohn's Disease Using Ferromagnetic Nanoparticles Fe₃O₄-Au</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">3</td> <td><u>N. H. Karapetyan</u>, G. V. Ananyan, R. S.Ghazaryan, T. M.Jomardyan, V. G. Barkhudaryan, V. Kalantaryan Effect of Nanoparticles on Erythrocyte Membranes at Irradiation</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">4</td> <td><u>K. Kazeli</u>, A. Makridis, L. Malletzidou, E. Kontonasaki, E. Lymperaki, M. Angelakeris Synthesis and Characterization of a Novel Multifunctional Magnetic Bioceramic Nanocomposite</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">5</td> <td><u>V.G. Kolesnikova</u>, A.S. Omelyanchik, V.D. Salnikov, S. Aga-Tagieva, S.A. Voroncov, V. V. Rodionova FORC -Analysis as a Powerful Tool for Investigation of Magnetic Behaviour in Magnetoactive Nanocomposites</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">6</td> <td><u>V. V. Krasitskaya</u>, A. N. Kudryavtsev, R. N. Yaroslavtsev, D. A. Velikanov, O. A. Bayukov, Y. V. Gerasimova, S. V. Stolyar, L. A. Frank Magnetic Affine Sorbent Based on Starch-Coated Iron Oxide Nanoparticles for Isolation of Recombinant Proteins</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">7</td> <td><u>S. V. Stolyar</u>, <u>O. A. Li</u>, E. D. Nikolaeva, A. M. Vorotynov, D. A. Velikanov, R. S. Iskhakov, V. F. Pyankov, V. P. Ladygina Heating of Magnetic Ferrihydrite Powders in the FMR Mode</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">8</td> <td><u>Y. Melikyan</u>, H. Gharagulyan, V. Hayrapetyan, A. Simonyan, A. Khachatryan, A. Vasilev, M. Yerosyan Magnetically Induced Orientation of Functionalized Graphene Oxide Liquid Crystals</td> </tr> <tr> <td style="text-align: center; vertical-align: middle;">9</td> <td><u>E. Morozova</u>, T. Smolyarova, K. Lukyanenko, A. Kichkailo, R. Ranjan,</td> </tr> </tbody> </table>	1	<u>G.V. Ananyan</u>, Ts.M. Jomardyan, V.B. Arakelyan Influence of Metal Oxide Nanoparticles in the Stability and Conductivity of BLM	2	<u>Z. Grigoreva</u> , Ch. Gritsenko , E. Levada, M. Efremova, V. Rodionova Development of a Diagnostic Method for Crohn's Disease Using Ferromagnetic Nanoparticles Fe ₃ O ₄ -Au	3	<u>N. H. Karapetyan</u>, G. V. Ananyan, R. S.Ghazaryan, T. M.Jomardyan, V. G. Barkhudaryan, V. Kalantaryan Effect of Nanoparticles on Erythrocyte Membranes at Irradiation	4	<u>K. Kazeli</u>, A. Makridis, L. Malletzidou, E. Kontonasaki, E. Lymperaki, M. Angelakeris Synthesis and Characterization of a Novel Multifunctional Magnetic Bioceramic Nanocomposite	5	<u>V.G. Kolesnikova</u>, A.S. Omelyanchik, V.D. Salnikov, S. Aga-Tagieva, S.A. Voroncov, V. V. Rodionova FORC -Analysis as a Powerful Tool for Investigation of Magnetic Behaviour in Magnetoactive Nanocomposites	6	<u>V. V. Krasitskaya</u>, A. N. Kudryavtsev, R. N. Yaroslavtsev, D. A. Velikanov, O. A. Bayukov, Y. V. Gerasimova, S. V. Stolyar, L. A. Frank Magnetic Affine Sorbent Based on Starch-Coated Iron Oxide Nanoparticles for Isolation of Recombinant Proteins	7	<u>S. V. Stolyar</u>, <u>O. A. Li</u>, E. D. Nikolaeva, A. M. Vorotynov, D. A. Velikanov, R. S. Iskhakov, V. F. Pyankov, V. P. Ladygina Heating of Magnetic Ferrihydrite Powders in the FMR Mode	8	<u>Y. Melikyan</u>, H. Gharagulyan, V. Hayrapetyan, A. Simonyan, A. Khachatryan, A. Vasilev, M. Yerosyan Magnetically Induced Orientation of Functionalized Graphene Oxide Liquid Crystals	9	<u>E. Morozova</u>, T. Smolyarova, K. Lukyanenko, A. Kichkailo, R. Ranjan,
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	V. Kratasyuk Sensitivity Enhancement of a Biosensor Based on Bioluminescence Using Gold Nanoparticles
10	<u>A. Motorzhina</u>, S. Aga-Tagieva, A. Omelyanchik, K. Magomedov, V. Rodionova, K. Levada SDS-coated Magnetic Iron Oxide Nanoparticles for Water Purification: Synthesis, Adsorption and Cytotoxicity
11	<u>E. D. Nikolaeva</u>, O. V. Krukova, O. A. Li, V. F. Pyankov, A. O. Shohrina, A. E. Skorobogatko, S. V. Stolyar Apoptosis Induced by the Action of Aptamer-Functionalized Magnetic Nanoparticles under Ferromagnetic Resonance
12	A. Amirov, <u>A. Omelyanchik</u>, D. Murzin, V. Kolesnikova, S. Vorontsov, I. Musov, Kh. Musov, S. Khashirova, V. Rodionova Magnetic Properties of 3D Printed Composites from Mesoscale Ferrite Particles and Biodegradable Poly(lactic acid) Polymer
13	<u>E. Papadopoulou</u>, N. Tetos, H. Gyulasaryan, G. Chilingaryan, A. Manukyan, M. Tsompanoglou, K. Kontou, M. Angelakeris, M. Farle, M. Spasova Single-Step Solid State-Pyrolysis of Carbon-Fe ₃ C Submicron Spheres
14	E. V. Paramonova, <u>L. A. Avakyan</u>, D. B. Tolchina, V. S. Bystrov The DFT Study of Iron-doped Hydroxyapatite
15	N. N. Tarasenko, <u>S. T. Pashayan</u>, A. V. Butsen, N. V. Tarasenko Laser Assisted Fabrication of Magnetic Nanoparticles for Biomedical Applications
16	<u>V.F. Pyankov</u>, S.V. Stolyar, E.D. Nikolaeva, O.V. Krukova Ehrlich Ascitic Carcinoma cells Viability under Influence of FMR Hyperthermia
17	<u>N.F. Shkodich</u>, V. Nallathambi, T. Smoliarova, S. Reichenberger, M. Farle From Bulk to Nano: Structure and Magnetism of nanocrystalline CoMnFeNiGa high entropy alloys
17	<u>L. G. Simonyan</u>, G. G. Karamyan, A. M. Manukyan, V. R. Sargsyan, R. Sh. Sargsyan A New Sensor for Non-invasive Assessment of the Onset of Pathological Changes in the Body
18	<u>T. Smoliarova</u>, M. Spasova, U. Wiedwald and M. Farle Au-Fe ₃ O ₄ Nanohybrids: Synthesis and Characterization
19	<u>R. N. Yaroslavtsev</u>, A. V. Tyumetseva, M. N. Volochaev, Yu. V. Gerasimova Synthesis and Properties of PEG-Coated and aminoPEG-Coated Magnetite Nanoparticles
15:50 16:00	Closing Ceremony

Saturday, 04.03.2023, 09:00 - 19:00 **Excursion**

