



14th International Conference on the Scientific and Clinical Applications of Magnetic Carriers

Monday, June 17, 2024	
18:00	Registration desk opens at the Casa de Convalecencia, Calle de St. Antoni Maria Claret, 171 - this reception is sponsored by micromod .
19:00	Opening of the conference and welcome address
19:15	Opening of the buffet
22:00	End of Reception

Tuesday, June 18, 2024				
8:30	Registration desk opens in the Faculty of Arts & Humanities auditorium [Auditorium Filosofia y Letras, UAB, Calle de la Fortuna, Bellaterra]			
9:00	Organization committee	Opening of the conference and welcome address by the organization committee	Bellaterra, Spain	Intro
9:10	Hafeli, Urs	Short review of the last 2 years of magnetic carriers research	Vancouver, BC, Canada	Talk 0
	Session 1			<i>Chair: Cordula Gruettner</i>
9:30	Zabow, Gary	Magnetic control via magnetically microprinted microparticles	Boulder, U.S.A.	Talk 1
9:45	Baumgarten, Daniel	A portable system for unshielded magnetorelaxometry imaging of magnetic nanoparticles	Hall i.T., Austria	Talk 2
10:00	Rivera-Llabres, Victor	Micropatterning of aligned pores as directional cues in granular PEG composite scaffolds using magnetic porogens	Gainesville, U.S.A.	Talk 3
10:15	Coffee break			
	Session 2: Magnetic Drug Delivery			<i>Chair: Borja Sepulveda</i>
10:45	Ma, Yunn-Hwa	Translational Assessment of Magnetic Nanotherapeutics for Target Thrombolysis	Tao-Yuan, Taiwan	Talk 4
11:00	Chorny, Michael	Nanocarriers for Dual-Targeted Therapy of In-Stent Restenosis	Philadelphia, U.S.A.	Talk 5
11:15	Garcia-Gabilondo, Miguel	Endovascular Delivery and Magnetic Retention Enhance Brain Targeting of PLGA Nanocarriers in Large Cerebral Vascular Models	Barcelona, Spain	Talk 6
11:30	Bakenecker, Anna	Magnetic-enzymatic nanomotors depicting a collective swarming behavior and directional navigation abilities	Lübeck, Germany	Talk 7
11:45	Pané, Salvador	Magnetic Small-Scale Robots for Biomedical Applications	Zurich, Switzerland	Invited Talk 1
12:30	Lunch			
	Session 3: Biosensors / Diagnostic Tests			<i>Chair: Isabel Gessner</i>
13:45	Wang, Jian-Ping	Optimization of Volumetric Magnetic Particle Spectroscopy (MPS) Biosensor for 5-Minute Ultrafast Detection of SARS-CoV-2 Spike Protein	Minneapolis, U.S.A.	Talk 8
14:00	Sack, Rebecca	Next generation magnetic circuits for the detection of nucleic acid biomarkers	Braunschweig, Germany	Talk 9
14:15	Mikelez-Alonso, Idoia	One-step and wash-free magnetic method for direct SARS-CoV-2 virus detection in patient samples	Villacastin, Spain	Talk 10
14:30	Salvador, Maria	Magnetic Nanoclusters with Twofold Functionality in Lateral Flow Immunoassays to detect Pneumococcal Pneumonia: Analyte Concentrators and Detection Reporters	Gijon, Spain	Talk 11
14:45	Berret, Jean-Francois	Cytoplasmic Viscosity is a Potential Biomarker for Metastatic Breast Cancer Cells	Paris, France	Talk 12
15:00	Coffee break			
	Session 4: Magnetic Characterizations / Methods / Analytics			<i>Chair: Aidan Lak</i>
15:30	Moya, Carlos	Unveiling the 3D Magnetic Vortex Texture of Iron Oxide Nanoflowers	Barcelona, Spain	Talk 13
15:45	Günther, Johanna	COMPASS: A trailblazing technology for rapid in vitro bioassays based on MNPs	Würzburg, Germany	Talk 14
16:00	Martinez-Pedrero, Fernando	Transportation of Magnetic Colloidal Particles via Driven and Ratchet Mechanisms on Self-Assembled Colloidal Tracks	Madrid, Spain	Talk 15
16:15	Novikau, Ivan	Wobbling in Nanogel Rheological and Magnetic Responses	Vienna, Austria	Talk 16
16:30	Bikulov, Timur	Multicontrast binding state analysis using frequency mixing magnetic detection	Jülich, Germany	Talk 17
16:45	Zhong, Jing	The combination of frequency- and spatial-space for Magnetic Particle Imaging	Beijing, China	Talk 18
17:00	Lopez-Lopez, Modesto	Engineering Magnetic Hydrogels for Tissue Engineering and Remote Actuation	Granada, Spain	Invited Talk 2
17:45	Poster session I (Posters 1-82) - with Beer and Pretzels generously sponsored by Nanomedicine CSIS, the nanomedicine hub in Spain			
19:30	Free evening - go and get collaborations going!			

Wednesday, June 19, 2024				
8:30	Registration desk opens in UAB's Faculty of Arts & Humanities auditorium [Auditorium Filosofia y Letras, Calle de la Fortuna, Bellaterra]			
9:00	Gutierrez, Lucia	On the Biology (and Related Subjects) From the Point of View of a Magnetic Nanoparticle	Zaragoza, Spain	Tutorial 1
	Session 5: Basic Magnetic Particle and Force Studies			<i>Chair: Ondrej Hovorka</i>
9:30	Kantorovich, Sofia	Mixtures of Superpara- and Ferro-magnetic Multicore Nanoparticles: Microstructure and Magnetic Response from Experiment & Simulations	Vienna, Austria	Talk 19
9:45	Livesey, Karen	The "interaction temperature" of magnetic nanoparticle systems	Callaghan, Australia	Talk 20
10:00	Rodriguez-Barroso, Alejandro	Use of a variable inductance coil for high-frequency field sweeping in suspensions of magnetic colloidal particles: self-assembly and rheology	Granada, Spain	Talk 21
10:15	Coffee break			
	Session 6: Magnetic Separation			<i>Chair: Karen Livesey</i>
10:45	Tierno, Pietro	Magnetically driven micro-propellers: from travelling carpets to hydrodynamic bound states	Barcelona, Spain	Talk 22
11:00	Kuzhir, Pavel	Self-assembling magnetic nanoparticles: can they be useful for biomedical applications?	Nice, France	Talk 23
11:15	Efremova, Mariia	AFM Cantilever Magnetometry for Measuring Femto-Nm Torques Generated by Single Magnetic Particles for Cell Actuation	Eindhoven, Netherlands	Talk 24
11:30	Pividori, Maria Isabel	Magnetic Separation of Exosomes with Tailored Magnetic Particles and Downstream Application	Bellaterra, Spain	Talk 25
11:45	Wilhelm, Claire	Magnetic Nanoparticles as Instructive Tools for Engineering, Stimulation, and Treatment of Model Tissues	Paris, France	Invited Talk 3
12:30	Lunch			
	Session 7: Nanoparticle Synthesis and Properties			<i>Chair: Thompson Mefford</i>
13:45	Velazquez-Albino, Ambar	Enhancing MPI Performance: Probing post-synthesis oxidation and correlations to nanoparticle properties	Gainesville, U.S.A.	Talk 26
14:00	Zahn, Diana	High coercivity cobalt ferrite nanoparticles for heating applications	Ilmenau, Germany	Talk 27
14:15	Saladino, Giovanni	Enhanced Functionalities of Magnetic Supramolecular Assemblies for Biomedical and Environmental Applications	Stockholm, Sweden	Talk 28
14:30	Bleul, Regina	Process analytical technology in continuous manufacturing of nanohybrids for advanced theranostics	Mainz, Germany	Talk 29
14:45	Estrader, Marta	Disentangling the layer(s) composition and its individual magnetic contribution in bi-magnetic core@shell nanoparticles	Barcelona, Spain	Talk 30
15:00	Coffee break			
	Session 8: Nanoparticle Synthesis and Properties			<i>Chair: Erzsebet Illes</i>
15:30	Gorka, Salas	Multicore magnetic nanoparticles for magnetic hyperthermia and combination therapy against cancer	Madrid, Spain	Talk 31
15:45	Simeonidis, Konstantinos	A microwave-assisted automated system for sustainable synthesis of magnetic nanoparticles	Thessaloniki, Greece	Talk 32
16:00	Hadadian, Yaser	A Novel Seed-Mediated Growth Approach for Synthesizing Core@shell CoFe ₂ O ₄ @BaTiO ₃ Magnetoelectric Nanoparticles	Gwangju, South Korea	Talk 33
16:15	Serantes, David	Decreasing the anisotropy of magnetite nanoparticles doping with Co?	Santiago de Compostela, Spain	Talk 34
16:30	Diaz Ufano, Carlos	The impact of Coating Zero-Valent Iron Nanoparticles on Advanced Oxidative Processes	Madrid, Spain	Talk 35
16:45	Leliaert, Jonathan	Advanced analysis of magnetic nanoflower measurements to leverage their use in biomedicine	Gent, Belgium	Talk 36
17:00	Telling, Neil	Evaluating the Effect of Nanomagnetic Forces on Neuronal Cells: Towards Magnetically Guided Nerve Regeneration	Keele, U.K.	Invited Talk 4
17:45	Poster session II (Posters 83-164) - with Pizza and Beer generously sponsored by INMA, the Instituto de Nanociencia y Materiales de Aragon			
19:30	Free evening - go and get collaborations going!			

Thursday, June 20, 2024				
8:30	Registration desk opens in the Faculty of Arts & Humanities auditorium [Auditorium Filosofia y Letras, UAB, Calle de la Fortuna, Bellaterra]			
9:00	Gutierrez, Lucia	On the Biology (and Related Subjects) From the Point of View of a Magnetic Nanoparticle	Zaragoza, Spain	Tutorial 2
	Session 9: Magnetic Particle Imaging			<i>Chair: Raluca Fratila</i>
9:30	Mayr, Erik	Disk Shaped Magnetic Thin-Film Nanoparticles Tailored for Optimal MPI Signal Generation	Zurich, Switzerland	Talk 37
9:45	Ackers, Justin	Imaging performance of thin-film disk particles tailored for optimal MPI signal generation	Lübeck, Germany	Talk 38
10:00	Good, Hayden	Understanding the Partial Volume Effect in MPI: A study of object size impact on signal distribution and quantification accuracy	Gainesville, U.S.A.	Talk 39
10:15	Coffee break			
	Session 10: Magnetic Particle Imaging			<i>Chair: Elin Winkler</i>
10:45	Rösch, Esther	Advancing MPI with SMART RHESINs: A novel hollow nanosphere tracer design for viscosity-independent relaxation	Karlsruhe, Germany	Talk 40
11:00	Thanh, Nguyen	Ultra-small Iron Oxide Nanoparticles to Replace Gd Complexes as T1 Contrast Agents for MRI	London, U.K.	Talk 41
11:15	Kosch, Olaf	Imaging of the flow diverter stent insertion into a patient-specific cerebral aneurysm phantom by Magnetic Particle Imaging	Berlin, Germany	Talk 42
11:30	Franke, Jochen	Theranostics: Magnetic Particle Imaging based planning & controlling of highly localized Magnetic Fluid Hyperthermia	Ettlingen, Germany	Talk 43
11:45	Rinaldi Ramos, Carlos	Magnetic Particle Imaging (MPI) of Dendritic Cell Migration in Cancer Therapy	Gainesville, FL, U.S.A.	Invited Talk 5

12:30	Lunch			
	Session 11: Magnetic Hyperthermia			<i>Chair: David Serantes</i>
13:45	Yoon, Jungwon	A Pilot Study on the Possibility of Using MPI for Monitoring the Magnetic Nanoparticles Uptake in Brain Due to Hyperthermia	Gwangju, South Korea	Talk 44
14:00	Mefford, O. Thompson	Measurement of the Differences Between Bulk Heating and Magnetic Hyperthermia via Catalytic Reactions	Clemson, U.S.A.	Talk 45
14:15	Pankhurst, Quentin	An Alternative to the Brezovich Criterion in Magnetic Field Hyperthermia	London, U.K.	Talk 46
14:30	Rizzo, Giusy	Scale-up Syntheses of Ferrite Nanoparticles of Different Shapes with Improved Magnetic Properties for Magnetic Hyperthermia and MPI	Genoa, Italy	Talk 47
14:45	Fernandez-Afonso, Yilian	Reversible alignment of nanoparticles and intracellular vesicles during magnetic hyperthermia experiments	Zaragoza, Spain	Talk 48
15:00	Coffee break			
	Session 12: Magnetic Hyperthermia			<i>Chair: Kostas Simeonidis</i>
15:30	Ruta, Sergiu	A device-independent approach to evaluate the heating performance during magnetic hyperthermia: peak analysis and zigzag protocol	Sheffield, U.K.	Talk 49
15:45	Millan, Angel	Local temperature gradients and induced cell death in intracellular magnetic hyperthermia	Zaragoza, Spain	Talk 50
16:00	Schoenen, Max	Towards image-guided therapies with nanomodified stents	Aachen, Germany	Talk 51
16:15	Christiansen, Michael	Localized Electric Fields Induced by Magnetic Nanoparticles	Zurich, Switzerland	Talk 52
16:30	Fratila, Raluca	Plasma membrane localized magnetic hyperthermia promotes intracellular delivery of cell-impermeant probes	Zaragoza, Spain	Talk 53
16:45	Abasolo Olaortua, Ibane	Iron Oxide Nanoparticles for Magnetic Hyperthermia in Pancreatic Cancer, from Preclinical Testing to Clinical Translation	Barcelona, Spain	Invited Talk 6
17:30	Removal of posters			
18:00	Bus trip to the boat			
19:00	Boat tour with dinner			
22:30	Return to the Pier			

Friday, June 21, 2024				
8:30	Registration desk opens in the Faculty of Arts & Humanities auditorium			
9:00	Gutierrez, Lucia	On the Biology (and Related Subjects) From the Point of View of a Magnetic Nanoparticle	Zaragoza, Spain	Tutorial 3
	Session 13: Biological Applications			<i>Chair: Esther Rösch</i>
9:30	Herraiz Pérez, Aitor	Who needs chelators? Iron oxide as universal platform for multimodal imaging and therapy with radioisotopes	Madrid, Spain	Talk 54
9:45	Katewongsa, Kanlaya	Protein corona and in vitro studies of magnetic nanoparticles for breast cancer delivery	Bangkok, Thailand	Talk 55
10:00	Mickoleit, Frank	Bacterial Magnetosomes as Innovative, Versatile Platform Technology for Biotechnological and Biomedical Applications	Bayreuth, Germany	Talk 56
10:15	Lafuente, Aritz	Ferromagnetic biodegradable nanocapsules for externally controlled and non-invasively monitored nanotherapies	Barcelona, Spain	Talk 57
10:30	Coffee break			
	Session 14: Biological Applications			<i>Chair: Regina Bleul</i>
11:00	Moros, Maria	Remote Magneto-Thermal Modulation of Reactive Oxygen Species Balance Enhances Tissue Regeneration in vivo	Zaragoza, Spain	Talk 58
11:15	Demri, Noam	Magnetic bioprinting of a clip-on muscle tissue	Paris, France	Talk 59
11:30	Grazu, Valeria	Spatio-temporal Selectivity in Chemotherapy: Remote Activation of Enzymatic Nanohybrids for Prodrug Therapy	Zaragoza, Spain	Talk 60
11:45	Viereck, Thilo	Integrated system with magnetic particle imaging and magnetic hyperthermia for localized drug release applications	Braunschweig, Germany	Talk 61
12:00	Del Sol-Fernandez, Susel	Remote Magneto-Mechanical Gating of Endogenous Piezo1 Channel	Zaragoza, Spain	Talk 62
12:15	Perret, Melody	Intracellular proteins targeting with bi-functionalized magnetic nanoparticles	Paris, France	Talk 63
12:30	Joisten, Helene	Mechanobiological responses of cells induced by magneto-mechanical stimulation	Grenoble, France	Talk 64
12:45	Serrano, Maria Concepcion	Exploring magnetic collagen hydrogels for neural regeneration in hemisected rats	Madrid, Spain	Talk 65
13:00	Announcement of the next Magnetic Carrier Meeting 2026			
13:15	End of the Meeting			