



## 11th International Conference on the Scientific and Clinical Applications of Magnetic Carriers - Vancouver, BC, Canada

### Tuesday, May 31, 2016

18:00 **Registration desk opens** - at the Beaty Biodiversity Museum - **2212 Main Mall**

18:30 **Informal reception and welcome cocktail (Apero) at the Beaty Biodiversity Museum** - generously sponsored by **Chemiceil**; with a band sponsored by **Diagnostic Biosensors**

22:00 End of reception

### Wednesday, June 1, 2016

08:00 **Registration desk opens** - at the Nest - **6133 University Boulevard**

#### Opening Session

09:00 Schütt / Zborowski Opening of the conference

09:10 Hafeli, Urs Short review of the last 2 years of magnetic carriers research

Vancouver, Canada

Talk 0

#### Coffee break

#### Session 1 Nanotechnology

*Chair: Benjamin Shapiro*

10:10 Mair, Lamar Doing the Twist: Nanorods with Orthogonally Magnetized Segments Twist Their Way Through Viscoelastic Media

Bethesda, MD, USA

Talk 1

10:30 Tasci, Tonguc Microwheels: Magnetic Bead Rolling Micro-Robots And Their Potential In The Non-Invasive Treatment Of Blood Clots

Golden, CO, USA

Talk 2

10:50 Simberg, Dmitri Complement Activation and Immune Recognition of Superparamagnetic Iron Oxide (SPIO) Nanoworms

Aurora, CO, USA

Talk 3

11:10 Crawford, Thomas Magnetic-field-directed self-assembly of programmable mesoscale shapes

Columbia, SC, USA

Talk 4

11:30 Huber, Dale Measuring biodistribution of PEG coated PrecisionMRX nanoparticles with superparamagnetic relaxometry (SPMR)

Albuquerque, NM, USA

Talk 5

11:50 Nikitin, Maxim Biocomputing nano- and microstructures as smart sensors and theranostic agents

Dolgoprudny, Russia

Talk 6

12:10 Lu, Si Dual-Color Magnetic Barcodes with Ultra-High Encoding Capacity

Shanghai, China

Talk 7

#### Lunch

#### Session 2 Magnetic Drug Delivery / Magnetic Targeting

*Chair: Urs Hafeli*

13:50 Shapiro, Benjamin **Results and Challenges in Magnetically Targeting Therapy to Disease Targets**

College Park, MD, USA

**Invited Talk 1**

14:40 Martel, Sylvain Current challenges in the navigation of magnetic particles in the pig liver using an MRI scanner

Montreal, Canada

Talk 8

15:00 Shademani, Ali A Magnetic Sponge as an On-demand Drug Delivery Device

Vancouver, Canada

Talk 9

15:20 Zhang, Xingming Development of a Real Time Image-Based Guidance System of Magnetic Nanoparticles for Targeted Drug Delivery

Jinju, Korea

Talk 10

#### Coffee break

#### Session 3 Magnetic Drug Delivery / Magnetic Targeting

*Chair: Thomas Crawford*

16:20 Chen, Linjie The target killing of Staphylococcus aureus by magnetotactic bacteria under a compound magnetic field in a microfluidic chip

Beijing, China

Talk 11

16:35 Hervault, Aziliz Doxorubicin loaded dual pH- and thermo-sensitive magnetic nanosystem for combined hyperthermia and controlled drug delivery applications

London, UK

Talk 12

16:50 Sajjad, Umer Advanced locomotion of microbeads on ferromagnetic surfaces

Kiel, Germany

Talk 13

17:05 Barnsley, Lester Optimized shapes of magnetic arrays for drug targeting applications

Oxford, UK

Talk 14

17:20 Cao, Changqian Biomimetic magnetoferritin nanoparticles for targeting and imaging of microscopic tumors

Beijing, China

Talk 15

17:35 Gabbasov, Raul Exogenous Iron Redistribution Between Brain, Liver and Spleen After Administration of 57Fe3O4 Ferrofluid into the Brain Ventricle

Moscow, Russia

Talk 16

17:50 **Poster session I (odd numbered posters) with Beer and Pretzels** - generously sponsored by **micromod**

Thursday, June 2, 2016				
08:00	Registration desk opens - at the Nest - 6133 University Boulevard			
	<b>Session 4</b>	<b>Magnetic Particle Synthesis</b>	<i>Chair: Maciej Zborowski</i>	
09:00	Dietl, Tomasz	Nanospintronics Meets Magnetic Nanoparticles	Warsaw, Poland	Invited Talk 2
09:50	Rich, Megan	MRI visible polymer microcapsules for ultrasound induced targeted drug delivery	Birmingham, UK	Talk 17
10:05	Bahadur, Dharendra	Magnetic nanohybrids for in vivo therapy of cancer	Mumbai, India	Talk 18
10:20	Chen, Ritchie	High-performance ferrite nanoparticles for magnetothermal deep brain stimulation	Cambridge, UK	Talk 19
10:35	Coffee break			
	<b>Session 5</b>	<b>Magnetic Particle Synthesis</b>	<i>Chair: Thompson Mefford</i>	
11:10	Schatte, Sarah	Magnetic Nanocubes in Self-Assembled Hydrogels	Berlin, Germany	Talk 20
11:25	Fratila, Raluca Maria	Nucleic and peptide nucleic acid-engineered iron oxide nanoparticles for magnetic hyperthermia-mediated drug delivery	Zaragoza, Spain	Talk 21
11:40	Dutz, Silvio	Biocompatible Magnetic Fluids of Modified Co-Ferrite Nanoparticles with Tunable Magnetic Heating Power	Ilmenau, Germany	Talk 22
11:55	Insin, Numpon	Photocatalytic and Bactericidal Activities of Colloidal Titania-Silica-Iron Oxides Nanocomposites	Bangkok, Thailand	Talk 23
12:10	Seino, Satoshi	Synthesis and characterization of hollow magnetic nanospheres modified with Au-nanoparticles for bio-encapsulation	Osaka, Japan	Talk 24
12:25	Lunch			
	<b>Session 6</b>	<b>Biological Applications</b>	<i>Chair: Etelka Tombacz</i>	
13:50	Dahan, Maxime	Magnetogenetic Control of Cell Signaling	Paris, France	Invited Talk 3
14:40	Devina, Jaiswal	Immunomagnetic Cancer Cell Capture and Release for Drug Response Study	Storrs, CT, USA	Talk 25
15:00	Graefe, Christine	Passage of SPIONs through Cell Layers	Jena, Germany	Talk 26
15:20	Poster session II (even numbered posters) with coffee and cake			
17:30	Bus leaves to the boat			
18:30	Boat trip on the Magic Spirit from False Creek - generously sponsored by Stemcells; Group picture in front of (or on) the boat			

## Friday, June 3, 2016

08:00	Registration desk opens - at the Nest - 6133 University Boulevard		
	<b>Session 7</b>	<b>Biological Applications</b>	<i>Chair: Gilbert Ryan</i>
09:00	Mohseni, Matin	In-vivo targeting and imaging of super-paramagnetic iron-oxide particles to subcutaneous tumour models	London, UK      Talk 28
09:20	Polyak, Boris	Magnetic cell delivery suppresses in-stent stenosis in injured arteries	Philadelphia, PA, USA      Talk 29
09:40	Tefft, Brandon	Magnetizable Stent-Grafts Enable Endothelial Cell Capture	Rochester, MN, USA      Talk 30
10:00	Prina-Mello, Adriele	Magnetic Nanoparticles Applied to Cancer Theranostics: a Translational Nanomedicine Perspective	Dublin, Ireland      Talk 31
10:20	<b>Coffee break</b>		
	<b>Session 8</b>	<b>Biological Applications</b>	<i>Chair: Kathy Saatchi</i>
11:00	Mair, Lamar	Biofilm Ablation: Rotating Nanorods Remove Microbes from Surfaces, Enhancing Antimicrobial Efficacy	Baltimore, MD, USA      Talk 32
11:15	Hanley, Thomas	Nanomaterial Phagocytosis and Cytotoxicity: Quantification by Magnetic Cytometry	Auburn, MA, USA      Talk 33
11:30	Aurich, Konstanze	Protein modified ferucarbotran particles for GMP conform production of magnetically labeled platelets from platelet concentrates	Greifswald, Germany      Talk 34
11:45	Ma, Yunn-Hwa	Characterization of Magnetic Nanoparticle Internalization by Glioma Cells: Effects of Poly-L-Lysine Coating	Taoyuan, Taiwan      Talk 35
12:00	Gilbert, Ryan	Combinatorial Biomaterial Approaches Using Iron Oxide Nanoparticles to Direct Axonal Regeneration Following Spinal Cord Injury	Troy, NY, USA      Invited Talk 4
12:50	<b>Greek Buffet Lunch</b> - generously sponsored by <b>Ferrotec</b>		
	<b>Session 9</b>	<b>Biosensors</b>	<i>Chair: Hakho Lee</i>
14:00	Zabow, Gary	Transforming magnetic microparticles into RF-addressable microsensors	Boulder, CO, USA      Talk 36
14:20	Nikitin, Petr	Highly sensitive magnetic nanoparticle quantification with 7-order linear range and its applications for multiplex biosensing	Moscow, Russia      Talk 37
14:40	Johansson, Christer	Sensitive magnetic biodetection using magnetic multi-core nanoparticles and RCA coils	Gothenburg, Sweden      Talk 38
15:00	<b>Coffee break</b>		
	<b>Session 10</b>	<b>Biosensors</b>	<i>Chair: Maxime Dahan</i>
15:30	Lee, Hakho	Magnetic Sensors for Clinical Diagnostics: from Nanoscale Vesicles to Cancer Cells	Boston, MA, USA      Invited Talk 5
16:20	Soheilian, Rasam	Smart assembly of magnetic microparticles utilizing 3D magnetic fields	Brookline, MA, USA      Talk 39
16:40	Metaxas, Peter	Towards frequency-based spintronic detection of magnetic nanoparticles	Crawley, Australia      Talk 40
17:00	Wang, Jian-Ping	Magnetic nanoparticle based biosensor for multiplex detection of disease	Minneapolis, MD, USA      Talk 41
17:20	Spasov, Simo	RADIOMAG – A COST networking project in experimental cancer treatment research, combining magnetic fluid hyperthermia and radiotherapy	Dourbes, Belgium      Talk 42
17:40	<b>Free evening</b>		

<b>Saturday, June 4, 2016</b>				
08:00	<b>Registration desk opens - NOTE: NEW LOCATION</b> - Pharmaceutical Sciences Building, Auditorium 1101 - 2405 Wesbrook Mall			
	<b>Session 11</b>	<b>Magnetic Hyperthermia</b>	<i>Chair: Thanh Nguyen</i>	
08:30	Sandre, Olivier	Thermo-sensitive peptide coating onto SPIONs synthesized by the DEG-NMDEA route: in situ dynamic light backscattering during magnetic hyperthermia	Pessac, France	Talk 43
08:45	Takemura, Yasushi	Magnetic loss and constant magnetic rotation of magnetic nanoparticles in viscosity dependence evaluated by dynamic hysteresis measurement	Yokohama, Japan	Talk 44
09:00	Dennis, Cindi	Effect of Applied AC Magnetic Field on Response of Magnetic Nanoparticles	Gaithersburg, MD, USA	Talk 45
09:15	Andreu, Irene	Nano-objects to control Magnetic Hyperthermia performance	Burnaby, Canada	Talk 46
09:30	Blanco-Andujar, Cristina	How much does shape matter?	Strasbourg, France	Talk 47
09:45	Lak, Aidin	Magnetically stimulated phase transformation of FeO/Fe <sub>3</sub> O <sub>4</sub> nanocubes to single Fe <sub>3</sub> O <sub>4</sub> phase: an alternative approach to prepare tumor hyperthermia agents	Genova, Italy	Talk 48
10:00	Beck, Mathias	Improving Nanoparticle Heating by prior Orientation of Particles in a static 3 T magnetic Field	Garching, Germany	Talk 49
10:15	<b>Coffee break</b> - sponsored by <b>Perkin Elmer</b>			
	<b>Session 12</b>	<b>Magnetic Hyperthermia</b>	<i>Chair: Cindi Dennis</i>	
10:45	Thanh, Nguyen	Real-time tracking of delayed onset cellular apoptosis induced by intracellular magnetic hyperthermia	London, UK	Talk 50
11:00	Southern, Paul	Remote Monitoring of Magnetic Particle Temperature During Hyperthermia: the Ideal Dose-Response Metric?	London, UK	Talk 51
11:15	Monnier, Christophe	Lock-in thermography: Using heat as a marker for stability and distribution of magnetic nanoparticles in biological systems	Fribourg, Switzerland	Talk 52
11:30	Millan, Angel	Magnetic nanopatform incorporating a molecular thermometer. A new tool for local hyperthermia	Zaragoza, Spain	Talk 53
11:45	Lewis, Jerome	Superparamagnetic Iron Oxides, from the Lab to Approval	Boston, MA, USA	Invited Talk 6
12:30	<b>Lunch</b>			
	<b>Session 13</b>	<b>Magnetic Imaging / MPI / MRI</b>	<i>Chair: Silvio Dutz</i>	
13:30	Bauer, Lisa	Toward Magnetic Particle Imaging-Guided Hyperthermia (hMPI): Analysis of High-Performance Agents for MPI and Focused Hyperthermia	Cleveland, OH, USA	Talk 54
13:45	Bagheri, Hoda	A Novel Approach to Magnetic Particle Imaging	Burnaby, Canada	Talk 55
14:00	Khandhar, Amit	Pharmacokinetics of LS-008: a blood pool SPIO tracer for Magnetic Particle Imaging	Seattle, WA, USA	Talk 56
14:15	Viereck, Thilo	Approaches to Binding Detection in Magnetic Particle Imaging	Braunschweig, Germany	Talk 57
14:30	Nacev, Aleksandar	Ultra-Fast MRI for Magnetic Particle Manipulation and Imaging	Rockville, MD, USA	Talk 58
14:45	Liebl, Maik	Imaging the mobility of magnetic nanoparticles by magnetorelaxometry tomography	Berlin, Germany	Talk 59
15:00	Quini, Caio	Imaging Magnetic Nanoparticles in vivo by AC biosusceptometry	Botucatu, SP, Brazil	Talk 60
15:15	Bao, Yuping	Shape-dependent Cellular Uptake of two types of MRI T1 Contrast agents	Tuscaloosa, AL, USA	Talk 61
15:30	Siegmund, Birte	In vivo-Tracking of transplanted human adipose stromal cells using magnetic nanoparticles in MRI	Rostock, Germany	Talk 62
15:45	<b>Closing Comments and Announcement of the NEXT MEETING: Urs Hafeli / Maciej Zborowski / Wolfgang Schuett</b>			
16:00	<b>Meeting ends</b>			