

## *Program*

# **Nanotechnology in Medicine: From Molecules to Humans**

**July 3-7, 2016  
Hernstein, Austria**

### **Conference Co-Chairs**

**Prof. Lola Eniola-Adefeso**  
Department of Chemical Engineering  
University of Michigan, USA

**Dr. Paolo Decuzzi**  
Italian Institute of Technology, Italy



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### **The University of Michigan**

## **Sunday, July 3, 2016**

4:00 pm – 5:00 pm	Conference check-in
5:00 pm – 5:15 pm	Welcome and conference logistics Prof. Lola Eniola-Adefeso, Conference co-chair Dr. Paolo Decuzzi, Conference co-chair Dr. Joye Bramble, ECI technical liaison
5:15 pm – 6:15 pm	Plenary Talk #1 <b>Dr. Patrick Couvreur</b> (Paris-Sud University, France)
6:15 pm – 8:00 pm	Wine tasting reception
8:00 pm – 9:30 pm	Dinner
9:30 pm – 10:30 pm	Social hour

### **Notes**

- *Technical sessions will be in the Studio.*
- *Poster Sessions will be in the Hofsuite 1-2.*
- *Meals will be held in the Panorama Restaurant.*
- *Audiotaping, videotaping and photography of presentations are prohibited.*
- *Speakers – Please have your presentation loaded onto the conference computer prior to the session start (preferably the day before).*
- *Speakers – Please leave at least 3-5 minutes for questions and discussion.*
- *Please do not smoke at any conference functions.*
- *Turn your mobile telephones to vibrate or off during technical sessions.*
- *Please write your name on your program so that it can be returned to you if lost or misplaced.*
- *After the conference, ECI will send an updated participant list to all participants. Please check your listing now and if it needs updating, you may correct it at any time by logging into your ECI account.*

## **Monday, July 4, 2016**

- 7:00 am – 8:30 am Breakfast buffet
- 8:30 am – 12:00 pm **Session 1: Nano/microparticles for diagnostics and therapeutics**  
Session Chairs: Dan Peer and Shawn Chen
- 8:30 am – 9:00 am **Prof. Thomas Webster** (Northeastern University, Chemical Engineering, USA)  
*15 years of commercializing nanomedicine into real medical products*
- 9:00 am – 9:30 am **Prof. Dan Peer** (Material Science and Engineering – Tel Aviv University, Israel)  
*Theranostic nanoparticles for treatment of inflammatory disease and cancer*
- 9:30 am – 10:00 am **Prof. Eun Ji Chung** (University of Southern California, USA)  
*Targeting atherosclerosis using supramolecular micellar assemblies*
- 10:30 am – 11:00 am Coffee break
- 11:00 am – 11:30 am **Dr. Paolo Decuzzi** (Italian Institute of Technology, Italy)  
*Rational design of theranostic polymeric nanoconstructs for biomedical applications*
- 11:30 am – 12:00 pm **Millicent Sullivan** (University of Delaware, Department of Chemical Engineering, USA)  
*Unlocking Intracellular Therapeutic Targets through Novel Nanostructured Biomaterials*
- 12:00 pm – 1:30 pm Buffet lunch
- 1:30 pm – 3:00 pm Networking/free time / *ad hoc* sessions
- 2:00 pm – 3:00 pm Optional tour of historic Schloss Hernstein castle – meet at hotel front reception  
Peter Glaser, Schloss Hernstein
- 3:00 pm – 6:00 pm **Session 2: Nano/microparticles for diagnostics, therapeutics and tissue engineering**  
Session Chair: Anirban Sen Gupta
- 3:00 pm – 3:30 pm **Dr. Xiaoyuan (Shawn) Chen** (NIBIB, National Institutes of Health, USA)  
*Construction of nanoparticle platforms for effective drug and gene delivery*
- 3:30 pm – 4:00 pm **Dr. Gary Zabow** (NIST, USA)  
*Shape-changing nanomagnets: A new approach to in vivo biosensing*
- 4:00 pm – 4:30 pm **Prof. Mansoor Amiji** (Northeastern University, Department of Pharmaceutical Sciences, USA)  
*Nanotechnology applications in medical diagnosis, imaging, and therapy*
- 4:30 pm – 5:00 pm Coffee break
- 5:00 pm – 5:30 pm **Prof. Ashutosh Chilkoti** (Duke University, Biomedical Engineering, USA)  
*ELP-Doxorubicin nanoparticles for inhibiting cancer metastasis*
- 5:30 pm – 6:00 pm **Prof. Joerg Lahann** (University of Michigan, Chemical Engineering, USA)  
*Nanoparticles for targeting cancer cells*

**Monday, July 4, 2016 (continued)**

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|--------------------|---|
| 6:00 pm – 7:00 pm  | Plenary Talk #2<br><b>Dr. Viola Vogel</b> (ETH Zurich, Switzerland) |
| 7:00 pm – 8:00 pm  | Networking / Free time  |
| 8:00 pm – 9:30 pm  | Buffet dinner   |
| 9:30 pm – 11:00 pm | Poster Session 1 / Social hour                                      |

## **Tuesday, July 5, 2016**

- 7:00 am – 8:30 am Breakfast buffet
- 8:30 am – 12:00 pm **Session 3: Nano/microtechnology for study of cellular and molecular dynamics**  
Session chair: Lola Eniola-Adefeso
- 8:30 am – 9:00 am **Prof. Lola Eniola-Adefeso** (University of Michigan, Chemical Engineering, USA)  
*Harnessing cell-particle interaction in drug delivery*
- 9:00 am – 9:30 am **Prof. Angela Violi** (University of Michigan, Mechanical Engineering, USA)  
*Nanoparticles and biological cells: From atomistic simulations to membrane diagnostics*
- 9:30 am – 10:30 am **Prof. Yen Nee Tan** (National University of Singapore & Institute of Material Research and Engineering, Singapore)  
*Marrying biomolecules and nanoparticles for diagnostics and nanomedicine*
- 10:30 am – 11:00 am Coffee break
- 11:00 am – 11:30 am **Dr. Diana Boraschi** (National Research Council of Italy, Italy)  
*Impact of engineered nanoparticles in initiating or modulating pathology-related Inflammation*
- 11:30 am – 12:00 pm TBA (Student Talk Invited from Poster Session)
- 12:15 pm – 6:00 pm Excursion / Sightseeing trip to Vienna
- 7:00 pm – 8:00 pm Networking / free time
- 8:00 pm – 9:30 pm Buffet dinner
- 9:30 pm – 11:00 pm Poster Session 2 / Social hour



### **Wednesday, July 6, 2016**

- 7:00 am – 8:30 am Breakfast buffet
- 8:30 am – 12:00 pm **Session 4: Nanotechnology and translational medicine**  
Session Chair: S. M. Moghimi
- 8:30 am – 9:00 am **Prof. Seyed Moein Moghimi** (Durham University, United Kingdom)  
*A mechanistic insight to nanomedicine-mediated adverse cardiopulmonary reactions*
- 9:00 am – 9:30 am **Prof. Victor Shahin** (Westfälische Wilhelms-Universität, Münster, Germany)  
*Novel strategy to disrupt the nuclear pore barrier reversibly: Implications for nanomedicine*
- 9:30 am – 10:00 am **Prof. Alexander Majouga** (Lomonosov Moscow State University)  
*Magnetic materials for smart therapy and diagnostics*
- 10:30 am – 11:00 am Discussion / Coffee break
- 11:00 am – 11:30 am **Prof. Anirban Sen Gupta** (Case Western Reserve University, USA)  
*SynthoPlate: A platelet-inspired hemostatic nanotechnology for treatment of bleeding complications*
- 11:30 am – 12:00 pm **Prof. Doug Vogus** (University of California Santa Barbara, USA)  
*Polymer drug conjugates for the delivery of synergistic chemotherapeutics*
- 12:00 pm – 1:30 pm Buffet lunch
- 1:30 pm – 3:00 pm Networking / free time / *ad hoc* sessions
- 3:00 pm – 6:00 pm **Session 5: Nanotechnology and biopolymer for regenerative medicine**  
Session Chair: Athanassia Athanassiou
- 3:00 pm – 3:30 pm **Dr. Athanassia Athanassiou** (Italian Institute of Technology, Italy)  
*Biopolymers for medical application*
- 3:30 pm – 4:00 pm **Prof. Gianni Ciofani** (Italian Institute of Technology, Italy)  
*Active nanomaterials for biomedical applications*
- 4:00 pm – 4:30 pm **Prof. Kaushal Rege** (Arizona State University, USA)  
*Laser welding and repair of ruptured tissues using photothermal nanocomposites*
- 4:30 pm – 5:00 pm Coffee break
- 5:00 pm – 5:30 pm **Dr. Ilker Bayer** (Italian Institute of Technology, Italy)  
*Biopolymer/Nanocomposite materials in medicine*
- 5:30 pm – 6:00 pm **Dr. Christine Horejs** (Karolinska Institutet, Sweden)  
*Mimicking the extracellular matrix – a biomaterials approach to inhibit tissue fibrosis*
- 6:00 pm – 7:00 pm Plenary Talk #3  
**Dr. Dennis Discher** (University of Pennsylvania, USA)  
*Nano/Meso-scale principles and applications with flexibility: From delivery and self-recognition to differentiation*

**Wednesday, July 6, 2016 (continued)**

7:00 pm – 8:00 pm      Networking/free time

8:00 pm – 10:00 pm      Banquet, Poster Awards, Closing Remarks

10:00 pm – 11:00 pm      Social hour

**Thursday, July 7, 2016**

- 7:00 am – 8:30 am Breakfast buffet
- 8:30 am – 12:00 pm **Session 6: Nanostructures and Nanoscale interaction for cell adhesion, growth, motility, and differentiation**  
Session Chair: Viola Vogel
- 8:30 am – 9:00 am **Prof. Srivatsan Kidambi** (University of Nebraska-Lincoln, USA)  
*Developing nanostructured thin films as biomimetic tissue-engineered platform for cancer research*
- 9:00 am – 9:30 am **Prof. Michelle Dawson** (Brown University, USA)  
*Modeling the tumor microenvironment with nanostructured material*
- 9:30 am – 10:00 am **Prof. Joyce Wong** (Boston University, USA)  
*Nano and microparticles as theranostic agents*
- 10:00 am – 10:30 am **Prof. Chuanliang Feng** (Shanghai Jiao Tong University, China)  
*Bioinspired chiral supramolecular hydrogels*
- 10:30 am – 11:00 am Coffee break
- 11:00 am – 11:30 am **Prof. Claudia Fischbach** (Cornell University, USA)  
*Cell-ECM interactions and their relevance to cancer*
- 11:30 am – 12:00 pm **Dr. Ellen Van-Obberghen** (Institut Valrose Biologie, France)  
*Assembly and function of fibroblast-derived extracellular matrices*
- 12:30 pm Lunch and departures

# Nanotechnology in Medicine: From Molecules to Humans

## Poster Presentations List

1. **Membrane interaction of pegylated superparamagnetic nanoparticles**  
Noga Gal, Boku, Austria
2. **Iron oxide nanoparticles with a variable size and an iron oxidation state for imaging applications**  
Vladimir L. Kolesnichenko, Xavier University, USA
3. **Experimental evaluation of receptor-ligand interactions of dual-targeted particles to inflamed endothelium**  
Margaret B. Fish, University of Michigan, USA
4. **Immunodiagnostics based on optically detected rotational dynamics of anisotropic nanoparticles**  
Astrit Shoshi, Danube University Krems, Austria
5. **New hybrid materials on the basis of magnetite and magnetite-gold nanoparticles for biomedical application**  
Mariia Efremova, Moscow State University, Russia
6. **Magnetic materials for smart therapy and diagnostics**  
Alexander Majouga, Lomonosov Moscow State University, Russia
7. **Identification and smart design of peptide binders recognizing target biomarkers**  
Jong Pil Park, Daegu Haany University, South Korea
8. **Development of biocompatible small-molecule spacers as metal oxide nanoparticles' stabilizing agents**  
Galina Z. Goloverda, Xavier University, USA
9. **Multifunctional nanoparticles for specific neuroblastoma targeting**  
Daniel Quevedo, Karlsruhe Institute of Technology, Germany
10. **Theranostic materials for MRI and targeted delivery based on functionalized magnetite nanoparticles**  
Aleksey Nikitin, National University of Science and Technology "MISIS", Russia
11. **Poster withdrawn**
12. **Surface modification of magnetite-gold dumbbell nanoparticles with fluorescent dyes for new opportunities in visualization**  
Alexandra Prelovskaya, MISIS, Russia
13. **Penetration of PLGA nanoparticles into the intracranial rat C6 Glioma: Influence of surfactant coating**  
Yulia Malinovskaya, Drugs Technology Ltd, Russia
14. **Ultrasmall hexagonal NaGdF<sub>4</sub>:Yb nanoparticles: A theranostic approach to radiotherapy**  
Jossana Damasco, State University of New York at Buffalo, USA

15. **Nanoparticles-based biosensors for cancer diagnostics and drug screening: A study on tumor suppressor protein-DNA Interactions**  
Yen Nee Tan, Institute of Materials Research and Engineering, Singapore
16. **Organic-inorganic magnetic hybrids as multifunctional imaging and therapeutic agents**  
Manuel Bañobre-López, International Iberian Nanotechnology Laboratory, Portugal
17. **Particle surface properties direct cellular immune responses in the lung**  
Catherine A. Fromen, University of Michigan, USA
18. **Molecularly imprinted biofunctional device: Using polymer surfaces on surgical instruments to catalyze blood coagulation**  
Natalie Sullivan, Utah Valley University, USA