

FRIDAY 13<sup>TH</sup> DECEMBER  
AULA MAGNA-BUILDING U6

## Job Day

“Where Industry meets with researchers”

Chairs Nelson Marmiroli (CINSA, Italy) and Lanfranco Masotti (Consorzio Italbiotec, Italy)

- 14:00 Presentations from Companies of Nano sector: selected abstracts
- 14:00 Marek Atanasčev (CzechTrade, Czech Republic) - Introduction
- 14:15 Luca Gentilucci (Univ. Bologna) - Diagnostic and theranostic implementation of dye-loaded peptide-functionalized inorganic nanoparticles targeting integrin-expressing cells
- 14:25 Davide Segà (Univ. Verona— Fabbrica Cooperativa Perfosfati Cerea) - FePO<sub>4</sub> nanoparticles produced by an industrially scalable continuous-flow method are an available form of P and Fe for cucumber and maize plants
- 14:35 Eride Quarta (Univ. Parma— PlumeStars srl) - Microparticles Embedding CaP Nanoparticles for Heart Targeting by Inhalation: Quality by Design Approach for Dry Powder Inhaler Composition
- 14:45 Silvia Pisani (Policlinico S. Matteo, Pavia — Polymerix Srl) - Release of IL-8 from BXPC-3 pancreatic tumor cells influenced by nanostructures
- 14:55 Filippo Vurro (CNR IMEM — Mutti SpA) - Addressing water scarcity in agriculture: the new frontiers of the in vivo monitoring in open field tomato cultivation

- 15:05 Alessandra Ronchi (Univ. Milano Bicocca — Glass to Power SpA) - Triplet fusion-based hybrid upconverters: achieving 100% triplet sensitization yield by charge-engineered semiconductor nanocrystals
- 15:15 Giuseppe De Giorgio (Univ. Parma) Toxicological assessment of food-grade nanoparticles
- 15:30 Position Paper: Update on the EFSA NanoGuidance — Francesco Cubadda (ISS, Roma) - Application of nanotechnologies in the agri-food sector: assessment of risks to human health
- 15:50 Coffee break
- 16:00 Companies meet with young researchers
- Short presentations and face to face meetings
- Jeol (Italia) SpA, Gabriele Bulla — Living in the future: Innovation of electron microscopy
- Tec Star Srl, Alberto Borghi — Innovation by nanoparticles
- Assing SpA, Stefano Chiesa — The research partner
- NANO SENSOR SYSTEMS Srl, Giorgio Sberveglieri — Metal Oxide Nanowires gas sensors for food quality control
- EVOpti Srl, Enrico Luciano Appiani — Our evolution towards catalysis

SATURDAY 14<sup>TH</sup> DECEMBER  
AULA SIRONI-BUILDING U4

## Closing Ceremony

Chairs Nelson Marmiroli (CINSA, Italy), Lanfranco Masotti (Consorzio Italbiotec, Italy) and Filippo Maurizio Acciari (Univ. Milano Bicocca)

- 09:00 Reporting on sessions from the Scientific Committee
- 10:30 Coffee break
- 11:00 Presentation from organizers
- Best poster and best oral presentations Special Elsevier AWARDS
- Conclusion Where we go from here, Nelson Marmiroli (CINSA)
- Conclusion Nelson Marmiroli, Lanfranco Masotti, Filippo Maurizio Acciari

UNIVERSITÀ MILANO - BICOCCA, MILANO



PROGRAMME

WEDNESDAY 11<sup>TH</sup> DECEMBER  
AULA MAGNA-BUILDING U6

WEDNESDAY 11<sup>TH</sup> DECEMBER  
AULA MARTINI-BUILDING U6

- 08:30 Welcome coffee and REGISTRATION
- 09:30 Opening of the Conference — Welcome  
Prof. Filippo Maurizio Acciari - Univ. Milano Bicocca  
Prof. Giovanna Iannantuoni - Rector - Univ. Milano Bicocca  
Dott. Fabrizio Sala - Vicepresidente Regione Lombardia  
Prof. Lanfranco Masotti - Consorzio Italbiotec  
Prof. Nelson Marmiroli - Consorzio Interuniversitario Nazionale per le Scienze Ambientali
- 10:00 Round Table “Nanotechnologies in Life Sciences and Technology” – “Nanotecnologie nelle Scienze della Vita e nelle Tecnologie”  
Round Table Director Vittoriano Zanoli, La Provincia di Cremona newspaper
- Speakers  
Fabrizio Sala, Vicepresidente Regione Lombardia  
Flavia Barone, Istituto Superiore Sanità  
Mario Bonaccorso, ASSOBIOTEC-FEDERCHIMICA  
Andrea Caneschi, Direttore Consorzio INSTM  
Dario Dalla Vedova, CONI  
Mauro Varasi, Gruppo Leonardo (Finmeccanica)
- 12:00 Lunch break
- 14:20 Introduction to Sessions A and B
- 14:30 Plenary Lecture: Leo Miglio (Univ. Milano Bicocca) — From Science to Technology  
Chair Michele Iafisco (CNR ISTEC, Faenza)

## Parallel Session 1A

“Nanotechnologies and nanomaterials in agriculture and food production” (in association with SIMBA H2020 project)  
Chairs Anne Pihlanto (LUKE, Finland) and Elena Maestri (Univ. Parma)

- 15:10 Mini Plenary Lecture: Anne Pihlanto (LUKE, Finland) - Sustainable innovation of microbiome applications in the food system
- 15:40 Silvia Tabacchioni (ENEA, Roma) - Design of microbial consortia with plant growth-promoting activity for sustainable crop production
- 16:00 Minna Kahala (LUKE, Finland) - Microbial processing for nutritional enhancement of plant based products
- 16:20 Anne-Maria Pajari (Univ. Helsinki, Finland) - Sustainable foods and human gut microbiota
- 16:40 Coffee break
- 17:00 Milena Stefanova (ENEA, Bologna) - Sustainability Assessment and Potential Uptake of Innovations
- 17:20 Riccardo Rossi (Univ. Parma) - Effects of Copper Oxide nanomaterial on plant flowering: a transcriptomic and physiological approach to enable sustainable food production
- 17:30 Gregorio Dal Sasso (CNR IC, Como) - Nitrate-doped Biomimetic Calcium Phosphate Nanoparticles as N and P Slow-Release Nanofertilizers via Particle Dissolution
- 17:50 Andrea Ciurli (Univ. Verona) - FePO<sub>4</sub> nanoparticles as a source of nutrients: effects on plant transcriptome and on soil microbial communities and functions

## Parallel Session 2A

“New materials for nanotechnologies” (synthesis, testing, characterisation)  
Chairs Leo Miglio (Univ. Milano Bicocca) and Michele Iafisco (CNR ISTEC, Faenza)

- 15:10 Mini Plenary Lecture: Michele Iafisco (CNR ISTEC, Faenza) - Tailoring the chemistry of bioceramic nanoparticles for unconventional applications
- 15:40 Valentina Palmieri (Univ. Catt, Sacro Cuore, Roma) - Laser Patterning of Graphene Oxide induce bone regeneration
- 16:00 Emanuele Longo (CNR IMM, Agrate Brianza) - ALD growth of Co thin films on the topological insulator Sb<sub>2</sub>Te<sub>3</sub>
- 16:20 Tommaso Giovannini (NUST, Norway) - A novel classical approach to optical properties of metal nanoparticles
- 16:40 Coffee break
- 17:00 Margaux Bouzin (Univ. Milano Bicocca) - Nanoparticles Localization in Tissues at Sub-Diffraction Level by Infrared Thermal Imaging
- 17:15 Artur Tuktamyshev (Univ. Milano Bicocca) - Telecom InAs QDs grown by Droplet Epitaxy on vicinal GaAs(111)A
- 17:30 Marcello Marelli (CNR SCITEC, Milano) - In-flow Synthesis of Multibranching Au/TiO<sub>2</sub> Hybrid Nanosystem: Exploiting the Plasmonic Features for Catalytic Purposes
- 17:45 Anna Maria Ferretti (CNR SCITEC, Milano) - Synthesis, characterization and application of low band gap rod-coil block copolymer water-processable nanoparticles, synthesized by surfactant-free miniemulsion approach
- 18:00 Poster Session A

NANO-DAY  
11<sup>TH</sup> - 14<sup>TH</sup> DECEMBER 2019

THURSDAY 12<sup>TH</sup> DECEMBER  
AULA MAGNA-BUILDING U6

08:30 **Plenary Lecture:** *Bengt Fadeel (Karolinska Inst., Sweden) - Nanotoxicology: focus on the impact of metal and metal oxide nanoparticles*  
*Chair Isabella De Angelis (ISS, Roma)*

### Parallel Session 1B

**"Nanotechnologies and nanomaterials for human and animal health"** (pharmaceutical and medical applications)  
*Chairs Bengt Fadeel (Karolinska Inst., Sweden) and Isabella De Angelis (ISS, Roma)*

09:10 **Mini Plenary Lecture:** *Isabella De Angelis (ISS, Roma) - Towards the Risk Governance of Nanotechnologies: the ISS Multidisciplinary Unit*

09:40 **Lucia Gemma Delogu (Univ. Padova) - Immune characterization of graphene-based materials for the design of new tools in biomedicine**

10:00 **Lucia Paolini (Univ. Brescia) - Exploiting blood nanoparticles for augmented pathogenesis identification**

10:20 **Giordano Perini (Univ. Catt. Sacro Cuore, Roma) - Graphene Quantum Dots for the Treatment of Glioblastoma Multiforme**

10:40 **Coffee break**

11:00 **Arianna Rossetti (Polit. Milano) - Selective modulation of A1 astrocytes by drug-loaded nano-structured gels in spinal cord injury**

11:15 **Silvana Fiorito (CNR ITP, Roma) - Neuroprotective effect of Metallic Multi Walled Carbon Nanotubes**

11:30 **Eleonora Terreni (Univ. Pisa) - Mucoadhesive polymeric inserts containing Cyclosporine-A loaded nanomicelles for the treatment of dry eye syndrome: technological and biopharmaceutical characterization**

11:45 **Rossella Bengalli (Univ. Milano Bicocca) - In vitro toxicity of antibacterial metal oxide nanoparticles: effects on 2D and 3D skin and lung models**

THURSDAY 12<sup>TH</sup> DECEMBER  
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### Parallel Session 2B

**"Sensors from nanotechnologies and new nanomaterials"**  
*Chairs Nicola Coppedè (IMEM CNR, Parma) and Laura Polito (ISTM CNR, Milano)*

09:10 **Mini Plenary Lecture:** *Nicola Coppedè (IMEM CNR, Parma) - Integrated and distributed sensors for the IOT*

09:40 **Stefano Stassi (Polit. Torino) - Nanomechanical resonators from suspended DNA fibers for structural analysis**

10:00 **Daniele Moscheni (CNR IC, Como) -The Role of Advanced X-ray Scattering Techniques on Nanomaterials Characterization: A case study on CdSe-based Colloidal Quantum Dots**

10:20 **Laura Riva (Polit. Milano) - Aromatic Imides Functionalized Cellulose Nanosponges for Naked-Eye Heterogeneous Sensing of Fluoride**

10:40 **Coffee break**

11:00 **Lucia Ganzer (Polit. Milano) - Tailoring optical properties and stimulated emission in nanostructured polythiophene**

11:15 **Federico Polo (Univ. Ca' Foscari, Venezia) - Perspectives on Nanostructured Architectures for Biosensing Applications and New Analytical Tools: Toward Precision Medicine**

11:30 **Francesca Berini (Univ. Insubria) - Magnetic nanoconjugated glycopeptides as novel tools for bacterial infection site targeting**

11:45 **Cecilia Martini (ISOF CNR, Bologna) - Intercalation of Bioactive Molecules into Nanosized ZnAl Hydroxalicates for Combined Chemo and Photo Cancer Treatment**

12:00 **Lunch break & Poster**

THURSDAY 12<sup>TH</sup> DECEMBER  
AULA MAGNA-BUILDING U6

14:30 **Plenary Lecture:** *Davide Prosperi (Univ. Milano Bicocca) - Critical issues in the clinical translation of nanobiotechnology research and future directions of nanomedicine*  
*Chair Om Parkash Dhankher (University of Massachusetts, USA)*

### Parallel Session 1C

**"Nanotechnologies and nanomaterials for different environments"** (risk assessment, monitoring and remediation)  
*Chairs Davide Prosperi (Univ. Milano Bicocca) and Om Parkash Dhankher (University of Massachusetts, USA)*

15:10 **Mini Plenary Lecture:** *Om Parkash Dhankher (University of Massachusetts, USA) Toxicity of Metal-Based Engineered Nanoparticles in Crops and Their Impact on Global Food Security and Safety*

15:40 **Massimiliano Bianchi (Univ. Parma) - Amorphous silica nanoparticles interfere with LPS-dependent metabolic changes in human macrophages**

16:00 **Davide Fissore (Polit. Torino) - Use of chitosan nanoparticle to vehicle dsRNAs against tomato spotted wilt virus in plants**

16:20 **Andrea Fiorati (Polit. Milano) - Eco-design of nanostructured cellulose sponges for sea-water decontamination from heavy metal ions**

16:40 **Coffee break**

17:00 **Stefano Rossi (Univ. Parma) - Direct effects of diesel exhaust particles on different cell lines as well as on in vivo rat heart: Euro III vs. Euro IV engines**

17:15 **Tiziana Silveti (CNR ISPA, Milano) - Chemo-enzymatic oxidation of plant galactomannans with laccase/TEMPO for production of renewable biomaterials, also as delivery systems**

17:30 **Stefania Federici (Univ. Brescia) - Reference Materials for Environmental Nanoplastic Pollution**

17:45 **Luca Pagano (Univ. Parma) - Maintenance and expression of organelle information in plants exposed to engineered nanomaterials**

THURSDAY 12<sup>TH</sup> DECEMBER  
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### Parallel Session 2C

**"New industrial processes and products based on nanotechnologies and nanomaterials"** (including new energy sources)  
*Chairs Agnieszka Mech (European Commission) and Rosaria Rinaldi (Univ. Salento)*

15:10 **Mini Plenary Lecture:** *Agnieszka Mech (European Commission) - Regulatory aspects of nanomaterials issue: towards safe, sustainable and responsible innovation*

15:40 **Enrica Chiesa (Univ. Pavia) - Development of a rapid and low-cost microfluidic process enabling efficacious and specific CD44 targeted delivery by using HA-based nanoparticles**

16:00 **Matteo Zaffalon (Univ. Milano Bicocca) - Evidence for the Band-Edge Exciton of CuInS<sub>2</sub> Nanocrystals Enables Record Efficient Large-Area Luminescent Solar Concentrators**

16:20 **Roberto Sorrentino (CNR SCITEC, Milano) - Nanoplatelets Light Emitting Diodes with tunable cathode and anode interfaces properties**

16:40 **Coffee break**

17:00 **Silvia Mostoni (Univ. Milano Bicocca) - Nanosized and single site zinc-based activators for reducing ZnO in rubber vulcanization process**

17:15 **Alberto Vomiero (Univ. Ca' Foscari Venezia) - Interfacial properties in composite nano-systems for energy harvesting**

17:30 **Jessica Gasparello (Univ. Ferrara) - Validation of a novel argininocalix[4]arene macrocycle as transfection agent for miRNA-mimicking and anti-miRNA molecules**

17:45 **Francesca Carella (CNR ISTEK, Faenza) - From food industry by-product to a novel UV filters production for sunscreen applications**

18:00 **Poster Session B**

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08:30 **Plenary Lecture:** *Arturo Keller (Univ. California, USA) - Elucidating crop plant response to engineered nanomaterials using metabolomics and proteomics*  
*Chair Jason C. White (CAES, USA)*

### Parallel Session 1D

**"Nanotechnologies and nanomaterials to expand biotechnology and promote business"** (industrial nanobiotechnology and marketing its products)  
*Chairs Jason C. White (CAES, USA) and Marta Marmiroli (Univ. Parma)*

09:10 **Mini Plenary Lecture:** *Jason C. White (CAES, USA) - Nanotechnology in agriculture: Balancing applications and implications*

09:40 **Cristina Caffarra (Univ. Parma) - A 3D bioprinted model for in vitro nanotoxicological investigation: preliminary studies**

10:00 **Denise Beconcini (Univ. Siena/Pisa) - Nanoparticles based on chitosan-derivatives as delivery systems for natural cherry extract polyphenols**

10:20 **Francesco Gentile (Univ. Federico II Napoli) - Superclusters of neuronal cells on zinc oxide nanowires surfaces**

10:40 **Coffee break**

11:00 **Andrea Perrelli (Univ. Torino) - Development of combinatorial targeted therapeutic strategies based on nanotechnology for Cerebral Cavernous Malformation disease treatment**

11:15 **Patrizia Cancemi (Univ. Palermo) - Biogenerated Silver nanoparticles: promising antitumoral drugs for cancer therapy**

11:30 **Elena Bossi (Univ. Insubria) - To cross or not to cross: some, but not all, metal nanoparticles enter cells by plasma membrane direct crossing**

11:45 **Valentina Gallo (Univ. Parma) - Protein responses in eukaryotic cells exposed to cadmium sulphide quantum dots**

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### Parallel Session 2D

**"Safer nanotechnologies and nanomaterials for the future"** (planning, using, safe by design, marketing safer nanotechnologies)  
*Chairs Andrea Zappettini (CMR IMEM, Parma) and Filippo Maurizio Acciarri (Univ. Milano Bicocca)*

09:40 **Parisa Fatehbasharzad (Univ. Torino) - Engineering Shape of Nanoparticle-Based Magnetic Resonance Imaging Contrast Agent**

10:00 **Valentina Bello (Univ. Pavia) - Micro-capillary refractive index sensor based on monitoring of T/R ratio spectral shift**

10:20 **Ruben Foresti (Univ. Parma) - 3D printing nano-laden scaffold for personalized medicine**

10:40 **Coffee break**

11:00 **Valerio Pinchetti (Univ. Milano Bicocca) - Dual emitting CdSe/CdS nanocrystals hosting core- and shell-based excitons for last-generation nanotechnologies and as platform for fundamental investigations**

11:15 **Vittoria Viganò (Univ. Insubria) - Nanomedicine: is there plenty of room for ethics?**

11:30 **Stefania Gottardo (JRC, Ispra) - Quality and completeness of physicochemical data for safety assessment of nanomaterials**

11:45 **Marcello Berto (Univ. Modena Reggio Emilia) - Carbon nanotubes/proteins hybrid for Organic Electronics**

12:00 **Mini Plenary Lecture:** *Luca Prodi (Univ. Bologna) - Dye Doped Silica Nanoparticles as Organized Systems for Nanomedicine*

12:30 **Lunch break & Poster Session C**