



RECENT ADVANCES IN NANOMEDICINE: OPPORTUNITIES AND CHALLENGES – II EDITION

University of Milano Bicocca
Milano, Piazza Ateneo Nuovo 1, 20126
Building U6, Aula Martini

Thursday 17th September 2026

12.00-13.00 **Registration**

13.00-13.30 **Opening Conference and Institutional Greetings**
Rector Prof. Marco Orlandi, Prof. Davide Prosperi, Nanomib director, **and Prof. Cristiana Di Valentin**, Nanomib deputy director and Organizing Committee, University of Milano Bicocca
Welcome and Introduction

Session 1 Session Chairs, Prof. Davide Prosperi

Plenary:

13.30-14.15 **Prof. Warren Chan** – Nanyang Technological University of Singapore
How do nanoparticles penetrate into the tumour?

Invited orals:

14.15-14.30 **Dr. Elide Zingale** – University of Catania
Development of a Teicoplanin–Quercetin Self-Nanoemulsifying Drug Delivery System for Recalcitrant Bacterial Keratitis

14.30-14.45 **Dr. Giacomo Dacarro** – University of Pavia
Prussian Blue Nanoparticles for photothermal antibacterial materials

Orals:

14.45-15.00 **Prof. Roberto Simonutti** – University of Milano Bicocca
Fabrication of Porous Microparticles for Potential Drug Delivery Applications

Flash orals:

15.00-15.10 **Emanuela Peluso** – University of Pavia - **Invited**
Mucosomes as Multifunctional Mucoadhesive Nanocarriers for Pulmonary Drug Delivery: Evaluation in an Infected Lung Epithelial Cell Model

15.10-15.20 **Andrea Banfi** – University of Milano Bicocca
Mirror-Image Peptide Nanoparticles for Nucleic Acid Delivery

15.20-15.30 **Giulia Lodigiani** – Politecnico di Milano
Designing Functional EV Mimics by Supramolecular Control of Membrane Mechanics and Interfaces

15.30 -16.15 Coffee break and poster session

Session 2 Session Chairs: Prof. Cristiana Di Valentin

Keynote talk:

16.15-16.45 **Prof. Anke Krueger** – University of Stuttgart, Germany
Functionalized nanodiamond as versatile platform in biomedicine - from drug delivery to quantum sensing

Invited orals:

16.45-17.00 **Prof. Roberto Fiammengo** – University of Verona
Wisteria Floribunda Agglutinin-Functionalized Nanoparticles targeted at Perineuronal Nets

17.00-17.15 **Dr. Andrea Levy** – EPFL, Switzerland
Multiscale Modeling: New Opportunities for Computational Nanomedicine

Orals:

17.15-17.30 **Dr. Cinzia Bragato** – University of Milano Bicocca
Bio-based Silica and Lignin nanoparticles for nanomedicine applications: safety insights from a zebrafish embryo screening platform

17.30-17.45 **Dr. Edoardo Donadoni** – University of Milano Bicocca & University of Genova
Atomistic simulations and experiments reveal the molecular basis of protein corona formation on polymer-coated nanodiamonds

Flash orals:

17.45-17.55 **Elena Arato** – University of Torino
Nanodiamonds for ROS quantum Sensing in radiotherapy

17.55-18.05 **Brian Novati** – University of Milano Bicocca
A multifunctional platform: SERS active Silver/Gold Nanorattles for photothermal and photodynamic therapy

18.05-18.15 **Anita Salmaso** – IRCCS Istituto di Ricerche Farmacologiche Mario Negri, Milan
Optimization of an integrated platform to track carrier and payload fate after intranasal administration in a mouse model of lung fibrosis

Friday 18th September 2026

Session 3 Session Chairs: Prof. Francesca Re and Prof. Gilberto Chirico

Keynote talk:

- 8.45-9.15 **Prof. Twan Lammers** – University Hospital RWTH Aachen, Germany
Strategies to Promote Cancer Nanomedicine Performance and Clinical Translation

Invited orals:

- 9.15-9.30 **Dr. Silvia Picciolini** – IRCCS Fondazione Don Carlo Gnocchi ETS, Milan
Portable SERS-Raman Spectroscopy of Saliva for the Differential Diagnosis of Neurodegenerative Disorders

Flash orals:

- 9.30-9.40 **Michela Petrucco** – University of Milano Bicocca
From Transwell to Organ-on-Chip: evaluating lipid nanoparticles across next-generation BBB models in the NAM era

Keynote talk:

- 9.40-10.10 **Dr. Denis Scaini** - University of the Basque Country, UPV/EHU
Being in the driver's seat: Advanced 3D in vitro models of human tissues as a reliable platform for evaluating cell adaptation to external stimuli

Orals:

- 10.10-10.25 **Prof. Cristina Ciobanu** – State University of Medicine and Pharmacy, Chisinau, Moldova
Development and Preliminary In Vitro Evaluation of a Liposomal Cynara cardunculus subsp. flavescentis Extract

Flash orals:

- 10.25-10.35 **Martina Beccalli** – Politecnico di Milano
Fluorinated lipid nanoparticles for enhanced gene delivery
- 10.35-10.45 **Letizia Marchesi** – University of Milano Bicocca
Label-Free 3D Characterization and Classification of Pollen Grains via Light Scattering and Cavitation Microstreaming

10.45-11.15 Coffee break and poster session

Session 4 Session chairs: Prof. Miriam Colombo and Prof. Angelo Monguzzi

Keynote talk:

- 11.15-11.45 **Dr. Anne Laure Bulin** – INSERM Grenoble, France
Nanoscintillators as innovative therapeutic agents for enhanced radiation therapy

Invited orals:

- 11.45-12.00 **Dr. Giorgia Giovannini** – IRCCS Istituto di Ricerche Farmacologiche Mario Negri, Milan
Stimuli-Responsive Nanomaterials for Advanced Precision Therapeutics

12.00-12.15 **Dr. Emil Milan** – University of Verona
In-vitro reactive oxygen species production using upconverting colloidal nanoparticles upon NIR radiation triggering

12.30-12.45 **Dr. Fabio Selis** – Patheon, Thermo Fisher Scientific
The Evolution of Lyophilization Technology in the Pharmaceutical Industry: From Conventional Batch Lyophilization to Continuous Spin Freeze-Drying

Oral

12.15-12.30 **Dr. Irene Villa** – University of Milano Bicocca
Engineering energy-harvesting multi component nanoscintillators for enhanced cancer radiotherapy

Flash orals

12.30-12.40 **Manuela Iacobini** – Sapienza University of Rome
Decoding Disease-Specific Protein Corona Fingerprints for Nanodiagnostic Applications

12.40-12.50 **Michela Pesenti** – University of Milano
Dual-State Emissive Amino Acids as Building Blocks for Self-Assembling Peptide-Based Materials

12.50-13.00 **Yining Li** – Queen's University Belfast, UK
Tumour-Microenvironment-Responsive ICD–Ce6@MIL-100(Fe) Nanoparticles for Synergistic CDT/PDT/PTT Cancer Therapy

13.00-13.10 **Beatrice Bignami** – University of Milano
Engineering PASylated Ferritin Nanocages for Enhanced Fluorescence-Guided Surgery

13.10-13.20 Closing remarks

Poster presentations:

1. **Altigieri Leila**, Sukubo Naths Grazia, Violatto Martina Bruna, Renzi Serena, Invernizzi Pietro, Bigini Paolo, Caracciolo Giulio
Istituto di Ricerche Farmacologiche "Mario Negri" IRCCS, Milan, Italy
Title: *siRNA-mediated Timp1 silencing induces fibrosis regression in a murine model of Primary Biliary Cholangitis*
2. **Andreozzi Pietro**, Frigerio Giulia, Siani Paulo, Perilli Daniele, Di Valentin Cristiana
University of Milano-Bicocca, Milan, Italy
Title: *Building a computational model of coated carbon nitride nanoparticles*
3. **Andronache Lilia**, Ghiarasim Răzvan, Cojocari Sergiu, Ciobanu Cristina, Dragoi Brindusa
Nicolae Testemițanu State University of Medicine and Pharmacy, Chișinău, Republic of Moldova
Title: *Microfluidic Preparation of pH-Responsive Soy PC/DOPE/CHEMS Liposomes for Controlled Doxorubicin Release*
4. **Bengalli Rossella Daniela**, Gualtieri Maurizio, Coelho Lorena, Mantecca Paride
University of Milano-Bicocca, Milan, Italy
Title: *Integration of Adverse Outcome Pathways (AOPs) in the Hazard Assessment of Bio-based Silica and Titania Nanomaterials*
5. **Bignami Beatrice**, Sevieri Marta, Giacobbo Valeria, Gorgoglione Francesca, Tagliolini Ilaria, Bonizzi Arianna, Corsi Fabio, Mazzucchelli Serena
University of Milano, Milano, Italy
Title: *Engineering PASylated Ferritin Nanocages for Enhanced Fluorescence-Guided Surgery*
6. **Bonaccorso Angela**, Zingale Elide, Muratori Luisa, Fregnan Federica, Piumatti Anna, Musumeci Teresa, Raimondo Stefania, Pignatello Rosario
University of Catania, Catania, Italy
Title: *DoE-Guided Optimization of Binary Polymeric Nanomicelles for Sildenafil Delivery*
7. **Brambilla Emilia**, Agresti Filippo, Capitani Giancarlo, Saibene Melissa, Lange Heiko, Vercelli Barbara
University of Milano-Bicocca, Milan, Italy
Title: *Synthesis and Purification of Red Carbon Dots by Solvothermal Method in the Framework of Green Chemistry*
8. **Brandi Lorenzo**, Sevieri Marta, Tagliolini Ilaria, Bignami Beatrice, Giacobbo Valeria, Gorgoglione Francesca, Bonizzi Arianna, Truffi Marta, Corsi Fabio, Mazzucchelli Serena
University of Milan (Università degli Studi di Milano), Milan, Italy
Title: *Study of Tumor-Derived Extracellular Vesicles for the Identification of Tumor Cells*
9. **Carbone Faccin Greta**, Molteni Laura, Kravicz Marcelo, Re Francesca, Sesana Maria Silvia, Nicolini Gabriella, Mantecca Paride, Bragato Cinzia
University of Milano-Bicocca, Milan, Italy
Title: *Liposome as a targeted delivery system to overcome side effects of cancer treatments*

10. **Castaldini Nicholas**, Santamaria Federico, Gugel Ilenia, Mariani Paolo, Pepe Alessia, Ortore Maria Grazia, Baldisserotto Anna, Manfredini Stefano, Valacchi Giuseppe, Esposito Elisabetta
University of Ferrara, Ferrara, Italy
Title: Preparation and biological evaluation of a Genistein-loaded transethosomes gel for transdermal administration

11. **Colombo Alessandro**, Bruno Antonia, Tripodi Farida, Armanni Alice, Barbieri Linda, Fumagalli Sara, Moukham Hind, Tomaino Giulia, Kukushkina Ekaterina, Lorenzi Roberto, Marchesi Letizia, Monguzzi Angelo, Paleari Alberto, Ronchi Alessandra, Secchi Valeria, Sironi Laura, Colombo Miriam
University of Milano-Bicocca, Milan, Italy
Title: Surfactant Protein D (SP-D) based Point-Of-Care sensor for E. coli detection in paper-based platforms exploiting smartphone microscopy

12. **Comi Susanna**, Amenta Arianna, Mannino Maria, Seneci Pierfausto, Levesque Mitchell, Re Francesca
University of Milano-Bicocca, Monza, Italy
Title: A novel, glutathione activated prodrug of Pimasertib loaded in liposomes for targeted melanoma therapy

13. **Dragoi Brindusa**, Nistor Mirela, Gherca Daniel, Uritu Cristina Mariana, Grigoras Marian, Balan Vera, Zardanceanu Camelia Mihaela, Postu Paula Alexandra, Fratila Raluca M., Stiufiuc Rares-Ionut, Pui Aurel
Regional Institute of Oncology "Alexandru Ioan Cuza" University of Iași, Iași, Romania
Title: Enhancing the Functional Properties of Magnetite by Transition Metal Doping for Oncological Applications

14. **Erkoç Esra**, Saygı Ayşe Selin, Koçberber Kılıç Nur
Ankara University, Ankara, Türkiye
Title: Photocatalytic Potential of Biogenic Silver Nanoparticles Produced By Bacillus albus

15. **Erroi Andrea**, Secchi Valeria, Monguzzi Angelo, Campione Marcello
University of Milano-Bicocca, Milan, Italy
Title: Tunable Microwave-Assisted Surface Functionalization of Biocompatible Magnesium Silicate Nanotubes for Advanced Nanomedicine Applications

16. **Frigerio Giulia**, Motta Stefano, Siani Paulo, Donadoni Edoardo, Di Valentin Cristiana
University of Milano-Bicocca, Milan, Italy
Title: Unveiling the drug delivery mechanism of graphene oxide dots at the atomic scale

17. **Galbussera Alessandro Enrico**, Altigieri Leila, Sukubo Naths Grazia, Violatto Martina Bruna, Invernizzi Pietro, Renzi Serena, Bigini Paolo, Caracciolo Giulio
Istituto di Ricerche Farmacologiche "Mario Negri" IRCCS, Milan, Italy
Title: Cholesterol-enriched lipid nanoparticles promote liver tropism in a murine model of Primary Biliary Cholangitis

18. **Gambari Simone**, Siani Paulo, Frigerio Giulia, Di Valentin Cristiana
University of Milano-Bicocca, Milan, Italy
Title: Computational Design of Polymer-Coated Nanodiamonds with Zwitterionic End-Groups for Efficient Drug Delivery

19. **Gavazzoni Benedetta**, Bona Beatrice Lucia, Chirizzi Cristina, Manna Francesco, Garelo Francesca, Lux Alberto, Polli Dario, Digilio Giuseppe, Conti Claudia, Baldelli Bombelli Francesca, Vanna Renzo
CNR – Institute for Photonics and Nanotechnologies / Politecnico di Milano, Milan, Italy
Title: Raman Imaging for the Monitoring of Cellular Internalization and Fate of MRI-active Fluorinated Nanoparticles

20. **Giustra Marco**, Novati Brian, Secchi Valeria, Monguzzi Angelo, Colombo Miriam, Prosperi Davide
University of Milano-Bicocca, Milan, Italy
Title: Multidentate Polymer Engineered with Photosensitizing Porphyrins for Nanoparticle Functionalization and Selective PDT

21. **Iacobini Manuela**, Digiacomo Luca, Caputo Damiano, Cammarata Roberto, La Vaccara Vincenzo, Coppola Roberto, Quagliarini Erica, Renzi Serena, Giulimondi Francesca, Amenitsch Heinz, Pozzi Daniela, Caracciolo Giulio
Sapienza University of Rome, Rome, Italy
Title: Decoding Disease-Specific Protein Corona Fingerprints for Nanodiagnostic Applications

22. **Lekaj Oeda**
Albanian University, Albania
Title: Carbon Nanotubes in Nanopharmaceutical Sciences: Development of Anticancer Drug-Loaded Nanoplatfoms for Skin Cancer Therapy

23. **Lekaj Oeda**
Albanian University, Albania
Title: Nanoparticles in Gene Therapy: Advances in Non-Viral Delivery Platforms for Nucleic Acid-Based Therapeutics

24. **Li Yining**, Li Shu, Ge Yi
Queen's University Belfast, Belfast, UK
Title: Developing Multi-functional Molecularly Imprinted Nanocomposites

25. **Masciadri Camilla**, De Luigi Ada, Diomede Luisa, Bigini Paolo
Mario Negri Institute for Pharmacological Research IRCCS, Milan, Italy
Title: The relevance of surface charge for optimal cellular internalization of nanoparticles

26. **Monguzzi Angelo**, Kukushkina Ekaterina A., Villa Irene, Secchi Valeria, Colombo Alessandro, Colombo Miriam
University of Milano-Bicocca, Milan, Italy
Title: Dye-loaded hybrid core-shell gold nanoparticles for sensitized singlet oxygen production in radiotherapy

27. **Papalini Alessia**, Sgarbossa Antonella, Passaglia Elisa, Lorenz Chris, Brancolini Giorgia
CNR NANO Institute, Modena / University of Pavia, Pavia, Italy
Title: Molecular Mechanisms of Curcumin-Conjugated Phosphorene Nanoparticle Interactions with Gram-Negative Bacterial Membranes

28. **Petrucci Biancamaria**, Olimpieri T., Poerio N., Fraziano M.
University of Rome Tor Vergata, Rome, Italy
Title: Bioactive Liposomes for Host-Directed Therapy Against Mycobacterium abscessus: A Microfluidic Formulation Approach

29. **Santagada Domenico**, Garbujo Stefania, Colombo Miriam, Prosperi Davide
University of Milano-Bicocca, Milan, Italy
Title: Development and characterization of innovative biomimetic vectors for targeting triple-negative breast cancer: in vitro studies of cellular uptake

30. **Santamaria Federico**, Esposito Elisabetta, Bompan Francesca, Ragno Daniele, Contado Catia, Zauli Enrico, Melloni Elisabetta
University of Ferrara, Ferrara, Italy
Title: Development of Nutlin-3a Liposomes for Ophthalmic Administration via Microfluidic Technique

31. **Saygi Ayse Selin**, Erkoç Esra, Koçberber Kılıç Nur
Ankara University, Ankara, Turkey
Title: Green Synthesis of Silver Nanoparticles Using Ochrobactrum sp. and Evaluation of Their Antimicrobial Activity

32. **Siani Paulo**, Fiammengo Roberto, Di Valentin Cristiana
University of Milano-Bicocca, Milan, Italy
Title: Computational Design of Heterogeneous Coatings to Modulate Macrophage Uptake of Gold Nanoparticles

33. **Valer Zanabria Gabriela Paola**, Giustra Marco, Ochoa Evelyn, Bovio Federica, Forcella Matilde, Banfi Andrea, Prosperi Davide, Colombo Miriam
University of Milano-Bicocca, Milan, Italy
Title: Delivery of Curcumin-Loaded Polymeric Nanoparticles in Granulates for Oral Administration

34. **Yaseen Noor**, Raymundo Ojedo Tania, Luna Arias Juan Pedro
Instituto Politécnico Nacional, Mexico City, Mexico
Title: Cytotoxic and Metabolomic Characterization of Lactarius Indigo Extracts against Triple-Negative Breast Cancer Cells

35. **Berlati Francesca**, Cicala Francesca
Thermo Fisher Scientific, Monza, Italy
Title: Building a Robust End-to-End Manufacturing Process for mRNA-LNP Drug Products: Challenges, Solutions and Case Studies

36. **Rovelli Francesca**, Turdo Emanuela, Iaconelli Edoardo, Selis Fabio, Angelillo Alessia, De Rosa Giuseppe, De Beer Thomas, Salzano Giuseppina
Patheon (part of Thermo Fisher Scientific), Monza, Italy
Title: Shaping the Future of Lyophilization: Continuous Spin-Freeze-Drying for Next-Generation Therapeutics