

This year, the seventh edition of the “Research and Nanomedicine” Workshop is organized in hybrid format: both in presence in the CG1 Hall of the Chemistry Department (Viale Taramelli 12, Pavia) and live-streaming (YouTube). In addition to the young researchers from the University of Pavia, other young scientists from other universities have been invited to present their studies in order to promote the knowledge and the meeting between various groups that carry out research in the area of nanomedicine and 3Rs, with a view to enabling the birth of scientific collaborations, synergies, and participation in future projects. Two “invited talks” from the University of Pavia and the NOVA Medical School of the Universidade de Nova de Lisboa (Portugal), respectively. Furthermore, the workshop is divided into 2 sessions: the morning session is dedicated to Nano-therapies and Nano-diagnostics while the afternoon session is focused on Regenerative Medicine.

Thanks to:
HOEPLI and
APPLIED NANO

For technical support
Dr Elisa Restivo and Federico Dagostin



RESEARCH AND NANOMEDICINE

Seventh Edition

Edited by P. Pallavicini e L. Visai

Tuesday, June 13, 2023

Time 8:45 > 18:00

WORKSHOP IN ENGLISH

8:45 – Short introduction to the workshop:
Piersandro Pallavicini and Livia Visai

**First Session: Nano-diagnostics and Nano-therapeutics
– Chairman Piersandro Pallavicini**

9:00 – **Invited speaker:** Yuri Diaz Fernandez (Dept. Chemistry, University of Pavia, Pavia, Italy) “From single events to population analysis: emerging challenges of probing complex biointerfaces”

9:30 – Lavinia Rita Doveri (Dept. Chemistry, University of Pavia, Pavia, Italy) “Dual mode antibacterial surfaces based on Prussian Blue and silver nanoparticles”

9:50 – Mariella Rosalia (online) (Dept. Drug Sciences, Pharmaceutical Section, University of Pavia, Pavia, Italy) “Electrospun nanofibres for the extended release of tobramycin”

10:10 – Elisa Restivo (Dept. Molecular Medicine, Biochemistry Unit, University of Pavia, Pavia, Italy) “Completely human antibodies as potential vaccines against *Staphylococcus aureus* infections”

10:30 – Marialucia Rubicondo (Dept. PolitoBIOMed Lab, DIMEAS, Politecnico di Torino, Torino, Italy) “Design and optimization of polymeric nanoparticles for the delivery of a computationally designed novel colchicine derivative for cancer treatment”

10:50 – Cecilia Contardi (Dept. Drug Sciences, Pharmaceutical Section, University of Pavia, Pavia, Italy) “Glycan specific MIPs for cancer associated biomarkers”

10:50-11:10 *Coffee break*

11:10 – Sima Singh (online)(Dept. Pharmacy, University of Naples Federico II, Naples, Italy) “Facile and affordable design of MXene-Co₃O₄ based nanocomposites for detection of hydrogen peroxide in cancer cells: towards portable tool for cancer management”

11:30 – Maria Paola Demichelis (Dept. Chemistry, Physics Unit, and INFN, University of Pavia, Pavia, Italy) “Development of new 10B carriers for personalized-BNCT”

11:50 – Andrea Bezze (Dept. Mechanical and Aerospace Engineering, Politecnico di Torino, Turin, Italy) “Designing innovative platform for glioblastoma treatment: from nanomedicine to cell-mediated drug delivery”

12:10 – Cecilia Bagnera and Matteo Della Zoppa (online) (IRCCS Policlinico San Matteo UOS Transplant Center, Pavia and Columbia University Medical Center, Dept. Thoracic Surgery, New York (USA) and Resident at University of Pavia) “Assessment of an Innovative Liposomal Preparation: an Ex-Vivo Model of EMT and Precision-Cut Lung Slices of Pulmonary Fibrosis”

12:30 – Cristina Volpini (online)(Dept. Molecular Medicine, Biochemistry Unit, University of Pavia, and ICS Maugeri, Pavia, Italy) “Application of anti-CD44 gold nanoparticles for endometriosis photothermal therapy”

12:50-14:15 *Lunch break*

Second session: Regenerative Medicine – Chairman Livia Visai and Nora Bloise

14:15 – Francesca Cadamuro (online) (Dept. Biotechnology and Bioscience, University of Milano Bicocca, Milano, Italy) “3D bioprinted gastrointestinal models: the impact of ECM glycosignature in cell fate modulation”

14:35 – Rachele Rossi (Dept. Drug Sciences, Pharmaceutical Section, University of Pavia, Pavia, Italy) “Microfluidic synthesis and preliminary characterization of lipid nanoparticles for RNA delivery”

14:55 – Gaia Zucca (Dept. Drug Sciences, Pharmaceutical Section, University of Pavia, Pavia, Italy) “Design and development of chondroitin sulfate-chitosan based nanogels loaded with naringenin- β -cyclodextrin complex for the treatment of diabetic retinopathy”

15:15 Italian time – **Invited speaker:** João Conde (online) (Conde NanoLab, NOVA Medical School, Universidade Nova de Lisboa, Lisboa, Portugal) “Why go Nano in CANCER Healthcare? The landscape of Precision NANOMEDICINE”

15:45 – Giulia Maria Di Gravina (online)(Dept. Industrial and Information Engineering, University of Pavia, Pavia, Italy) “Biomechanical characterization of a silk fibroin-based bio-ink for 3d printing in tissue regeneration”

16:05 – 16:25 *Coffee break*

16:25 – Federica Barbugian (online) (Dept. Biotechnology and Biosciences, University of Milano-Bicocca, Milano, Italy and CURAM SFI Research Centre for Medical Devices, National University of Ireland Galway, Galway, Ireland) “Glioblastoma 3D in vitro models to decipher the role of ECM in tumor progression”

16:45 – Maddalena Bracchi (online) (Department of Biotechnology and Biosciences, University of Milano-Bicocca, Milan, Italy) “Mimicking extracellular matrix (ECM) features for meniscal regeneration: from biomolecular signatures to biomaterials design”

17:05 – Elena Delgrosso (Dept. of Clinical Surgical Sciences; integrated unit of experimental surgery, advanced microsurgery and regenerative medicine; University of Pavia, Pavia, Italy) “Realization of 3D constructs of osteosarcoma using the bioprinting technique as an alternative model for studies related to Boron Neutron Capture Therapy (BNCT)”

17:25 – Cristian Nomicisio (Dept. Drug Sciences, Pharmaceutical Section, University of Pavia, Pavia, Italy) “Polysaccharide-based microparticles doped with synthetic clays for skin tissue regeneration”

17:45 – Francesca Usai (online) (Dept. Industrial and Information Engineering, University of Pavia, Pavia, Italy) “Biofabrication of bacteria-laden biosensing materials for field-relevant applications”

17:45-18:00 – *Best Presentation Winners Ceremony*

18:00 – *Conclusions and end of the workshop*