

School of Nanomedicine 2022



Wednesday 08 June 2022 - Friday 10 June 2022

CNR, sede centrale

Scientific Programme

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Session 1: Nanomaterials for nanomedicine, June 8th

14:15 – 15:00 From Tissue Engineering to Regenerative Medicine, Ranieri Cancedda, University of Genova, Italy

15:00 – 15:45 Nanomaterials for the Repair of Spinal Cord Injury, Maurizio Prato, Department of Chemical and Pharmaceutical Sciences, Trieste University, Italy

15:45 - 16:15 Break

16:15 - 16:30 Industrial Clips: Quantum Design Italia, Nanoparticles characterization techniques: dimensions, physical and morphological properties

16:30 – 17:15 The chemistry-biology interplay emerging from molecule-coated nanoparticles, Fabrizio Mancin – University of Padova, Italy

17:15 – 18:00 Nanoparticles meet Organized soft assemblies : Challenges and opportunities for the biomedical field, Debora Berti – University of Firenze, Italy

Session 2: Tissue engineering, June 9th

9:00 – 09:45 3D Bioprinted tissue models by click chemistry approaches
Laura Russo, Università di Milano Bicocca, Italy

09:45 - 10:00 Industrial Clip T.E.E.S. srl, design and manufacture custom mechanical equipment for Scientific Research Laboratories

10:00 - 10:30 Break

10:30 – 11:15 Hybrid nanoparticles for biomedical applications, Luisa de Cola, University of Milano, Department DISFARM and Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Milano, Italy

11:15 - 12:00 Functional materials from living organisms, Gianluca Maria Farinola, Chemistry Department – University of Bari, Italy

12:00 – 12:45 Physics, spectroscopy and imaging applied to biology and medicine
Enzo di Fabrizio, DISAT Department, Turin Politecnico, Italy

Session 3: From bench to bed, June 10th

13:45 - 14:30 From Piazzale Tecchio to Wall Street: the short story of a long polymer hydrogel, Alessandro Sannino – Salento University, Italy

14:30 – 15:15 Supramolecular Approaches to Design Novel Antivirals, Francesco Stellacci – Institute of Materials, Ecole Polytechnique Fédérale de Lausanne (EPFL), Switzerland

Special session, June 9th, h. 16.00 - 18.00

****The human-machine relation and AI challenges for nanomedicine in the digital age****

Maria Chiara Carrozza – President of CNR & Massimo Durante – University of Torino

moderated by Giacomo Pisani – Euricse Researcher – Trento

Nanomedicine plays an increasingly central role in relevant processes that mainly involve the relation between humans and new technologies. Notably, the use of advanced software, capable of learning and acting in an ever more autonomous way, raises a series of issues that are matter of concern for both science and philosophy. Artificial intelligence has ignited a fruitful dialogue among scholars from different fields. The recognition and implementation of the right to “explanation” based on the GDPR is one of the issues of most concern, along with the limits of the traditional concept of “responsibility” when applied to machine learning algorithms, or the opacity of the so-called “algorithmic governmentality”. Equally troublesome is for individuals to have access, manage and protect their personal data, on the basis of which human autonomy and identity are today mostly build. These are highly topical issues, which also affect relevant aspect of nanomedicine. Think, for instance, of how these issues are deeply entrenched with the human-machine relation, the deployment of enabling technologies, and the progress of science. On the top of that, the construction and protection of our own identity are challenged by current technological surge. Against this backdrop, the seminar intends to encourage dialogue between science and philosophy, discussing some of the main challenges that nanomedicine faces in the new digital era.

<https://www.ba.ic.cnr.it/nanomedicine2022/index.php/special-session/>

Session 4: Therapeutics nanotechnological approaches, June 10th

9:00 – 09:45 Magnetic nanoparticles and clusters to combine magnetic hyperthermia with different therapeutic approaches, Teresa Pellegrino – Fondazione Istituto Italiano di Tecnologia, Genoa, Italy

09:45 – 10:30 Glycosylated Carbon Nanostructures for Emergent Viruses, Nazario Martin, Departamento de Química Orgánica, Facultad de Química, Universidad Complutense, Madrid, Spain

10:30 - 11:00 Break

11:00 – 11:45 Engineering 3D human tissues equivalent as reliable and predictive tools for clinical implementation of personalized and precision medicine, Paolo A. Netti – Center for Advanced Biomaterials for HealthCare@CRIB Istituto Italiano di Tecnologia, and CRIB, University of Naples Federico II, Napoli Italy

11:45 - 12:30 Current challenges in the understanding and treatment of Alzheimer's disease: limitation and perspective of nanomedical approaches, Maria Laura Giuffrida, CNR – Istituto di Cristallografia Catania, Italy

12:30 – 13:15 Nanoparticles in BNCT, Simonetta Geninatti, Crich PhD, Dipartimento di Biotecnologie Molecolari e Scienze per la Salute, Centro Imaging Molecolare, Università di Torino

13:15 - 13:30 Concluding remarks