

School



DESK

Sponsored by DeSK
TNE – Developing Shared Knowledge

Advanced training school on innovative materials

Advanced materials and biomaterials, AI-enabled design and characterization with emphasis on biointerfaces, tissue engineering and diagnostics.

May 11 – 13, 2026

Università degli Studi di Salerno
Convento «Santa Maria degli Angeli», Torchiati (AV)



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PIANO NAZIONALE DI RIPRESA E RESILIENZA



DESK

Responsive Biomaterials, Interfaces & Advanced Therapeutics

09:20–09:30

WELCOME

Welcome to the TNEdesk School

Stefano Piotto & Tomas Grigera

University of Salerno · Department of Pharmacy; University of La Plata · Instituto de Física de Líquidos y Sistemas Biológicos

09:30–10:30

LECTURE

Unraveling the Physical Chemistry of Responsive Hydrogels

Gabriel S. Longo

Institute of Theoretical and Applied Physicochemical Research (INIFTA), UNLP-CONICET, La Plata, Buenos Aires, Argentina

10:30–11:00

BREAK

Coffee break

11:00–12:00

LECTURE

Design of Interfaces in Field-Effect Devices for Biosensor Construction

Waldemar Marmisolle

Institute of Theoretical and Applied Physicochemical Research (INIFTA), UNLP-CONICET, La Plata, Buenos Aires, Argentina

12:00–13:00

LECTURE

Reticular Chemistry Tools and the Synthesis of Porous Materials (MOFs & COFs) for Sensing, Separation, and Catalysis Applications

Matías Rafti

Soft Matter Laboratory, FCE – Institute of Theoretical and Applied Physicochemical Research (INIFTA), UNLP-CONICET, La Plata, Buenos Aires, Argentina

13:00–14:30

LUNCH

14:30–15:20

LECTURE

New Biomaterials for Gene Delivery

Robert M. Waymouth

Department of Chemistry, Stanford University, CA

15:20–15:40

LECTURE

Hyaluronic acid. A short journey around a long polymer

Nicola Tirelli

Italian Institute of Technology, Genova, Italy

15:40–16:00

LECTURE

A novel adsorbent based on metal oxide functionalized hemp fibers to remove anionic dyes and anti-inflammatory drugs from water effluents

Gianluca Viscusi

Department of Industrial Engineering, University of Salerno, Italy

16:00–16:20

LECTURE

Multifunctional nanogels targeting persistent *Staphylococcus aureus*: a novel strategy for bovine mastitis

María Soledad Orellano
POLYMAT, Spain

16:20–16:50

BREAK

Coffee break

16:50–17:10

LECTURE

Dynamic Interfacial Nanopores: Real-time Regulation of Molecular Passage

Morteza Aramesh
Laboratory of Single-Molecule & Single-Cell Biophysics, Institute for Biomedical Engineering, ETH Zurich, Switzerland

17:10–17:30

LECTURE

Accelerated techniques and AI tools for the simulation of reaction mechanisms in biological systems

Stefano Leoni
School of Chemistry, Cardiff University, UK

17:30–17:50

LECTURE

CD44v6-targeted nanotherapy shapes the colorectal cancer immune landscape in combination with PD-L1 inhibition

Anna Baiao
Instituto de Investigação e Inovação em Saúde, Universidade do Porto, Portugal

17:50–18:10

LECTURE

UV-Induced Thiol-Limonene Reactions for the Development of Polyvinyl Butyral-Based Polymeric Networks

Nancy Ferrentino
Department of Science and Technology, University of Sannio, Benevento, Italy

18:10–18:17

SHORT LECTURE

Pollutant removal from wastewater by a functionalized membrane based on poly(2,6-dimethyl-1,4-phenylene)oxide (PPO)

Domenico Riccardi
Department of Chemistry and Biology, University of Salerno, Italy

18:17–18:24

SHORT LECTURE

Uniplanar crystalline phase orientation in PBS films

Angela Erbaggio
Department of Chemistry and Biology and INSTM Research Unit, University of Salerno, Italy

Nanoscale Characterization, Multiscale Modelling & Regenerative Materials

09:30–10:30

LECTURE

Sizing Up the Nanoworld: An Introduction to SAXS

Agustín S. Picco

Institute of Theoretical and Applied Physicochemical Research (INIFTA), UNLP-CONICET, La Plata, Buenos Aires, Argentina

10:30–11:00

BREAK

Coffee break

11:00–12:00

LECTURE

Multiscale Modelling Strategies for the Characterization and Design of Advanced Biomaterials

H. Ariel Alvarez

Institute of Physics of Liquids and Biological Systems (IFLYSIB), UNLP-CONICET, La Plata, Buenos Aires, Argentina

12:00–13:00

LECTURE

Computational Methods for the Design of Adsorptive and Separation Materials: From Molecular Simulations to Continuum Models

Alberto Albesa

Institute of Theoretical and Applied Physicochemical Research (INIFTA), Department of Chemistry, FCE, UNLP-CONICET, La Plata, Buenos Aires, Argentina

13:00–14:30

LUNCH

14:30–15:20

LECTURE

From Chemical Synthesis to Tissue Regeneration: Engineering Degradable Polymers and Scaffolds for Living Tissues

Anna Finne Wistrand

KTH Royal Institute of Technology, Fibre and Polymer Technology, Stockholm, Sweden

15:20–15:40

LECTURE

Polymer-to-Metal Approaches in 3D-Printed Scaffolds for Guided Tissue Engineering

Mónica Echeverry-Rendón

Materials Institute, Getafe, Spain

15:40–16:00

LECTURE

Engineering perfusion and oxygenation in 3D biofabricated tissue models for controlled transport and therapeutic evaluation

Armin S. Shavandi

Faculty of Engineering, Université libre de Bruxelles, Belgium

16:00–16:20

LECTURE

Revisiting Nanomaterial–Immune System Interactions through ECM-Mimetic Biomaterial Systems

Marianna Roca

Department of Chemistry and Biology, University of Salerno, Italy

16:20–16:50

BREAK

Coffee break

16:50–17:10

LECTURE

Hybrid Electrospun–Electrosprayed Nanoplatfoms for Localized Cancer Therapy

Bahareh Azimi

Department of Civil and Industrial Engineering, University of Pisa, Italy

17:10–17:30

LECTURE

Antimicrobial Activities of Plant Extract-Loaded Wound Dressing Films Against Bacterial and Parasitic Strains

Ziřan Toprak

Department of Bioengineering, Yıldız Technical University, Istanbul, Turkey

17:30–17:50

LECTURE

Engineering β -sheet peptide supramolecular hydrogels for biomedical applications

Alberto Saiani

Division of Pharmacy and Optometry & Manchester Institute of Biotechnology, School of Health Sciences, Faculty of Biology, Medicine and Health, The University of Manchester, UK

17:50–17:57

SHORT LECTURE

Lithium-charged gold nanoparticles encapsulated in liposomes as nanocarriers for biomedical applications

Nicolina Castagno

Department of Chemistry and Biology, University of Salerno, Italy

17:57–18:04

SHORT LECTURE

Engineering Tissue Interfaces via 3D Bioprinting and growth factor-loaded nanocarriers

Federica Montella

Department of Medicine, Surgery, and Dentistry “Scuola Medica Salernitana”, University of Salerno, Italy

18:04–18:11

SHORT LECTURE

Coated tablets containing BSA for colon targeting

Abir K. N. Morsi

PEGASO Doctoral School in Life Sciences, University of Siena, Italy

20:30–23:00

SCHOOL DINNER

TNEdesk School Dinner · Amo Restaurant Marina d'Arechi

Marina d'Arechi, Via Salvatore Allende, 84131 Salerno SA

Reservation is required

09:30–10:30

LECTURE

Brain Aging and Neurodegeneration: Biomaterial-Based Strategies for Brain Repair

Gustavo Morel

La Plata Institute of Biochemical Research (INIBIOLP), UNLP-CONICET, La Plata, Buenos Aires, Argentina

10:30–11:00

BREAK

Coffee break

11:00–12:00

LECTURE

Smart Artificial Systems for Health Applications

Fabio Mavelli

Department of Chemistry, University of Bari, Bari, Italy

12:00–13:00

LECTURE

AI-Driven Design of Biomaterials

Stefano Piotto

Department of Pharmacy, University of Salerno, Italy

13:00–14:30

LUNCH

14:30–14:50

INSTITUTIONAL LECTURE

Department of Pharmacy, University of Salerno, Italy

Stefano Piotto

Collaboration Pathways and Funding Opportunities in TNE

14:50–15:40

LECTURE

Living materials for advanced sustainable technologies

Gianluca Maria Farinola

Department of Chemistry, University of Bari, Italy

15:40–16:00

LECTURE

Bio-Based Dynamic Polymer Networks from PLA: Toward Sustainable and Recyclable Thermosetting Materials

Licia Gaeta

Department of Chemistry and Biology, University of Salerno, Italy

16:00–16:20

LECTURE

Zinc-complexes for the synthesis and chemical recycling of sustainable polyesters

Federica Santulli

Department of Chemistry and Biology, University of Salerno, Italy

16:20–16:40

LECTURE

Ultrafine electrospun fibers produced from furan-based copolymers

Saeed Ismaeilimoghadam

National Interuniversity Consortium for Materials Science and Technology (INSTM), Florence, Italy

16:40–17:10

BREAK

Coffee break

17:10–17:30

LECTURE

Nacre, mother of pearl, the queen of biomaterials is born as a liquid crystal

Julyan Cartwright

Instituto Andaluz de Ciencias de la Tierra CSIC, Universidad de Granada, Spain

17:30–17:50

LECTURE

Plasma Technology for Life Sciences

Pietro Favia

Department of Chemistry, University of Bari Aldo Moro and CNR Institute NANOTEC; Bari, Italy

17:50–18:10

LECTURE

Microporous water: how to relax diffusional barriers in reactions systems that include dissolved gasses as reactants

Matías Rafti

Institute of Theoretical and Applied Physicochemical Research (INIFTA), UNLP-CONICET, Argentina

18:10–18:17

SHORT LECTURE

Biobased Thermoset Networks via Ring Opening Copolymerization

A. Araiz Marquez

Department of Science and Technology, University of Benevento, Italy

18:17–18:24

SHORT LECTURE

A sustainable approach to 3D-printing: synthesis of polymacrolactone-based acrylate-free photoresins

Alfredo D'Elia

Department of Science and Technology, University of Benevento, Italy

18:24–18:30

CLOSING

Closing remarks

