



Marie Skłodowska-Curie Innovative Training Networks

**DIRNANO GA n° 956544: "Directing the immune response through designed nanomaterials" -
H2020-MSCA-ITN-2020**

WINTER SCHOOL

‘Material and nanomaterial surface characterization’

26, 27, 28 January 2022

Complesso Didattico di Biomedicina FIORE DI BOTTA

Scientific program

WEDNESDAY, 26 JANUARY

(room 1F)

11.00 am – 11.30 am Opening and Welcome

11.30 am – 1.00 pm ESRs workshop preparation

ESRs will be asked to prepare a flipchart on their project and what they need/would like to do in someone else lab.

1.00 pm – 2.30 pm Lunch break

2.30 pm – 5.30 pm ESRs workshop

ESRs' presentation of the posters. Interaction and discussion.

THURSDAY, 27 JANUARY

(room 1F)

9.30 am – 10.00 am Introduction and goal of the school

10.00 am – 10.45 am Lecture “Chemical characterisation of Surfaces” with Professor Nicholas Spencer – ETH Zürich

Surface analysis techniques such as XPS, ToF-SIMS, Elipsometry, QCM-D in combination with thin film and proteins uptakes.

10.45 am – 11.00 am Break

11.00 am – 11.45 am Second part of the Lecture “Chemical characterisation of Surfaces Double Lecture” with Professor Nicholas Spencer - ETH Zürich

11.45 am – 12.15 am Break

12.15 am – 1.00 pm Lecture “Binding chemistry to surfaces” with Dr. Stefan Zürcher - SuSoS AG

Self-assembling techniques, SAM, silane, Thiols, catechols, amine, polycationic polymers, thin films

1.00 pm – 2.30 pm Lunch break

2.30 pm – 3.15 pm Lecture “A review of Polymer functionalization of inorganic nanoparticles for biomedical applications” with Tobias Komsthöft - SuSoS AG ESR

Polymer coating; inorganic nanoparticles; coating strategies; biomedical applications; bioconjugation, surface engineering

3.15 pm – 3.30 pm Break

3.30 pm – 4.15 pm Lecture “Non-fouling coating” with Professor Edmondo Maria Benetti - Department of Chemical Sciences - University of Padova

PEG, oxazoline, dextran, zwitterionic

4.15 pm – 4.30 pm Break

4.30 pm – 5.15 pm Lecture *“Biofunctionalization chemistry at Surfaces”* with Dr. Pascal Jonkheijm - LipoCoat BV
Attaching biology onto surface. Site specific, site selective, control over orientation

FRIDAY, 28 JANUARY

(room 0A)

9.30 am – 10.15 am Lecture *“Strategies in bio-conjugation”* with Dr. Gianfranco Pasut - Department of Pharmaceutical and Pharmacological Sciences - University of Padova
Overview of the progresses on the bioconjugation of polymers to proteins by enzymes, with particular emphasis on transglutaminase.

10.15 am – 10.30 am Break

10.30 am – 11.15 am Lecture *“Nanoparticles immune- interactions”* with Professor Emanuele Papini - Department of Biomedical Sciences - University of Padova
Overview on the major/possible ways the immune system (especially the innate one) could “see” NP-coatings and react to them - why this is relevant for biomedical NPs effective design

11.15 am – 11.45 am Break

11.45 am – 12.30 am Meeting with Communication Strategy Advisor Professor Luca Trappolin - Department of Philosophy, Sociology, Education and Applied Psychology - University of Padova
Overview of all the Beneficiaries’ planned events in 2022 and presentation of the related communication strategy

12:30 am – 1.00 pm Closing remarks

1.00 pm – 2.30 pm Social Lunch

2.30 pm – 5.00 pm Social event
Visit to Bo Palace - Palazzo Bo, the main campus of the University of Padua located in the city's historical centre.