Nano/bio interfaces are crucial both for nanomedicine and as regards nanoparticles toxicity. The workshop will focus on emerging complementary tools and approaches developed to study how nano-objects interact with biological membranes: biomimetic and natural membranes, microfluidic technologies, biophysics of endocytosis, in silico studies, physical-chemistry of nano-objects and membranes.

**Monday, 18th November**

8h30-9h Welcome, Registration. 9h – Opening (Pierre Joseph, LAAS-CNRS, and Debora Berti, CSGI Florence)

9h15-10h Giovanna Fragneto – ILL, Grenoble
*Floating bilayers as planar models to study membrane-nanoparticle interactions and membrane protein function.*

10h-10h45 Coffee break / Posters

10h45-11h30. Stéphanie Mangenot – Curie Institute, Paris
*Shaping membrane with proteins: Deciphering mechanisms with in vitro system.*

11h30-12h15 Giulia Rossi – Univ Genova, Italy
*Monolayer-protected Au nanoparticles and their interactions with the biological environment: the role of ligand composition and conformation*

12h15 – 14h30 Lunch and poster session. 13h45-14h30 LAAS-CNRS Clean room visit (optional)

14h30-15h15 Clément Roux – IMRCP, University of Toulouse
*Experimental study of the interactions between polymer nanovectors and lipid membranes.*

15h15-16h Tom Robinson – Max Planck Institute, Postdam, Germany
*Microfluidic tools for synthetic biology and lipid membrane biophysics*

16h-16h45 Coffee break / Posters

16h45-17h45 Gladys Massiera & Laura Casanellas – Lab Charles Coulomb, Montpellier
*cDICE (Continuous Droplet Interface Crossing Encapsulation) as a tool to design biomimetic cells and tissues*

**Tuesday, 19th November**

8h45-9h30 Anna Salvati – Univ Groningen, Netherlands
*How do nanomedicines enter cells? Interactions at the cell membrane and endocytosis of nano-sized objects*

9h30-10h15 Tommy Nylander – Univ Lund, Sweden
*Non-lamellar lipid nanostructures at interfaces*

10h15-10h45 Coffee break /Posters

10h45-11h30 - Evert Haanappel – IPBS, Toulouse
*The conical shape of DIM lipids promotes Mycobacterium tuberculosis infection of macrophages*

11h30-12h15 Debora Berti (CSGI, Univ Florence, Italy): *Nanostructured materials interacting with synthetic and natural lipid mesophases: challenges and opportunities*

12h15 – Concluding Remarks

12h30 – 13h30 Lunch [LAAS]
Practical information

The conference will take place at LAAS-CNRS, 7, avenue du Colonel Roche, Toulouse.
Information to reach LAAS: https://www.laas.fr/public/en/node/147
The talks will be in Europe room, at LAAS
Coffee breaks and lunches will be served in LAAS Hall
Posters will be displayed in LAAS Hall during the coffee breaks and lunches.
Registration for LAAS clean-room visit on Monday (13h45) will be done on-site on Monday 18th.

List of Posters (displayed in LAAS Hall)

- **Anionic gold nanoparticles perturb phase-separation and form ordered lattices in multidomain lipid membranes**
  
  E. Canepa (UniGe), A. De Marco (UniGe), S. Salassi (UniGe), D. Bochicchio (UniGe), D. Odino (UniGe), C. Lambruschini (UniGe), R. Brescia (IIT, Genoa), F. Canepa (UniGe), S. Dante (IIT, Genoa), F. Stellacci (EPFL), A. Relini (UniGe), C. Canale (UniGe) and G. Rossi (UniGe)

  UniGe, IIt Genoa and EPFL, Lausanne

- **Curvature-induced domain formation in biomembranes**
  
  Julie Cornet, Matthieu Chavent, Manoel Manghi, Nicolas Destainville
  LPT, Toulouse

- **Understanding the efficiency of polymer-based nanocarriers for photodynamic therapy**
  
  IMRCP, Toulouse

- **Biomimetic membranes manipulation in microfluidics: Towards on-chip micropipette.**
  
  Marianne Elias, A Dutoya, A Laborde, A Lecestre, C Montis, L Caselli, D Berti, B Lonetti, C Roux, P Joseph
  LAAS-CNRS, IMRCP, Toulouse and CSGI, Univ Florence

- **Biomimetic nanostuctured materials as a tool to study cells and tissues.**
  
  M. FARNO, S. GROSSEMY, S. CADOT, A. QUILLET-MARY, D. CUSSAC, B. SALLERIN and S. GIROD FULLANA.
  CIRIMAT, Toulouse

- **Translocation of the cell penetrating peptide Penetratin through asymmetric model membranes formed by a microfluidic device: role of the lipids and transmembrane potential.**
  
  Pauline Gehan, Vincent Vivier, Kieu Ngo, Sandrine Sagan, Astrid Walrant, Sophie Cribier, Nicolas Rodriguez
  Sorbonne Université, Paris

- **Surface characterization of bacteria and biofilms by NAP-XPS,**
  
  Brice Hoff
  SPECS Nano Surface Analysis

- **Screening of the synthesis route on the structural, magnetic and magnetocaloric properties of La0.6Ca0.2Ba0.2MnO3 manganite: A comparison between solid-solid state process and a combination polyol process and Spark Plasma Sintering.**
  
  H. Ben Khifa, F. Ayadi, W. Cheikhrouhou-Koubaa, G. Schmerber
  Lab physique, LT25 (LR16 CNRS 01), Digital Research Center of Sfax, Sfax Technopark, Cité El Ons, Tunisia

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