EJTEMM

European Joint Theory/Experiment Meeting on Membranes
Ljubljana, Slovenia, January 28.-30. 2026

Location: Faculty of Electrical Engineering, Tržaška 25, Ljubljana

Web page: https://en.fe.uni-lj.si/ejtemm/

Book of abstracts: https://en.fe.uni-lj.si/ejtemm/submitted-abstracts/

Organizers: Veronika Kralj-Iglič and Aleš Iglič

(University of Ljubljana, Faculty of Health Sciences and Faculty of Electrical Engineering)

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Book of Abstracts

Concert Programme

PROGRAM

Wednesday, January 28th

- **9:00:** *Registration*
- **9:45–10:00:** *Opening*
- **10:00–11:30: SESSION 1: Membrane structure and curvature**
  Chairs: Judith Peters, Grenoble Alpes University; Stefan Knippenberg, Hasselt University
  10:00–10:25 Judith Peters: Polluted membranes under high pressure: A neutron scattering study
  10:25–10:50 Stefan Knippenberg: L88 fluorescence spectra of Laurdan probe in lipid bilayers: an interplay of temperature effects, hydration and conformational versality
  10:50–11:10 Samo Kralj: Simplicity and complexity of biological membranes
  11:10–11:30 Bartosz Rozycki: Multiscale simulations of biomembranes and membrane proteins
- **11:30–11:45:** *Coffee Break*
- **11:45–13:00: SESSION 1: Membrane structure and curvature**
  11:45–12:05 Matej Daniel: Membrane structure and curvature, electrical properties of membranes and cellular functions
  12:05–12:25 Magdalena Przybyło: Nucleic acid encapsulation in liposomes – new perspectives
  12:25–12:45 Luka Mesarec: The influence of concentration of curved rod-like molecules on equilibrium shapes of 2D shells
  12:45–13:00 Kinga Böde: Lipid Polymorphism of Light-Energy Converting Membranes: Current Concepts and Emerging Hypotheses
- **13.00–14.00:** *Lunch*
- **14.00–14.45: Plenary lecture I**
  Patricia Losada-Pérez: Spontaneous lipid transfer between organized assemblies studied via acoustic sensing
  Chair: Matej Daniel, Czech Technical University, Prague
- **14.50–17.05: SESSION 2: Membrane active proteins, dynamics and phase transitions**
  Chairs: Nir Gov, Weizmann Institute and University of Cambridge; Peter Nagy, University of Debrecen
  14:50–15:20 Nir Gov: Engulfment, pushing or biting: modelling the interactions between active membranes and soft objects
  15:20–15:50 Peter Nagy: The many layers of membrane biophysics: environment-sensitive fluorophores report on structural organization of biological membranes at various depths
  15:50–16:15 Mikulas Klenor: Charge-scaled force fields and their use for mechanistic insights into cell-penetrating peptide translocation
  16:15–16:40 Petra Čechová: Plasma membrane computational models and their effect on a TLR2 protein fragment
  16:40–17:05 George Cordoyiannis: QCM-D investigation of lipid phase transitions: Insights into the impact of substrates and nanoparticle-membrane interactions
- **17.15–18.15: Meeting of the EJTEMM International advisory board**
- **20.15–21.15:** *Concert* (location: Academy of Music, Kazina Palace, Julij Betetto Hall, Kongresni trg 1)
- **21.15–:** *Dinner (*location: Academy of Music, Kazina Palace, Kongresni trg 1)

Thursday, January 29th

- **9:00–9:45: Plenary lecture II**
  Irma Schabussova: Bacterial extracellular vesicles in host immune modulation: cargo, pathways and emerging concepts
  Chair: Gitta Schlosser, Eötvös Loránd University, Budapest
- **9:45–10:10:** *Coffee Break*
- **10:10–11:40: SESSION 3: Extracellular vesicles in health and disease**
  Chairs: Edit Buzas, Semmelweis University; Metka Lenassi, University of Ljubljana
  10:10–10:40 Edit Buzas: Challenging the debris dogma
  10:40–11:00 Matej Kanduč: How lipids suppress cavitation
  11:00–11:20 Annalisa Radeghieri: Probing the extracellular vesicle interface in near physiological environments
  11:20–11:40 Pietro Parisse: Cholesterol-mediated membrane fluidity affects nanovesicles uptake
- **11:40–12:00:** *Coffee Break*
- **12:00–13:20: SESSION 3: Extracellular vesicles in health and disease**
  12:00–12:20 Wolf Holnthoner: Extracellular vesicles in the vasculature - not only blood but also lymph
  12:20–12:40 Maja Kosanović: Interspecies communication via extracellular vesicles: a promising strategy for treating respiratory allergy
  12:40–13:00 Tamás Visnovitz: Heart failure-induced switch in EV secretion: from "torn bag mechanism" to MVE exocytosis
  13:00–13:10 Ana Kolenc: Production of extracellular vesicles from different mesenchymal stem cells and their effect on corneal epithelial cells
  13:10–13:20 Adéla Chadalíková: Atomistic insight into lipid nanoparticles' behaviour inside the target cell
- **13:20–14:20:** *Lunch*
- **14:20–15:40: SESSION 4: Extracellular particles**
  Chairs: Veronika Kralj-Iglič, University of Ljubljana; Gabriella Pocsfalvi, CNR Napoli
  14:20–14:40 Olga Sebestova Janouskova: Effect of isolation method to EVs membrane and content - influence to labeling, loading, macromolecules detection and downstream application of EVs
  14:40–15:00 Krisztina V. Vukman: Decoding mast cell extracellular particles: granules vs. vesicles
  15:00–15:20 Seppo Vainio: Species-derived extracellular vesicles as a novel bioaerosol type with multifaceted roles in the atmosphere
  15:20–15:40 Tamas Beke-Somfai: Supramolecular antibiotics that kill Gram-negative bacteria by mechanical force and extensive lysis of extracellular vesicles
- **15:40–15:55:** *Coffee Break*
- **15:55–17:30: SESSION 4: Extracellular particles**
  15:55–16:15 Fabrizio Cillo: Extracellular particles, Extracellular vesicles in health and disease
  16:15–16:30 James Parry: Count on complete EV characterization with Leprechaun
  16:30–16:50 Jason Otterstrom: Visualization of extracellular particles by fluorescence microscopy
  16:50–17:10 Gabriella Pocsfalvi: FarmEVs: plant cell culture platforms for extracellular vesicle production
  17:10–17:30 Veronika Kralj-Iglič: Membrane biophysics meets extracellular vesicles
- **17:30–18:00: Invited lecture**
  Sotirios Kiokias, European Research Executive Agency, Brussels (EU research funding opportunities, Horizon Europe/MSC Actions)
  Chair: Yelena Istileulova, University of Ljubljana
- **18:00–19:30: POSTER SESSION:**
  Chair: Fabrizio Cillo, The Italian National Council for Research (CNR) Bari
- **19:30–21:00:** *Dinner and poster session*

Friday, January 30th

- **9:45–10:30: Plenary lecture III**
  Michael Rappolt: Three-layered water organisation in the fluid phase of phospholipid self-assemblies
  Chair: Enrico F. Semeraro, University of Graz
- **10:30–12.30: SESSION 5: Lipid protein interactions**
  Chairs: Tamás Beke-Somfai, Institute of Materials and Environmental
  Chemistry (Budapest); Marek Langner, Wrocław University of Science and Technology
  10:30–10:50 Mario Vazdar: The addition of EDTA prevents the translocation of Arginine-rich cell-penetrating peptides in model lipid bilayer systems
  10:50–11:10 Aleksander Czogalla: The power of the collective: how signaling lipids recruit proteins to membranes
  11:10–11:30 Radek Šachl: Ganglioside nanodomains – a dynamic interaction platform in cell plasma membranes
  11:30–11:50 Christopher Aisenbrey: Organization of peptides within the lipid membrane
  11:50–12:10 Enrico F. Semeraro: Where are the bulk lipids? A combined multi-scale small angle scattering and computational study
  12:10–12:30 Ana Crnković: Tailoring natural pore forming proteins for nanopore technology
- **12:30–13:30:** *Lunch*
- **13:30–15:00: SESSION 6: Model membrane systems**
  Chairs: Patricia Losada-Pérez, Université Libre de Bruxelles; Michael Rappolt, University of Leeds
  13:30–13:50 Marketa Paloncyova: Lipid nanoparticles in coarse-grained resolution: From internal organization to interaction with cells
  13:50–14:05 Martin Eduardo Villanueva: Shaping the structure and properties of helical lipid nanotubes through bilayer compositional control
  14:05–14:20 Laure Bar: QCM-D study of gold nanoparticles and lipid membrane interactions: An interplay between charge and lipid phase
  14:20–14:35 Žiga Pandur: Membrane permeabilization and uptake kinetics of Eschericia coli induced by single-microbubble cavitation
  14:35–14:50 Marta Lavrič: Quality of supported lipid bilayers assessed by QCM-D
  14:50–15:00 Taoufiq Bourakadi: How to account for cell membrane complexity in passive permeation simulations?
  15:00–15:10 Ondřej Dlouhý: Ondřej Dlouhý: Extension of the dynamic matryoshka model to membranes containing non-bilayer lipids. Preliminary results using MD simulations and membrane neutron diffraction
  15:10–15:20 Sifre van Teeffelen: Main phase transition of hydroperoxidized SOPC bilayers
- **15.20–15.40:** *Coffee break*
- **15.40–17.30: SESSION 7: Electrical properties of membranes and cellular functions**
  Chairs: Aleš Iglič, University of Ljubljana; Matan Mussel, University of Haifa
  15:40–16:05 Lea Rems: Mechanisms of cell membrane electroporation probed through molecular dynamics simulations
  16:05–16:30 Alenka Maček Lebar: The comparison of the size and concentration of released EVs from CHO cells after electroporation with various pulse protocols
  16:30–16:55 Maxime Kucharski: The role of plasma membrane potential in the cellular homeostasis of ascorbate
  16:55–17:20 Matan Mussel: Oscillatory and excitability regimes in a protein-free lipid membrane
  17:20–17:45 Aleš Iglič: Orientational ordering of molecules and attractive interactions between like-charged membrane surfaces
- **17.45–18.00:** *Closing*