



The 4th Polish-Slovenian International Seminar on
26th - 27th January 2026
& 2nd February 2026

Soft Matter

SCIENTIFIC PROGRAM

ONLINE EDITION



The 4th Polish-Slovenian International Seminar on

26th - 27th January 2026



Schedule | 4th PSIS on Soft Matter

“Faces of Soft Matter”

1st DAY

January 26th

09:30 – 10:00 OPENING | INTRODUCTION

10:00 – 11:00

Ewa GÓRECKA _ OPENING LECTURE

SESSION I

Liquid Crystalline Anisotropic Soft Matter?

11:00 – 11:30

Microhydrodynamics of Nematic Liquid Crystals

Uroš Tkalec _ Slovenia

11:30 – 12:00

The Interplay Between Flexoelectricity and Electrostatic Effects in Antiferroelectric Nematic Liquids

Alenka Mertelj _ Slovenia

12:00 – 12:30

From Dual Frequency Nematics to Ferroelectric Twist-Bend Nematics - the Short Story

Przemysław Kula _ Poland

12:30 – 13:00

Chargeless Nematic Line Defects

Samo Kralj _ Slovenia



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SESSION II

Soft Materials & Phase Transitions

13:30 - 14:00

Soft Matter Characterization via Routine and Advanced Neutron Scattering

Wojciech Zajac _ Poland

14:00 - 14:30

Self-Shaping Liquid Crystal Soft Matter

Venkata Subba Rao Jampani _ Slovenia

14:30 - 15:00

Phase Transitions and Giant Caloric Effects in Anisotropic Soft Materials

Eva Klemencic _ Slovenia

15:00 - 15:30

Caloric Materials for New Heat-Management Technologies

Brigita Rožič _ Slovenia

SESSION III

Bridging Soft Matter & Materials Physics

15:30 - 16:00

Thermodynamic Theory of Dislocation-Mediated Plasticity

Alexander Umantsev _ USA

16:00 - 16:30

Depletion Forces Beyond the Diluted Limit

Ramon Castañeda-Priego _ Mexico

CLOSING REMARKS



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2nd DAY

January 27th

09:00 – 10:00

Aleš Iglič _ OPENING LECTURE

SESSION IV

Specific Complexity in Soft Materials

10:00 – 10:30

*The Formation of Supramolecular Chiral Materials from Achiral Molecules
Using a Liquid-Crystalline System*

Atsushi Yoshizawa _ Japan

10:30 – 11:00

Geometry and Field Dependent Percolation of Anisotropic Particles

Blaž Švajger _ Slovenia

11:00 – 11:30

Patterns and Complexity in High-Entropy Alloys

Andreja Jelen _ Slovenia

SESSION V

Biological & Living Soft Matter

11:30 – 12:00

Dielectric Probe in Intraoperative Breast Cancer Detection

Kazimierz Orzechowski _ Poland

12:00 – 12:30

*Mechanisms of Formation of Extracellular Particles: Vesiculation, Fragmentation,
and Extracellular Assembly*

Veronika Kralj-Iglic _ Slovenia

12:30 – 13:00

Fluidization Transitions in Soft Active Matter

Teboul Victor, Quoc Tuan Truong _ France



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SESSION VI

Population Growth & Soft Matter Dynamics

13:00 – 13:30

Nonlinear Local Event Dynamics: from Supercooled Liquids to Human Population Growth

Alessio Zaccone _ Italy

13:30 – 14:00

Complex Systems Perspective on Population Growth: A New Scaling Framework

Aleksandra Drozd-Rzoska _ Poland

14:00 – 14:30

Sylwester J. Rzoska _ CLOSING LECTURE

Soft Matter Under Compression – The New Philosopher's Stone

SUMMARY & OUTLOOK



Website: www.young4softmatter.pl

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The 4th Polish-Slovenian International Seminar on
Young 4 Soft Matter DAY
2nd February 2026



Young4SoftMatter DAY

SCHEDULE

ONLINE EDITION



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The 4th Polish-Slovenian International Seminar on
Young 4 Soft Matter DAY
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‘Young 4 Soft Matter’ DAY

10:00 – 10:30

Aleksandra Drozd-Rzoska _ OPENING LECTURE

ORAL Presentations

10:40 – 11:00

Global Population, Carrying Capacity, and High Quality Foods

Agata Angelika Sojecka _ Poland

11:00 – 11:20

Phase Equilibria in Mixtures with Limited Miscibility – New Perspective

Jakub Kalabinski _ Poland

11:20 – 11:40

*High Pressure Treatment of Sodium Olivine-Like Glass: Increased Conductivity
in the Possible Future Cathode Material*

Aleksander Szpakiewicz-Szatan _ Poland

11:40 – 12:00

*Structural Properties of V_2O_5 Glasses Compressed under High Pressure. Combined
Experimental and Computational Study*

Adam Puchalski _ Poland

12:00 – 12:20

*Si-doped $Na_2VFe_2(PO_4)_3$ Nanocrystalline Alluaudites as Prospective Cathodes
for Sodium-Ion Batteries*

Martyna Jankowska _ Poland

12:20 – 12:45 BREAK



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POSTER Presentations – part I

12:45 – 13:00

Socio & Econophysics View on Population Changes in Industrial Revolution Era

Agata Angelika Sojecka _ Poland

13:00 – 13:15

Phase Behaviour of Twist-Bend Nematic Phase

Maha Zid _ Slovenia

13:15 – 13:30

Optimization of Liquid Crystal Materials for Photo- and Thermomechanically Responsive Elastomers

Milena Ježak

13:30 – 13:45

Visualizing Order Parameter Spaces And Topological Defects in Ordered Media

Jaka Sgerm, Marcel Kodrin _ Slovenia

13:45 – 14:00

Non-linear dielectric response for Menthol Solutions

Kewin Żmigrodzki _ Poland

14:00 – 14:15

Liquid Droplet Simulations for Material Exploration

Tim Javornik _ Slovenia

14:15 – 14:30

Dielectric Properties of Reverse Micelles Formed by Nonionic Surfactants

Sara Helscher _ Poland

14:30 – 14:45

Synthesis, Properties, and Enantioseparation of Four-Ring Racemic Smectics

Edyta Wojda _ Poland

14:45 – 15:00

Phase Transitions and Electrical Properties Of High-Pressure High Temperature Treated Bismuth Oxide-Based Material

Aleksander Szpakiewicz-Szatan _ Poland

15:00 – 15:15 BREAK



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POSTER Presentations – part II

15:15 – 15:30

Exceptional Points in Non-Hermitian Metasurfaces

Anja Ribaš _ Slovenia

15:30 – 15:45

Synthesis and Investigation of Mesophase, Optical, and Spectral Properties of Thieno [3,2-b]thiophene-Based Liquid Crystals.

Małgorzata Bakiera _ Poland

15:45 – 16:00

Self-assembled benzo[b]thiophene liquid crystals with designed dielectric properties for GHz applications

Agnieszka Mieczkowska _ Poland

16:00 – 16:15

Fabrication of complex-shaped colloids via selective microfluidic trapping

Tine Krajnc _ Slovenia

16:15 – 16:30

Liotropic Phases of DNA

Melani Potrč _ Slovenia

16:30 – 16:45

In situ observation of the nanocrystallisation process in vanadate glasses in the XAS synchrotron experiment

Martyna Jankowska _ Poland

16:45– 17:00

Broadband Dielectric Spectroscopy Investigation of E7 Liquid Crystal with BaTiO₃ and C₆₀ Nanoparticles

Mateusz Kotowski _ Poland

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Scientific Committee of the 4th PSIS on SM 2026

“Faces of Soft Matter”

Assist. Prof. Dr. Brigita Rožič – Institut “Jožef Stefan” | Jozef Stefan Institute, Slovenia

Red. Prof. Dr. Robert Repnik – Univerza v Mariboru | University of Maribor, Slovenia

Prof. dr hab. Sylwester J. Rzoska – Institute of High Pressure Physics “Unipress” PAS, Poland



Organizing Committee of the 4th PSIS on SM 2026

“Faces of Soft Matter”

Agata Angelika Sojecka – University of Economics in Katowice, Poland

Melani Potrč – University of Maribor, Slovenia

Jakub Kalabiński – Institute of High Pressure Physics “Unipress” PAS, Poland

Aleksander Szpakiewicz-Szatan – Institute of High Pressure Physics “Unipress” PAS, Poland

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