

22 September			Sunday
from 12.00		Registration	
11.00–13.30		Wrocław–Wojanów Bus Transfer	
13.30–15.00		Lunch	
15.00–15.10		<b>Opening Ceremony</b>	
<b>Session I: Interactions and Calculations</b>			<b>Chair: Rui Fausto</b>
15.10–15.40	I-1	<b>Małgorzata Biczysko</b>	<b>Vibrational fingerprints of weak interactions from fully anharmonic computations: success and challenges</b>
15.40–16.00	O-1	Ehud Pines	Structure of protonated water clusters in acetonitrile
16.00–16.20	O-2	Justinas Ceponkus	Conformations of valeric acid in noble gas and pH <sub>2</sub> matrices
16.20–16.50		Coffee	
<b>Session II: Matrix Isolation</b>			<b>Chair: Małgorzata Biczysko</b>
16.50–17.20	I-2	<b>Rui Fausto</b>	<b>Tunneling-driven and vibrationally-induced chemistries: Last news from Coimbra!</b>
17.20–17.40	O-3	Magdalena Saldyka	UV-induced photodecomposition of matrix isolated salicylhydroxamic acid: identification of new isocyanate complexes
17.40–18.00	O-4	Robert Medel	Matrix isolation spectroscopy of fluorine compounds
19.00–22.00		Barbecue	

23 September			Monday
<b>Session III: Bioapplications I</b>			<b>Chair: H. Michael Heise</b>
9.00–9.30	I-3	<b>Halina Abramczyk</b>	<b>A new modality for cancer tracking – Raman imaging, fluorescence and AFM studies combined with AI analysis</b>
9.30–9.50	O-5	Himanshu Ojha	Molecular spectroscopic studies of silylated graphene oxide interaction with model proteins bovine serum albumin and pepsin
9.50–10.10	O-6	Joanna Nowak-Karnowska	Oligonucleotide probe with 5-fluoro-4-thiouridine for photocrosslinking with DNA target and binding to streptavidin support
10.10–10.30	O-7	Aleksandra Wesołucha-Birczyńska	Multi-wavelength Raman studies of bactericidal coatings applied to fibrous substrates
10.30–10.50		Coffee	
<b>Session IV: Bioapplications II</b>			<b>Chair: Halina Abramczyk</b>
10.50–11.20	I-4	<b>H. Michael Heise</b>	<b>ATR-FTIR spectroscopy of cells from a human monocyte cell line with stimulation by insulin – opportunities for a cellular-based insulin bioactivity assay</b>
11.20–11.40	O-8	Dominika Święch	Comprehensive characterization of modified metallic surfaces for biomedical applications

11.40–12.00	O-9	Aleksandra Kurek	Analysis of red blood cells from individuals with allergy symptoms using Raman spectroscopy
12.00–12.20	O-10	Sylwester Mazurek	Diagnosing different types of arthritis using vibrational spectroscopy
12.20–12.40	O-11	Jakub Dybas	Interaction of endothelium-derived NO with red blood cells – tracking of hemoglobin adducts with resonance Raman spectroscopy
12.40–13.40			Lunch
<b>Session V: Earth Science and Cultural Heritage</b>			<b>Chair: Aleksandra Wajda</b>
13.40–14.10	I-5	Rosa C. Ponterio	<b>A step forward the sustainability: design and applications of flexible and low cost Surface Enhanced Raman Spectroscopy (SERS) sensors from waste cellulose</b>
14.10–14.30	O-12	Maja Mroczkowska-Szerszeń	Application of statistical clustering methods in IR spectral discrimination of fossil resins of various provenance
14.30–14.50	O-13	Magdalena Gawęda	Amorphous silicon oxycarbide-based protective coatings for nuclear applications – spectroscopic and microstructural studies
14.50–15.05	O-14	Agnieszka Sozańska	Simultaneous in situ Raman and SEM imaging
15.15–19.15			Excursion: Sky Walk – Trail in the Clouds – Świeradów Zdrój
19.30–20.30			Dinner

<b>24 September</b>			<b>Tuesday</b>
<b>Session VI: Optical Materials</b>			<b>Chair: Ivan Němec</b>
9.00–9.30	I-6	Jan Zaręba	<b>Monitoring structural phase transitions in hybrid compounds using nonlinear optical responses</b>
9.30–9.50	O-15	Magdalena Leśniak	Structural study of the laser-induced crystallization in tellurite-phosphate glass
9.50–10.10	O-16	Robert Tomala	Preparation and luminescent properties of phosphors for high CRI white LED
10.10–10.30	O-17	Dominika Gruszkowska	Spectroscopic properties of cocomplexes of europium with phenanthroline family and diketone based ligands
10.30–10.50	O-18	Piotr Żemojtel	Tuning of the spectroscopic properties of semiconductor nanorings by size
10.50–11.20			Coffee
<b>Session VII: Materials</b>			<b>Chair: Jan Zaręba</b>
11.20–11.50	I-7	Ivan Němec	<b>Spectroscopic, structural and optical characterization of molecular crystals based on heteroaromatic carries of NLO properties</b>
11.50–12.10	O-19	Miroslaw Mączka	Vibrational properties and mechanism of phase transitions in lead iodide perovskites comprising $\text{OH}(\text{CH}_2)_n\text{NH}_3^+$ cations (n=2,3)
12.10–12.30	O-20	Kinga Suchorab	Oxidation kinetics of zirconium and its alloys – impact of stabilisation factors on the zirconium oxide polymorphs
12.30–12.50	O-21	Mallika Pathak	Magnetic <i>tagetis erecta</i> biochar ( $\gamma\text{-Fe}_2\text{O}_3\text{-TEB}$ ) for efficient removal of cationic dye from wastewater: A sustainable and economical approach
12.50–13.10	O-22	Ewa Pięta	The role of adaptogens in cervical cancer therapy: High-definition vibrational spectroscopic imaging at the single-cell level
13.10–14.30			Lunch

**Session VIII: Methods**

Chair: Rosa C. Ponterio

14.30–15.00	I-8	Aleksandra Wajda	Vibrational Optical Activity – a unique tool for studying supramolecular systems
15.00–15.20	O-23	Łukasz Pięta	A novel approach for highly sensitive Raman spectroscopy – PIERS
15.20–15.40	O-24	Anna Kołodziej	The 2D correlation spectroscopy (2D-COS) study of polycaprolactone-hydroxyapatite composites bioactivity
15.40–16.00	O-25	Vitalii Boiko	Determination of structural transformation in transparent $Y_3Al_5O_{12}$ ceramics in the process of chromium recharging
16.00–16.20	O-26	Karolina Haupa	FTIR spectrometers are like cars. Learn how to select the best for you ( <i>Bruker</i> )
16.20–18.30			Coffee
16.30–18.30			Poster Session
19.30–20.30			Conference Dinner

**ISSSMC Conference 2024 Program**Galyna Puchkovska International School-Seminar  
Spectroscopy of Molecules and Crystals

24 September ISSSMC Online

Tuesday

**Session online I: Molecules & Molecular Interactions**Chair: **Andrii Kadashchuk**

10.00–10.25	IGP-1	Mykhailo Bondar	Linear photophysics, fast vibronic relaxations and two-photon absorption properties of new coumarin derivatives
10.25–10.50	IGP-2	Vytautas Klimavicius	Solid-state NMR of phosphate based functional materials
10.50–11.05	OGP-1	Olena Gnatyuk	Vibrational and imaging markers of circulating metastatic cells based on the Lewis lung carcinoma cell line
11.05–11.30			Coffee Break

**Session online II: Liquid Crystals & New Materials**Chair: **Taras Mykytiuk**

11.30–11.55	IGP-3	Longin N. Lisetskii	Induced and spontaneous nanostructuring in liquid crystal colloidal systems for display and sensor applications
11.55–12.20	IGP-4	A. Demchenko	Molecular machines powered by electronic excitation
12.20–12.35	OGP-2	E. Manuilov	Effect of tin and tin-carbon dopants on physicochemical properties and photocatalytic behavior of $TiO_2$ in hydrogen production reaction
12.35–14.30			Lunch Break

**Session online III: Biological Systems**Chair: **Nataliia Bashmakova**

14.30–14.55	IGP-5	S. Yefimova	ROS-regulating nanomaterials
14.55–15.20	IGP-6	G. Rudko	Luminophores for luminescent solar concentrators
15.20–15.35	OGP-3	L. Brizhik	Soliton mediated long-range electron transport in donor—alpha-helix-acceptor systems
15.35–15.50	OGP-4	Valeriia Ovdenko	Nonlinear optical properties of azo-naphthols with a pyridine nitrogen atom: theoretical and experimental study
15.50–16.05	OGP-5	Grygorii Monastyrskyi	$WS_2$ and $MoS_2$ 2D nanoparticles as inducers of changes in liposome formation and spectroscopic properties

**Session IX: ISSSMC – New materials & Nanosystems****Chair: Svitlana Bugaychuk**

8.30–8.55	IGP-7	Marek Drozd	Phases transition phenomena in highly sensitive luminescence nanothermometry
8.55–9.20	IGP-8	Alexander Krivchikov	Heat capacity of molecular crystals with different types of disorder
9.20–9.45	IGP-9	Alexander Kadashchuk	Triplet-triplet annihilation mechanism of intrinsic charge-carrier generation in neat organic semiconductors
9.45–10.10	IGP-10	Galina Dovbeshko	War-derived air pollution based on carbon-containing smoke nanoparticles with Fe and Cu metal compounds: physical chemical property, and neurotoxicity risk assessment
10.10–10.25	OGP-6	Yuriy Hizhnyi	Luminescence mechanisms in oxide glass-ceramic composites: insights from electronic structure calculations
10.25–10.40			Coffee

**Session X: ISSSMC – Methods & Applications****Chair: Alexander Krivchikov**

10.40–11.05	IGP-11	Svitlana Bugaychuk	Optical dielectric spectroscopy associated with plasmonic resonance in LC nanocomposites with gold nanoparticles
11.05–11.30	IGP-12	Taras Mykytiuk	Making 10nm nano-holes for trapping light by mixing monolayers of gold and silver nanoparticles
11.30–11.45	OGP-7	Nataliia Bashmakova	Spectral properties of two pyrrolopyridine derivatives synthesized from citric acid and urea
11.45–12.00	OGP-8	Mariia Kyrpa	Electronic structure and UV-Vis spectroscopy of mesoionic compounds
12.00–12.15	OGP-9	Vlada Pashynska	Noncovalent complexes of dimethyl sulfoxide with anti-cancer thioderivatives of purine nucleobases: model mass spectrometry and quantum chemical study on molecular mechanisms of transmembrane drug delivery facilitation

12.15–12.30 Closing Ceremony and Awards

12.30–13.30 Lunch

13.45–15.45 Wojanów–Wrocław Bus Transfer

**ISSSMC-2024 Poster Session** will be held online. The poster presentations will be available at <https://issmc.org.ua> on September 22-25, 2024. Over those days, you will be able to look through the PDF presentations and submit your written questions to the authors by email; the authors will be asked to check it periodically and respond to your questions.