

# FINAL PROGRAMME

WITH CONNECTION AND PRESENCE TESTING SCHEDULE FOR PRESENTERS AND CHAIRMEN  
PLEASE JOIN THE CONFERENCE VIA LINK AT LEAST 10 MINUTES BEFORE THE BLOCK OF TALKS YOU ARE PARTICIPATING IN

## MONDAY, JUNE 14, 2021

9:30 - 9:40 - Connection testing

9:40 – 10:20	<b>Opening Ceremony</b> D. Galusek, T. Wágner
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### TOPIC 1: Advances in solid state materials synthesis, new solids and compounds

*chairperson: D. Galusek*

10:20 – 10:30	<b>IUPAC</b> J. Garcia Martinez
10:30 – 11:10	<b>Hierarchical Zeolites as Superior Cracking Catalysts</b> <b>KeyL</b> J. Garcia Martinez

11:10 – 11:30 *BREAK*

11:20 - 11:30 - Connection testing *chairperson: J. Kraxner*

11:30 – 11:50	<b>Pd-Cu Bimetallic Based Catalysts for Nitrate Reduction in Water</b> M. Rachini, M. Jaafar, F. Al Ali, Z. Sleiman, A. Hayek, M. Kassem, E. Bychkov, T. Jean Daou, J. Toufaily, T. Hamieh
11:50 – 12:10	<b>Synthesis, Structural and Optical Properties of Zinc Titanite for Selective Sensing of Heavy Metal Ions</b> A. Dasan, R. Selwin-Joseyphus, M. Akansha, J. Pushparajan, S. N. Tom, K. Johnson
12:10 – 12:30	<b>Elimination of carbon from sol-gel prepared YAG precursor</b> M. Micháľková, A. Prnová, M. Mokhtar, H. Páľková, J. Kraxner, D. Galusek

12:30 – 14:00 *LUNCH*

### FunGlass Symposium

13:50 - 14:00 - Connection testing *chairperson: Y. Castro*

14:00 – 14:20	<b>FunGlass research activities - an overview</b> D. Galusek
14:20 – 14:40	<b>Preparation and characterization of electrospun composite fibers with mesoporous bioactive glass nanoparticles: the effect of the amount of nanoparticles and Cu-doping on cell proliferation</b> S. Sengupta, L. Liverani, M. Micháľek, H. Kaňková, D. Galusek, A. R. Boccaccini
14:40 – 15:00	<b>Preparation and characterization of Chitosan-Zn complex films for wound healing applications</b> N. Mutlu, L. Liverani, F. Kurtuldu, D. Galusek, A. R. Boccaccini
15:00 – 15:20	<b>Analysis of the hydrophobic character and reflectance in SiO<sub>2</sub> and SiO<sub>2</sub>-TiO<sub>2</sub> coatings obtained by sol-gel method</b> A. H. Haritha, A. Plško, K. Faturíková, A. Duran, D. Galusek, Y. Castro, J. J. Velázquez
15:20 – 15:40	<b>Structure and Fluorescence Properties of Dy doped Borophosphate Glasses</b> K. Griebenow, F. Munoz, N.S. Tagiara, R. Klement, A. Prnova, B. Wolfrum, E.I. Kamitsos, A. Duran, D. Galusek

15:40 – 16:00 *BREAK*

<b>15:50 - 16:00</b>	<b>- Connection testing</b> <i>chairperson: J. J. Velázquez</i>
16:00 – 16:20	<b>Additive manufacturing of Ca-Mg silicate scaffolds supported by flame-synthesized glass microspheres</b> <u>J. Kraxner</u> , H. Elsayed, A. Dasan, M. Hujová, M. Michálek, E. Bernardo, D. Galusek
16:20 – 16:40	<b>Assessment of Alkali activation for Producing Porous Glass Microspheres</b> <u>M. Mahmoud</u> , J. Kraxner, E. Bernardo, D. Galusek
16:40 – 17:00	<b>Preparation and characterization of PEO/sol–gel composite coatings for corrosion protection of Mg alloys</b> <u>E. Merino</u> , A. Durán, Y. Castro
17:00 – 17:20	<b>Transparent Nd<sup>3+</sup>-doped LaF<sub>3</sub>-SiO<sub>2</sub> glass ceramics films produced by sol-gel and using nano-crystalline suspensions</b> <u>M. E. Cruz</u> , Y. Castro, R. Balda, A. Durán
17:20 – 17:40	<b>Spark plasma sintering and optical properties of Tm doped NaLaF<sub>4</sub> transparent glass- ceramics</b> <u>M. Sedano</u> , R. Balda, J. Fernández, S. Babu, D. Galusek, A. Durán, M. J. Pascual

**TUESDAY, JUNE 15, 2021**

**V4 Research Day**

**SESSION I**

**TOPIC 2: Materials and processes of data storage**

<b>8:50 - 9:00</b>	<b>- Connection testing</b> <i>chairperson: R. Mazzarello</i>
9:00 – 9:30	<b>Phase Change Memory Materials by Design</b> <b>InvL01</b> <u>M. Wuttig</u>
9:30 – 10:00	<b>Switching dynamics of phase change memory devices — from materials physics on the nanoscale to beyond-von-Neumann computing</b> <b>InvL02</b> <u>M. Salinga</u>
10:00 – 10:30	<b>Phase change memory materials: Why do Ge/Sb/Te alloys dominate?</b> <b>InvL03</b> <u>R. O. Jones</u>

10:30 – 10:50 *BREAK*

**TOPIC 3: Advanced glasses, ceramics and polymeric materials and nano materials**

<b>10:40-10:50</b>	<b>- Connection testing</b> <i>chairperson: M. Wuttig</i>
10:50 – 11:20	<b>Structural heterogeneity of glassy materials</b> <b>InvL04</b> <u>L. Wondraczek</u>
11:20 – 11:50	<b>Low-frequency light scattering and intermediate range order structures in borate glasses</b> <b>InvL05</b> <u>A. A. Osipov</u> , L. M. Osipova
11:50 – 12:10	<b>Polarization-dependent birefringence in sodium borate glasses induced by femtosecond laser pulses</b> <u>S. S. Fedotov</u> , A. S. Lipatiev, T. O. Lipatieva, S. V. Lotarev, V. N. Sigaev
12:10 – 12:30	<b>Femtosecond laser patterning of crystalline tracks in lithium niobium germanate glasses</b> <u>S. V. Lotarev</u> , T. O. Lipateva, A. S. Lipatiev, S. S. Fedotov, V. N. Sigaev

12:30 – 14:00		LUNCH
13:50 - 14:00		- Connection testing <i>chairperson: E. Bernardo</i>
14:00 – 14:30	<b>The chemistry of melting oxynitride phosphate glasses</b>	
<b>InvL08</b>	<u>F. Muñoz</u>	
14:30 – 14:50	<b>Structure and magnetic properties of Bi-doped CaO-Al<sub>2</sub>O<sub>3</sub>-SiO<sub>2</sub> glass microspheres</b>	<u>M. Majerová</u> , M. Škrátek, B. Hruška, H. Pálková, A. Dvurečenskij, P. Švančárek, A. Prnová, A. Cigáň, J. Kraxner, J. Maňka, D. Galusek
14:50 – 15:10	<b>HP, RHP and SPS of Al<sub>2</sub>O<sub>3</sub> – Y<sub>2</sub>O<sub>3</sub> glass microspheres: sintering conditions, grain size, and mechanical properties of sintered ceramics</b>	<u>A. Prnová</u> , J. Valúchová, M. Parchovianský, M. Majerová, P. Švančárek, O. Hanzel, D. Galusek

15:10 – 15:30		BREAK
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15:20 - 15:30		- Connection testing <i>chairperson: F. Muñoz</i>
15:30 – 16:00	<b>Advanced Glass Up-Cycling by Alkali Activation</b>	
<b>InvL09</b>	<u>M. Hujová</u> , D. Ramteke, D. Galusek, P. Colombo, <u>E. Bernardo</u>	
16:00 – 16:20	<b>Sol-gel synthesis and upconversion properties of nanocrystalline Er<sup>3+</sup>-doped Yb<sub>3</sub>Ga<sub>5</sub>O<sub>12</sub></b>	
	<u>T. Netolický</u> , L. Strizik, T. Wagner, L. Benes, K. Melanova, S. Slang	
16:20 – 16:40	<b>Effect of solvent and catalyst types on stability and properties of zinc phthalocyanine in the hybrid glass</b>	
	<u>B. Popanda</u> , M. Šroda, M. Reben	
16:40 – 17:00	<b>Influence of glassy powder compaction on the properties of sintered glass-ceramic materials</b>	
	<u>K. Rzepa</u> , W. Wons, M. Reben	

## SESSION II

### TOPIC 4: Functional materials

8:50 - 9:00		- Connection testing <i>chairperson: M. Reben</i>
9:00 – 9:30	<b>Linear and nonlinear optical properties in glasses managed at the micrometer scale by an imprinting thermo-electrical process</b> - <u>M. Dussauze</u> , L. Karam, R. Alvarado, A. Goillot, F. Adamietz, V. Rodriguez, K. Richardson, G. S. Murugan, T. Cardinal, E. Fargin	
<b>InvL06</b>		
9:30 – 9:50	<b>Surface Mobility in Amorphous Selenium and its Similarities to Organic Molecular Glasses</b>	
	<u>J. Barták</u> , M. Kurka, M. D. Ediger, L. Yu	
9:50 – 10:10	<b>Sodium ion-doped chalcogenide glasses in the thioarsenate Na<sub>2</sub>S-As<sub>2</sub>S<sub>3</sub> system</b>	
	T. Bounazef, <u>M. Kassem</u> , M. Bokova, E. Bychkov	
10:10 – 10:30	<b>Lead sulphide PbS-As<sub>2</sub>S<sub>3</sub> chalcogenide glass system: macroscopic, electric and structural properties</b>	
	<u>B. Alrifaj</u> , M. Kassem, M. Bokova, J. Toufaily, E. Bychkov	

10:30 – 10:50		BREAK
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10:40-10:50		- Connection testing <i>chairperson: M. Michálek</i>
10:50 – 11:20	<b>Strong emission at 1000 nm from Pr<sup>3+</sup>/Yb<sup>3+</sup>-codoped multicomponent tellurite glass</b>	
<b>InvL07</b>	B. Burtan- Gwizdala, <u>M. Reben</u> , J. Cisowski, E. S. Yousef, N. Nosidlak	
11:20 – 11:40	<b>Structural features in mercury thioarsenate glasses and their relation to various properties</b>	
	<u>M. Kassem</u> , A. Sokolov, A. Cuisset, S. Khaoulani, M. Bokova, E. Bychkov	

**10:40 - 10:50 - Connection testing**

11:40 – 12:00	<b>Ionic transport and structural features of alkali halide doped Ga<sub>2</sub>S<sub>3</sub>-GeS<sub>2</sub> glasses</b> <u>M. Bokova</u> , A. Paraskiva, M. Kassem, E. Bychkov
12:00 – 12:20	<b>Energy transfer from silver to rare-earth ions (Er, Tm, Ho) and near-infrared photoluminescence enhancement in zinc-silicate glasses</b> P. Vařák, P. Nekvindová, S. Vytykáčová, A. Michalcová, P. Malinský, J. Oswald

12:20 – 14:00 *LUNCH***13:50 - 14:00 - Connection testing** *chairperson: R. O. Jones*

14:00 – 14:30	<b>Materials screening for Anderson localization in disordered chalcogenides</b> <b>InvL10</b> <u>R. Mazzarello</u>
14:30 – 14:50	<b>Er<sup>3+</sup>/Yb<sup>3+</sup> co-doped oxyfluoro-tellurite glasses: Investigation of excited state dynamics and optical temperature sensing based on FIR technique</b> <u>R. Dagupati</u> , R. Klement, J. J. Velázquez, D. Galusek
14:50 – 15:10	<b>Intrinsic and activated thermoluminescence in LiMgPO<sub>4</sub>:RE</b> <u>M. O. Kalinkin</u> , R. Abashev, A. Surdo, D. Kellerman

15:10 – 15:30 *BREAK***15:20 - 15:30 - Connection testing** *chairperson: M. Dussauze*

15:30 – 16:00	<b>Intriguing light effects on ion transport in hybrid halide perovskites</b> <b>InvL11</b> <u>A. Senocrate</u> , G. Y. Kim, T. Y. Yang, G. Gregori, M. Grätzel, J. Maier
16:00 – 16:30	<b>Ion Transport in Li<sub>2</sub>O and Li<sub>2</sub>S</b> <b>InvL12</b> S. Lorgier, <u>R. Usiskin</u> , J. Maier
16:30 – 16:50	<b>Resistive switching with metal doped chalcogenide thin film</b> <u>T. Wagner</u> , B. Zhang
16:50 – 17:10	<b>Solution processed chalcogenide glass thin films</b> <u>K. Palka</u> , S. Slang, J. Jancalek, M. Kurka, M. Vlcek

**WEDNESDAY, JUNE 16, 2021****SESSION I****TOPIC 5: Advanced characterisation techniques****8:50 - 9:00 - Connection testing** *chairperson: D. Galusková*

9:00 – 9:30	<b>Glass surface inspected by the microscopic and spectroscopic methods</b> <b>InvL13</b> <u>O. Gedeon</u> , J. Macháček, T. Gavenda, M. Liška, M. Chromčíková, K. Jurek, P. Jiříček, J. Zemek
9:30 – 10:00	<b>3D ED for structure determination of inorganic materials</b> <b>InvL14</b> <u>M. Klementová</u> , L. Palatinus
10:00 – 10:20	<b>Investigation of surface-enhanced Raman scattering on gold nanoislands substrates with different geometrical parameters and analytes</b> <u>P. Pál</u> , A. Bonyár, M. Veres, L. Juhász, I. Csarnovics

8:50 - 9:00 - Connection testing

10:20 – 10:40	<b>Raman / Second Harmonic Generation Correlative Imaging</b>  <u>M. Dussauze</u> , F. Adamietz, V. Rodriguez
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10:40 – 11:10 *BREAK*

## TOPIC 6: Materials for renewable energy production and storage

11:00 - 11:10 - Connection testing *chairperson: O. Gedeon*

11:10 – 11:40	<b>Yet another new frontier for photovoltaic power generation: Selectively absorbing highly transparent organic photovoltaic solar cells</b> <u>S. Oktik</u>
11:40 – 12:10	<b>Polymer-derived SiCH organic-inorganic hybrid membranes for solar hydrogen production via photoelectrochemical water-splitting</b> <u>Y. Iwamoto</u> , M. Kubo, S. Bernard, S. Honda, Y. Daiko
12:10 – 12:30	<b>Alluaudite molybdates as perspective materials for sodium-ion batteries</b>  <u>A. V. Serdtsev</u> , N. I. Medvedeva, D. V. Suetin

12:30 – 14:00 *LUNCH*

## TOPIC 7: Additive manufacturing

13:50 - 14:00 - Connection testing *chairperson: M. Žitňan*

14:00 – 14:30	<b>Additive Manufacturing of Ceramics using Pre ceramic Polymers</b>  <u>P. Colombo</u>
14:30 – 14:50	<b>Present state of 3D printing from glass</b>  <u>V. Hotař</u> , M. Stará

14:50 – 15:00 *BREAK*

## FROM BRAIN DRAIN TO BRAIN GAIN

14:50 - 15:00 - Connection testing *chairperson: P. Hošťák*

15:00 – 17:30	Workshop
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## SESSION II

## TOPIC 8: 2D materials, surfaces, interfaces, hybrid- and nanostructured solids

8:50 - 9:00 - Connection testing *chairperson: M. Michálková*

9:00 – 9:30	<b>Hybrid Layered Double Hydroxide Materials: an adapted functionalized filler in a sustainable approach</b> <u>F. Leroux</u>
9:30 – 9:50	<b>Application of holographic lithography for material surface direct nanostructuring</b>  <u>J. Teteris</u>
9:50 – 10:10	<b>Plasmonic nanostructures for photonic applications</b>  <u>I. Csarnovics</u> , A. Bonyár, M. Veres, P. Pál, G. Szántó, L. Juhász, J. Burunkova, S. Kökényesi

8:50 - 9:00 - Connection testing

10:10 – 10:30	<b>Hydrothermal corrosion of polymer derived glass/ceramic coatings</b> <u>I. Parchovianská</u> , M. Parchovianský, P. Švančárek, H. Kaňková, G. Motz, D. Galusek
10:30 – 10:50	<b>High-temperature oxidation behaviour of PDC coatings</b> <u>M. Parchovianský</u> , I. Parchovianská, P. Švančárek, D. Medved', G. Motz, D. Galusek

10:50 – 11:10 BREAK

11:00 - 11:10 - Connection testing

chairperson: F. Leroux

11:10 – 11:40	<b>From novel oxide thin film matter to device application: SrMoO<sub>3</sub> as highly conducting perovskite enabling agile and energy efficient all-oxide high frequency devices</b> <b>InvL18</b> <u>L. Alff</u> , P. Salg, L. Zeinar, L. Molina-Luna, D. Walk, A. Zintler, R. Jakoby, H. Maune, P. Komissinskiy
11:40 – 12:00	<b>Preparation of protective coatings using polyorganosilazane-derived precursors and cerium as inhibitor to obtain an active protection of Al alloys</b> <u>U. K. Aruchamy</u> , A. Durán, Y. Castro, D. Galusek
12:00 – 12:20	<b>Examination of the Hydrogen Incorporation into Radio Frequency Sputtered Hydrogenated SiNx Thin Films</b> <u>N. Hegedüs</u> , C. Balázs, K. Balázs
12:20 – 12:40	<b>Ink-jet printing of sol-gel based wide band-gap material</b> <u>M. Žitňan</u> , M. Blaško, J. J. Velázquez, L. Müller, D. Galusek, L. Wondraczek

## THURSDAY, JUNE 17, 2021

### TOPIC 9: Biomaterials

8:50 - 9:00 - Connection testing

chairperson: K. Balázs

9:00 – 9:30	<b>Ion doped bioactive glasses with enhanced functionalities</b> <b>InvL20</b> <u>A. R. Boccaccini</u>
9:30 – 9:50	<b>Cu and Sr doped Mesoporous Bioactive Glass: A preliminary study</b> <u>A. Anand</u> , A. Švančárková, H. Kaňková, D. Galusková, D. Galusek, A. R. Boccaccini
9:50 – 10:10	<b>Layered rare earth hydroxide nanoparticles for theranostics</b> <u>M. Strimaite</u> , C. L. G. Harman, H. Duan, Y. Wang, G. R. Williams, G. L. Davies

10:10 – 10:30 BREAK

10:20 - 10:30 - Connection testing

chairperson: A. R. Boccaccini

10:30 – 11:00	<b>Novel Si<sub>3</sub>N<sub>4</sub>/Si<sub>3</sub>N<sub>4</sub>- graphene / hydroxyapatite layered gradient composites</b> <b>InvL21</b> <u>K. Balázs</u> , C. Balázs
11:00 – 11:20	<b>Development of functional sol-gel coatings on titanium with broad-spectrum properties</b> <u>D. Horkavcová</u> , K. Švagrová, E. Jablonská, P. Novák, A. Helebrant
11:20 – 11:40	<b>Antimicrobial Soda Lime Silicate Glass Produced by Multi-step Ion Exchange</b> <u>A. Talimian</u> , A. Nowicka, H. Kanková, D. Galusková, D. Galusek
11:40 – 12:00	<b>Closing Ceremony</b> <i>Young Scientist Poster Award</i> D. Galusek

**POSTER SESSION**  
**June 14 – 16, 2021**

<b>P-01</b>	<p><b>Behavior of molybdenum in calcium phosphate glasses</b></p> <p><u>M. Chládková</u>, J. Holubová, Z. Černošek</p>
<b>P-02</b>	<p><b>Borate and silicate glasses doped with Ce<sup>3+</sup> and Mn<sup>2+</sup> ions for UV-VIS spectral shifting</b></p> <p>J. Volf, P. Vařák, J. Cajzl, P. Nekvindová</p>
<b>P-03</b>	<p><b>Isomorphic Substitutions in the Electron-Ion Conductor Pr<sub>5</sub>Mo<sub>3</sub>O<sub>16+δ</sub></b></p> <p><u>L. I. Ardanova</u>, K. A. Chebyshev, E. I. Get'man, A. V. Ignatov, L. V. Pasechnik, N. I. Selikova</p>
<b>P-04</b>	<p><b>Precipitation of cobalt molybdates on activated carbons for catalytic applications</b></p> <p><u>M. Zgrzebnicki</u>, A. Albrecht, A. Jurkowski, P. Adamski</p>
<b>P-05</b>	<p><b>Influence of various annealing atmospheres on excitonic and defect photoluminescence properties of single-crystal ZnO</b></p> <p><u>K. Jeníčková</u>, J. Cajzl, P. Nekvindová, A. Macková</p>
<b>P-06</b>	<p><b>Preparation of spin-coated thin film using mixtures of separately dissolved chalcogenide glasses of various compositions</b></p> <p><u>J. Jancalek</u>, S. Slang, K. Palka, M. Kurka, M. Vlcek</p>
<b>P-07</b>	<p><b>Model Description of the Viscosity of Glass-Forming Chalcogenides</b></p> <p><u>M. Aniya</u>, M. Ikeda</p>
<b>P-08</b>	<p><b>TMA measurements of the viscous flow changes in glasses induced by illumination</b></p> <p><u>J. Smolík</u>, Z. Zmrhalová, P. Knotek, E. Černošková, J. Schwarz, L. Tichý</p>
<b>P-09</b>	<p><b>Ion implantation of Gd, Er and Au into various crystallographic cuts of ZnO single crystals - structural vs. photoluminescence properties</b></p> <p>P. Nekvindová, <u>J. Cajzl</u>, K. Jeníčková, A. Jagerová, A. Macková, J. Oswald, U. Kentsch</p>
<b>P-10</b>	<p><b>Solid state synthesis and characterization of La<sub>2</sub>Ce<sub>2</sub>O<sub>7</sub> powder as a candidate material for thermal barrier coatings</b></p> <p><u>I. Parchovianská</u>, M. Parchovianský, A. Nowicka, A. Prnová, A. Pakseresht</p>
<b>P-11</b>	<p><b>Solid-state synthesis and <i>in vitro</i> characterization of Mg-doped ZrO<sub>2</sub> bioceramics for dental applications</b></p> <p><u>L. Bizo</u>, M. Mureşan-Pop, R. Barabás, A. Berar</p>
<b>P-12</b>	<p><b>The influence of test conditions on zinc release from the 45S5 bioactive glass</b></p> <p><u>A. Švančárková</u>, D. Galusková, H. Kaňková, D. Galusek</p>
<b>P-13</b>	<p><b>Machine Learning Analysis of Microwave Dielectric Properties for Seven Structure Types: The Role of the Processing and Composition</b></p> <p><u>N. Kireeva</u>, V. P. Solov'ev</p>