

SOLID STATE CHEMISTRY 2018

FINAL PROGRAMME

SUNDAY, SEPTEMBER 16, 2018

15:00 - 19:00 **Registration**

19:00 - 19:40 **Attractive new chemistry of aluminum and silicon**

PT 01 H. W. Roesky

20:00 - 22:00 **Welcome Drink**

MONDAY, SEPTEMBER 17, 2018

chairperson: T. Wagner

09:00 - 09:20 **Opening Session**

Tomas Wagner

09:20 - 10:00 **Shining a light on disease with mid-infrared fibreoptics (Lecture dedication to Prof. Miloslav Frumar)**

PT 02 A. B. Seddon, L. Sojka, T. M. Benson, D. Furniss, Z. Q. Tang, H. Parnell, D. Jayasuriya, Y. Fang¹, M. Shen, S. Sujecki

10:00 - 10:20 Coffee Break

SESSION I

chairperson: M. Vlček

10:20 - 10:50 **Dispersion management and several octaves supercontinuum generation in infrared crystals, bulk glasses or nonlinear optical fibres**

InvT 01 F. Smektala, A. Lemièrre, P. Froidevaux, F. Désévéday, B. Kibler, J.-C. Jules, P. Mathey, G. Gadret

10:50 - 11:20 **Especially pure chalcogenide glasses. Preparation, optical properties, applications**

InvT 02 M.F. Churbanov, V.G. Plotnichenko, I.V. Scripachev, L.A. Ketkova, A. Velmuzhov

11:20 - 11:40 **Fused chalcogenide fiber couplers: modeling and fabrication**

B. Stepanov, O. Benderov, T. Tebeneva, G. Snopatin, A. Ignatov, M. Spiridonov, I. Scripachev

11:40 - 12:00 **GeSbSe chalcogenide glass thermal properties and stability for fabrication of microstructured optical fibers**

S. Wu, S. C. Fleming, B.T. Kuhlmeier, J.G. Hayashi, H. Ebendorff-Heidepriem, A. Stefani

12:00 - 12:20 **Synthesis and applications of 1D inorganic nano- and microfibers**

L. Hromádko, E. Koudelková, R. Bulánek, J.M. Macák

12:20 - 13:20 Lunch

SESSION I

chairperson: A. Seddon

13:20 - 13:40 **Electric field-induced softening (EFIS) of alkali silicate glasses**

Ch. McLaren, W. Heffner, B. Roling, R. Raj, N. Smith, H. Jain

13:40 - 14:00 **Ion beam patterning in As-Se amorphous layers**

S. Molnar, R. Bohdan, I. Rajta, Gy. Nagy, S. Kokenyesi

14:00 - 14:20 **Surface relief grating recording in amorphous chalcogenide and azobenzene compounds**

J. Teteris

14:20 - 14:40 **Vacuum evaporated vs. spin coated chalcogenide glass thin films for diffractive optics fabrication**

M. Vlček, K. Palka, S. Slang, L. Loghina, A. Iakovleva, M. Grinco

14:40 - 15:00 **Highly transparent high-refractive index tellurite glass film via a non-hydrolytic sol-gel route**

X. Z. Pan, J. B. Zhao, G. J. Qian, X. Z. Zhang, Y. L. Ruan, H. Ebendorff-Heidepriem

15:00 - 15:20 **Ultrafast laser-induced nanogratings in alkali silicate and germanate glasses**

S.V. Lotarev, S.S. Fedotov, A.I. Kurina, A.S. Lipatiev, M.Yu. Presnyakov, V.N. Sigaev

15:20 - 15:40 **Peculiarities of direct surface patterning using As₂S₃: Mn nanomultilayer structure**

O. Paiuk, A. Meshalkin, A. Stronski, E. Achimova, V. Abashkin, L. Revutska, A. Prisacar, G. Triduh, P. Oleksenko, A. Korchovyj

15:40 - 16:00 **Overview of applications with TESCAN FIB-SEMs in Mmaterial, semiconductors and life sciences**

P. Klímek

16:00 - 16:20 **AFM/SEM integration and Correlative Probe and Electron Microscopy (CPEM™) – an innovative approach to correlative imaging**

J. Neuman, Z. Nováček, M. Pavera

SESSION II		chairperson: M. Aniya
10:20 - 10:50	Resistive switching structures for memory and logic applications	
InvT 03	K. Fröhlich, I. Kundrata, M. Blaho, M. Precner, M. Ťapajna, B. Hudec, I-T. Wang, W-L. Lai, C-C. Chang, T-H. Hou, M. Klimo, O. Šuch, O. Škvarek	
10:50 - 11:20	Kinetics of silver photodiffusion into Ge chalcogenides: review of the neutron reflectivity measurement	
InvT 04	Y. Sakaguchi, T. Hanashima, H. Aoki, H. Asaoka, M. Mitkova	
11:20 - 11:40	Resistive switching with chalcogenide thin film	
	B. Zhang, T. Wagner	
11:40 - 12:00	Printed RRAM and WORM memory structures	
	T. Syrový, J. Beránek, L. Syrová, M. Krbal, T. Wagner	

12:20 - 13:20 Lunch

SESSION II		chairperson: Y. Sakaguchi
13:20 - 13:50	Fast and slow ionic transport in chalcogenide glasses: structural description, spectroscopic and diffusion evidence	
InvT 05	E. Bychkov	
13:50 - 14:20	Bonding character and ionic conductivity in solid electrolytes	
InvT 06	M. Aniya	
14:20 - 14:40	Electrical impedance spectroscopy II - Principles and applications	
	P. Viscor	
14:40 - 15:00	How silver influences the structure and physical properties of chalcogenide glass (GeS₂)₅₀(Sb₂S₃)₅₀	
	M. Fraenk, Z. Frumarova, V. Podzemna, S. Slang, M. Vlček, L. Beneš, T. Wagner	
15:00 - 15:20	Ionic transport and structural properties of the chalcogenide AgI-HgS-GeS₂ glasses	
	R. Zaiter, M. Kassem, E. Bychkov	
15:20 - 15:40	The influence of anionic doping on transport properties of Ba₂In₂O₅ and Ba₂CaNbO_{5.5}	
	N. Tarasova, I. Animitsa	

16:30 - 18:30	POSTER SESSION I	
	A series of Ni(II) complexes with pseudo(halide) coligands and their effect to magnetic properties	
	D. Lomjanský, C. Rajnák, J. Titiš, J. Moncol, L. Smolko, R. Boča	
	Field supported slow magnetic relaxation in octahedral-tetrahedral systems [Co(dppm^{0,0})₃]²⁺[CoX₄]²⁻	
	C. Rajnák, J. Moncol, J. Titiš, R. Boča	
	Bulk synthesis and Raman study of misfit layer compounds in the ternary systems V-Se-Bi, V-Se-Pb and V-Se-Sn	
	G. R. Reisinger, D. Baurecht, K. W. Richter	
	A comparative study of the preparation of separately and cogrown USY/ZSM-5 zeolites from kaolin and its use as fluid catalytic cracking catalysts	
	Y. Gherib, N. Frini-Srasra, E. Srasra, J. Martinez-Triguero, A. Corma	
	Blue-, green-emitting gradient alloyed Cd-Zn-S-Se quantum dots: the temperature influence on the size and optical properties	
	M. Grinco, L. Loghina, S. Slang, A. Iakovleva, K. Palka, M. Vlcek	
	Effect of reaction conditions on optical properties of Cd_{0.1}Zn_{0.9}Se_{0.1}S_{0.9} quantum dots, capped by biologically active ligands	
	L. Loghina, M. Grinco, A. Iakovleva, S. Slang, K. Palka, M. Vlcek	
	Chemical synthesis of a temperature and pH-sensitive copolymer material by applying the supercritical fluid processing	
	M. Tang, S. L. Ho, Y. P. Chen	
	Characterization of the modulated g phase field in the Sb-Te System	
	S. Solé, C. Schmetterer, K.W. Richter	
	Formation of micronized solid pharmaceutical particles using the supercritical anti-solvent technology	
	Y. P. Chen, M. Tang, S. L. Ho	
	Synthesis, thermal stability and corrosion properties of pure and substituted hydroxyapatite	
	L. Šimková, P. Šulcová	
	TiO₂ microrods with stacked 3D nanovoids for photoelectrochemical water splitting	
	F. Mamon, S. Bakardjieva, E. Koci, I. Jakubec, R. Fajgar, T. Brovdjova	
	Enhanced photocatalytic degradation of Bisphenol A induced by densely packed nanocavities inside 2D TiO₂ nanosheets	
	J. Mares, S. Bakardjieva, E. Koci, A. Zhigunov, T. Brovdjova, E. Chatzisyneon, K. Davididou	

	Surface chemistry of modified geopolymers: amount and nature of acid sites Z. Tišler, K. Marklová, Y. Ghrib, J. Vaculík, R. Bulánek
	The LiPO₃ effect on formation and crystallization of the re doped fluorozirconate glasses V.K. Goncharuk, V.Ya. Kavun, I.G. Maslennikova, V.E. Silant'ev, A.G. Mirochnik
	Light beam induced surface patterning in amorphous chalcogenides I. Csarnovics, P. Nemeč, P. Hawlova, M. Veres, A. Bonyár, J. Kámán, S. Kökényesi
	Structure, oxygen nonstoichiometry and properties of the complex oxides in the Ln–M–Fe–Co–o (Ln =Pr, Sm; M = Sr, Ba) system N.E. Volkova, L.V. Khvostova, A.E. Makarova, D.U. Khalmirzaeva, V.A. Cherepanov
	Ion mobility and conductivity in the bismuth fluoride-containing solid solutions with tysonite-type structure V.Ya. Kavun, A.B. Slobodyuk, E.B. Merkulov, M.M. Polyantsev, V.K. Goncharuk
	Synthesis and proton conductivity of polyantimonic acid, doped with vanadium ions Yu.A. Lupitskaya, L.Yu. Kovalenko, F.A. Yaroshenko, E.A. Bulaeva, E.M. Filonenko
	Synthesis and Characterization of Novel Multinary Selenides Sn₄In₅Sb₉Se₂₅ and Sn_{6.16}Pb_{1.84}In_{5.00}Sb_{10.14}Bi_{2.86}Se₃₅ G.-R. Chen, M.-F. Wang, Ch.-S. Lee
	Solution processed Ge₂₀Sb₅S₇₅ thin films – the effect of solution concentration and multiple layers stacking S. Slang, P. Janicek, K. Palka, M. Vlcek
	Investigation of Copper incorporation into CdS thin films and its influence on optical properties A. Iakovleva, L. Loghina, S. Slang, M. Grinco, K. Palka, M. Vlcek
	Deposition of As₃₀Se₇₀ thin films using multi-component solvent K. Palka, S. Slang, P. Janicek, M. Grinco, M. Vlcek
	Towards alkylsilyl- and alkylstanylselenide precursors for ALD J. Charvot, F. Bureš, J. Macák
	Ge-Sb-Te thin films fabricated by co-sputtering M. Bouška, S. Normani, V. Nazabal, P. Švanda, J. Gutwirth, P. Němec
	A kinetic and mechanistic study into the transformation of calcium sulfate hemihydrate to dihydrate S.J. Gurgul, G.R. Williams, G. Seng
	Crystal and defect structure of the layered perovskite-type solid oxides Ln_{2-ε}Ba_{3+ε}Fe_{5-x}CoxO_{15-δ} (Ln = Y, Sm; ε = 0, 0.125; x = 0–2) and Gd_{0.365}Ba_{0.635}Fe_{1-y}CoyO_{3-δ} (y = 0–0.2) M.Yu. Mychinko, A.V. Bryuzgina, I.B. Golovachev, E.I. Zyaykin, A. S. Urusova, N.E. Volkova, V. A. Cherepanov
	The effect of temperature in synthesis of gradient alloyed CdSe_{0.2}S_{0.8} quantum dots P. Placek, L. Loghina, S. Slang, K. Palka, M. Vlcek
	Crystallization and amorphization of Ge₂Sb₂Te₅ thin films by nanosecond single laser pulse P. Lazarenko, M. Savelyev, S. Kozyukhin, A. Sherchenkov, A. Gerasimenko, V. Glukhenkaya, A. Babich, A. Polohin
	Spectroscopic ellipsometry characterization of non-stoichiometric indium zinc tin oxide thin films M. Putri, K. H. Kim, H. J. Lee, P. Janicek, J. Mistrik, S. Slang, H. Y. Lee
	Intense visible upconversion and infrared emission in GeGaS: Er³⁺/Ho³⁺ glass under 980 nm excitation D. Himics, L. Strizik, J. Oswald, J. Holubova, S. Slang, B. Frumarova, T. Wagner
	The effect of micro-constituent phases on corrosion and mechanical property of Cu-22wt%Sn alloy H.S. Kim, M.G. Kim, Ch.S. Lee, G. Kim, J.G. Yoon, J.H. Han
	Tailoring the surface chemistry of activated carbon by modification with heteropolyacids D. Bajuk-Bogdanović, M. Vujković, Z. Jovanović, Ž. Mravik, I. Holclajtner-Antunović, S. Uskoković-Marković

TUESDAY, SEPTEMBER 18, 2018

chairperson: S. Elliott

09:00 - 09:40 **Van der Waals chalcogenide superlattices for advanced applications**

PT 03

A.V. Kolobov, P. Fons, Y. Saito, K. Mitrofanov, J. Tominaga

09:40 - 10:20 Coffee Break

SESSION I

chairperson: J.-L. Adam

10:20 - 10:50 **Beyond graphene – layered pnictogens and transition metal chalcogenides**

InvT 07

Z. Sofer

10:50 - 11:20	2-D transition metal dichalcogenides for energy conversion applications InvT 08 <u>S. N. Yannopoulos</u> , A. Antonelou, G. Syrokostas, G. Leftheriotis
11:20 - 11:40	Giving function to covalently functionalized CVD graphene <u>M. Kalbac</u> , P. Kovaricek, Z. Bastl, T. Verhagen, J. Vejpravova
11:40 - 12:00	2D materials and their interfaces: role of strain and charge <u>O. Frank</u>
12:00 - 12:20	Fluorographene chemistry: broadening the family and scope of graphene derivatives <u>A. Bakandritsos</u> , D.D. Chronopoulos, P. Jakubec, R. Zbořil, M. Otyepka

12:20 - 13:20 Lunch

SESSION I		<i>chairperson: J. M. Macák</i>
13:20 - 13:50	Functionalization of nanostructured titania electrodes for Li-ion microbatteries InvT 11 <u>T. Djenizian</u>	
13:50 - 14:10	Layered gadolinium hydroxides for simultaneous drug delivery and imaging Y. Xu, A. Goyanes, Y. Wang, A.J. Weston, P.-W. So, C.F.G.C. Geraldes, A. M. Fogg, A. W. Basit, <u>G. R. Williams</u>	
14:10 - 14:30	Atomic layer deposition for modifications of high-aspect ratio nanostructures <u>J. Prikryl</u> , R. Zazpe, M. Krbal, H. Sopha, J. M. Macak	
14:30 - 14:50	Bismuth based nanostructures – synthesis, characterization and application <u>H. Sopha</u> , J. M. Macak	
14:50 - 15:10	Structure and properties of composite nanoparticles based on ZnO-CeO₂ system decorated by silver <u>O. Gorban</u> , I. Danilenko, G. Volkova, S. Gorban, O. Viagin, I. Bryukhanova, T. Konstantinova, S. Lyubchik	
15:10 - 15:30	TiO₂ nanotube layers modified by chalcogenides <u>M. Krbal</u> , H. Sopha, R. Zazpe, J. Prikryl, J. M. Macak	
15:30 - 15:50	In-situ crystallization of amorphous carbon on the surface of TiO₂ for better electrochemical performances via a combined mechanochemical - thermal route <u>M. Senna</u> , N. Takezawa, H. Kobayashi, N. Suzuki	
15:50 - 16:10	Barium titanate nanoparticles for advanced composite dielectric layers applied in flexible field-effect transistors <u>F. Piana</u> , B. Paruzel, J. Pflieger, R. Jambor, T. Řičica, J. M. Macák	

SESSION II		<i>chairperson: H. Jain</i>
10:20 - 10:50	Design strategies for sulphide thermoelectrics InvT 09 <u>A.V. Powell</u> , S. Long, S. Hull, P. Vaqueiro	
10:50 - 11:20	Frequency and time domain photoelectronic studies of a-Se InvT 10 <u>R.J. Curry</u> , J. Jacobs, G. Belev, S. O. Kasap	
11:20 - 11:40	Extraordinary behavior of tetradymites doped with transition metals <u>P. Cermak</u> , P. Ruleova, V. Holy, L. Benes, K. Palka, J. Prokleska, C. Drasar	
11:40 - 12:00	Single crystalline SnSe doped with As and its interaction with native defects <u>K. Sraitrova</u> , V. Kucek, T. Plechacek, C. Drasar	
12:00 - 12:20	Wide bandgap photovoltaic chalcogenides: crystal and thin films materials <u>A. Thomere</u> , C. Guillot-Deudon, N. Barreau, R. Bodeux, M. T. Caldes, A. Lafond	

12:20 - 13:20 Lunch

SESSION II		<i>chairperson: A. Powell</i>
13:20 - 13:40	Synthesis and characterization of alkaline earth – rare earth – borates Me₃REE₂(BO₃)₄ <u>Ch. Otgonbayar</u> , H. Pöllmann	
13:40 - 14:00	Preparation and photoluminescence properties of Ce³⁺-doped and Ce³⁺/Mn²⁺ co-doped Y₃Al₅O₁₂ phosphors obtained by controlled crystallization of glass microspheres in the system Y₂O₃-Al₂O₃ with eutectic composition K. Haladejová, <u>R. Klement</u> , A. Prnová, J. Valúchová, D. Galusek	
14:00 - 14:20	In-depth study of CaF₂:Nd,Lu crystals for high-energy lasers <u>S. Normani</u> , A. Braud, R. Soulard, J. L. Doualan, A. Benayad, V. Menard, G. Brasse, R. Moncorgé, D. Stoffel, J. P. Goossens, P. Camy	
14:20 - 14:40	Synthesis and thermodynamics of perovskite solid solutions as redox materials for solar-thermochemical processes <u>J. Vieten</u> , M. Roeb, C. Sattler	
14:40 - 15:00	Photovoltaic studies of nanostructured Silver Indium Diselenide blended with various organic semiconductors as hybrid solar cells <u>D. Pathak</u> , T. Adhikari, T. Wagner, J.-M. Nunzi	

16:30 - 18:30	POSTER SESSION II
	<p>Surface and volume crystal growth in chosen Ge-Sb-Se bulk glasses <u>D. Valdés</u>, J. Barták, J. Málek</p>
	<p>Dielectric spectroscopy investigation of proton conduction mechanism in beta-cyclodextrin polymer and Carboxymethyl-beta-cyclodextrin polymer P.K. Papaioannou, H. S. Karayianni, J. C. Papaioannou</p>
	<p>Interaction between the API and excipients in solid state dosage form prepared by direct compression method J. Romanová, R. Svoboda, A. Komersová, T. Pekárek</p>
	<p>Thermodynamic model and Raman spectra of BaO-B₂O₃ glasses <u>B. Hruška</u>, A.A. Osipov, L.M. Osipova, M. Chromčíková, M. Liška</p>
	<p>Structural transitions, ion mobility, and conductivity in the phosphate-fluoride complex compound of antimony (III) – CsSbF₃(H₂PO₄) <u>V.Ya. Kavun</u>, L.A. Zemnukhova, A.B. Slobodyuk, N.N. Savchenko, E.V. Kovaleva</p>
	<p>Raman spectroscopy and structure of selected Ga₂O₃-ZnO-P₂O₅ glasses M. Chromčíková, J. Holubová, J. Macháček, Z. Černošek, M. Liška</p>
	<p>Synthesis and Study of Glasses on the base of CdNbOF₅ <u>N. Savchenko</u>, L. Ignatieva, Yu. Marchenko</p>
	<p>Impact of glassy additives on ionic conductivity in LiTi₂(PO₄)₃ solid-state electrolyte <u>W. Ślubowska</u>, K. Kwatek, A. Długolecki, J.L. Nowiński</p>
	<p>Structure and properties of niobium zinc-phosphate glasses P. Hejda, J. Holubová, Z. Černošek, E. Černošková</p>
	<p>Polymer-chalcogenide glass nanocomposites for optical relief recording J. Burunkova, N. Zulina, M. Baranov, D. Kussainova, A. Churbanova, S. Molnar, <u>S. Kokenyesi</u></p>
	<p>The role of the REE ions in the glass systems TeO₂-PbO·P₂O₅-PbF₂:MF₃ (M –Er, Nd) L. Ignatieva, I. Maslennikova, Yu. Marchenko, <u>N. Savchenko</u>, G. Zverev, S. Sarin</p>
	<p>Carbazole-based azopolymers as media for polarization holographic recording <u>E. Achimova</u></p>
	<p>Crystallization in the indium oxyfluoroniobate glasses <u>L. Ignatieva</u>, N. Savchenko, Yu. Marchenko, S. Sarin</p>
	<p>Speciation and siting of transition metal divalent cations in zeolites by FTIR and UV-Vis spectroscopy <u>M. Lemishka</u>, E. Tabor, K. Mlekodaj, Z. Sobalík, J. Dědeček</p>
	<p>Chemical, thermal and structural investigation of barium niobophosphate glasses P. Kalenda, L. Koudelka, P. Mošner, L. Montagne, B. Revel, P. Simon</p>
	<p>Optical characterization and glass formation studies in the TeO₂-BaO-ZnO system <u>J. Hrabovsky</u>, F. Desevedavy, G. Gadret, P. Janicek , T. Wágner , F. Smektala</p>
	<p>Atmospheric pressure microwave plasma torch synthesis of free-standing graphene nanosheets <u>J. Toman</u>, O. Jašek, J. Jurmanová</p>
	<p>Chemical substitution-induced magnetic transformations in multiferroic series BiFeO₃-Ae TiO₃ (Ae =Ca, Sr, Ba) <u>U. Khomchanka</u>, J. A. Paixão</p>
	<p>The improving of transport properties of barium indate by the simultaneous homogeneous and heterogeneous doping <u>N. Tarasova</u>, I. Animitsa, N. Kochetova, A. Galisheva, E. Matveev</p>
	<p>Nitrogen ion implantation of titanium alloys <u>J. Drahokoupil</u>, P. Veřtát, J. Kopeček, J. Duchoň P. Vlčák</p>
	<p>Thermal properties of low-molecular fluorocarbon polymers V. Mashchenko, <u>L. Ignatieva</u></p>
	<p>Experimental study of cerium influence on the structure and thermal properties of high-alkaline lithium borosilicate glass V. Eremyashev, D. Zhrebtsov, M. Brazhnikov, R. Zainullina, E. Danilina, <u>A. Osipov</u></p>
	<p>Synthesis of Co-doped magnetic metal organic frameworks (MMOFs) for efficient removal of dyes from effluents <u>D. S. Patil</u>, M. Chibuike, V Sena, M. Konale, T. Timofeeva</p>
	<p>EPR and magnetic properties of α-BiNb_{1-x}Fe_xO_{4-δ} <u>L. Feltsinger</u>, N. Zhuk, L. Rychkova</p>
	<p>The novel halogen-substituted (F, Cl) perovskites based on Ba₄In₂Zr₂O₁₁: structure, thermal properties and electrical conductivity <u>N. Tarasova</u>, I. Animitsa, A. Galisheva</p>

Effect of bismuth ion implantation on crystallization processes of amorphous Ge₂Sb₂Te₅ thin films P. Lazarenko, S. Kozyukhin, A. Sherchenkov, M. Presniakov, A. Yakubov, D. Dronova, M. Kuzmicheva, Yu. Chigirinsky
Crystallization of Ge₈Sb_{2-x}Bi_xTe₁₁ thin films employing single femtosecond pulses V. Karabyñ, Yu. S. Tveryanovich, P. Bezdicka, J. Mistri ⁶ , P. Knotek, T. Wagner, M. Frumar
Counter electrodes based on noble-metal-decorated ZnO nanowire arrays for dye or quantum dot sensitized solar cells G. Syrokostas, K. Govatsi, G. Leftheriotis, S.N. Yannopoulos
Selected magnesium salt hydrates doped by carbon material for thermal energy storage P. Honcová, G. Sádovská, J. Pastvová, P. Košťál
Hybrid plasmonic nanoparticles as visible light induced energy conversion photo-system for efficient carbon dioxide reduction D. Kumar, J. Y. Lee, R. Jaswal, C. H. Park, C. S. Kim
Thermal stability of p-type skutterudites DD_{0.6}Fe₃CoSb₁₂ by Knudsen effusion mass spectrometry F. Zelenka, P. Broz, J. Vrestal, J. Bursik, G. Rogl, P. Rogl
Activity loss of molecular sieves-based adsorbents for natural gas drying P. Azhagapillai

WEDNESDAY, SEPTEMBER 19, 2018

<i>chairperson: A. Kolobov</i>	
09:00 - 09:40 PT 04	Structure and bonding in phase-change memory materials S. Elliott, T.H. Lee, K Konstantinou, F. Mocanu

09:40 - 10:20 Coffee Break

SESSION I		<i>chairperson: E. Bychkov</i>
10:20 - 10:50 InvT 12	Unravelling diffraction from glass, liquid, and amorphous materials S. Kohara	
10:50 - 11:20 InvT 13	Rapid crystallization of phase change materials: Density functional simulations J. Akola, J. Kalikka, M. Ropo, R.O. Jones	
11:20 - 11:40	Local and intermediate-range atomic orders in a Ga-Ge-Se glass by anomalous x-ray scattering J. R. Stellhorn, S. Hosokawa, M. Krbal, T. Wagner, E. Magome	
11:40 - 12:00	Laser-induced modification and formation of periodic surface structures ("Ripples") of amorphous GST225 PCM materials S. Kozyukhin, M. Presniakov, P. Lazarenko, M. Savelyev, M. Smayev, V. Glukhenkaya, A. Sherchenkov, A. Gerasimenko, V. Sigaev	
12:00 - 12:20	Design of low dimensional oxychalcogenides from heteroleptic building blocks H. Kabbour, S. Nicoud, B. Leclercq, O. Mentre	

12:20 - 13:20 Lunch

SESSION I		<i>chairperson: F. Smektala</i>
13:20 - 13:40	Theoretical analysis of properties of doping graphene with nitrogen and with boron S.J. Grabowski	
13:40 - 14:00	Athermal effects in chalcogenide glasses J. Orava, S. N. Yannopoulos, T. Wagner	
14:00 - 14:20	Application of quadrature frequency resolved spectroscopy on green upconversion photoluminescence in GeGaS:Er glasses L. Strizik, V. Prokop, J. Hrabovsky, T. Wagner, T. Aoki	
14:20 - 14:40	Intense visible upconversion photoluminescence in GeGaS: Ho³⁺ glasses V. Prokop, L. Strizik, H. Segawa, Y. Wada, J. Oswald, T. Wagner	
14:40 - 15:00	Advanced optical characterization of upconverting materials Na(Lu/Y/Gd)F₄: Yb, Er/Tm/Ho with optimized chemical composition J. Valenta, M. Greben, A. Repko, D Nižňanský	

15:00 - 15:40 Coffee Break

SESSION I		<i>chairperson: J. Orava</i>
15:40 - 16:00	The influence of acid treatment on properties of alkali activated zeolite foams Z. Tišler, R. Bulánek	

16:00 - 16:20	Performance of cationic zeolites for adsorptive separation of olefin/paraffin gas mixtures Y. Gherib, E. Koudelkova, F. S.de Oliveira Ramos, R.Bulanek
16:20 - 16:40	M(BH₃NH₂BH₂NH₂BH₃) – hydrogen-rich salts with pentameric boron-nitrogen chain anion R. Owarzany, K. J. Fijalkowski, W. Grochala
16:40 - 17:00	Metal borohydrides as precursors to metal boride ceramics W. Wegner, T. Jaroń, W. Grochala
17:00- 17:20	Mixed oxides of TiO₂-ZrO₂ as support of catalysts for organic synthesis G. Rangel-Porras, A. Quiroga-Almaguer, C. Moncada-Sánchez, R. Zárraga-Nuñez, R. Miranda-Avilés

SESSION II

chairperson: J. Málek (rector of University of Pardubice)

10:20 - 10:50 InvT 14	Crystallization of molecular glasses: A central role for surface diffusion L. Yu
10:50 - 11:20 InvT 15	High-temperature Raman spectroscopy A.A. Osipov
11:20 - 11:40	Thermodynamic properties and phase transitions of nonstoichiometric solids D. Sedmidubský
11:40 - 12:00	Recrystallization kinetics of Enzalutamide with regard to processing, storage and handling conditions J. Romanová, R. Svoboda, I. Obadalová, T. Pekárek, L. Krejčík, A. Komersová
12:00 - 12:20	Crystallization behavior of doped Ge-Te glasses D. Brandová, R. Svoboda, J. Málek

12:20 - 13:20 Lunch

SESSION II

chairperson: D. Sedmidubský

13:20 - 13:40	Transient nucleation in Ge-Sb-S thin films S. Martinkova, J. Shanelova, J. Bartak, J. Malek
13:40 - 14:00	Comparison of crystal growth in chalcogenide bulk glasses and thin films J. Barták, D. Valdés, J. Málek
14:00 - 14:20	Viscous behavior of chalcogenides P. Košťál, J. Barták, J. Málek
14:20 - 14:40	Kinetics of nucleation and crystal growth in chalcogenide glasses J. Shánělová, P. Honcová, J. Málek
14:40 - 15:00	Stacking faults in calcium sulfate and their implications in gypsumbased plaster manufacture F. Beaugnon, S. Quiligotti, E. Gouillart, G.Wallez

19:00 - 22:00 **Conference Dinner**

THURSDAY, SEPTEMBER 20, 2018

chairperson: J. Akola

09:00 - 09:40 PT 05	Chalcogenide glass fibers for infrared photonics J.-L. Adam, V. Nazabal, J. Trolès
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09:40 - 10:10 Coffee Break

SESSION I

chairperson: D. Gregory

10:10 - 10:40 InvT 16	Single crystal architecture in glass: Fabrication and unique characteristics D. Savytskii, A. Stone, K. Veenhuizen, C. Au-Yeung, S. McAnany, D. Nolan, B. Aitken, V. Dierolf, H. Jain
10:40 - 11:10 InvT 17	Chalcogenide glass-ceramics transparent in the infrared: multifaceted materials L. Calvez
11:10 - 11:30	Solid state mechanochemical synthesis of a series of early transition metal borohydrides M. Winny, W. Wegner, W. Grochala

11:30 - 11:50	Effect of surface modification on electrochemical properties of $\text{Li}_4\text{Ti}_5\text{O}_{12}$ synthesized via mechanochemical/thermal treatment <u>M. Fabián</u> , M. Žukalová, L. Kavan, V. Šepelák, M. Senna
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SESSION II		<i>chairperson: H. Roesky</i>
10:10 - 10:30	What can we benefit from oxidative reactions of carbazole <u>M. Li</u>	
10:30 - 10:50	Structure and properties of AlCr7Fe6 alloy and its self-healing potential <u>A. Michalcová</u> , I. Marek, Z. Veselka, A. Knaislová, Z. Sofer, T.F. Kubatík	
10:50 - 11:10	Study of thorium's role in room temperature superconductivity <u>D. Zhao</u>	
11:10 - 11:30	The surface and electrical properties of oxide nanoparticles – humidity to electricity converter <u>I. Danilenko</u> , O. Gorban, A. Shylo, O. Doroshkevych, T. Konstantinova, A. Lyubchik	
11:30 - 11:50	New hydrogen-rich derivatives of ammonium borohydride, $\text{NH}_4[\text{M}(\text{BH}_4)_4]$, M = Y, Sc, Al <u>A. Starobrat</u> , T. Jaroń, W. Grochala	

12:10 - 20:30	Excursion
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FRIDAY, SEPTEMBER 21, 2018

		<i>chairperson: D. Holec</i>
09:00 - 09:40 PT 06	Strategies for developing strong, tough and stable hard materials, a case study on hard coatings <u>P.H. Mayrhofer</u>	

09:40 - 10:10 Coffee Break

SESSION I		<i>chairperson: L. Calvez</i>
10:10 - 10:40 InvT 18	Magnetic frustration, ion conduction, and lithium intercalation battery materials from cation-ordering in perovskites <u>E.J. Cussen</u> , M. Amores, H. El-Shinawi, S.A. Corr	
10:40 - 11:10 InvT 19	Complex hydrides as potential electrolytes for lithium-ion batteries I. Cascallana-Matías, J. Breternitz, D. A. Keen, A. Baker, H. Davis, E. J. Cussen, <u>D. H. Gregory</u>	
11:10 - 11:30	Modelling of solid-state battery to optimize material components and achieve high energy density <u>M. Mika</u> , F. Lahodny, J. Baborak, V. Bruere, K. Rysova, V. Prochazka	
11:30 - 11:50	Investigation of all-solid-state Na Ion Batteries based on chalcogenides <u>A. Castro</u> , L. Calvez, O. Bošák, M. Kubliha, V. Labaš, D. Le Coq	

SESSION II		<i>chairperson: P. Mayrhofer</i>
10:10 - 10:40 InvT 20	Characteristics of amorphous In-Zn-Sn-O thin film transistors A. D. Lestari, I. Noviyana, M. Putri, Y.-W. Heo, <u>H.Y. Lee</u>	
10:40 - 11:10 InvT 21	Point-defect engineering of thin film materials: insights from modelling <u>D. Holec</u> , N. Koutná, F. Pacher, M. Friák, M. Šob, P.H. Mayrhofer	
11:10 - 11:30	Phosphinic acid based metal-organic frameworks – a new route to hydrothermally stable porous coordination polymers <u>J. Hynek</u> , P. Brázda, J. Rohlíček, J. Demel	
11:30 - 11:50	Influence of La+Ce oxide concentration on the solubility of Mo doped alkali borosilicate glasses for nuclear waste immobilization applications <u>D. Patil</u> , M. Konale, J. McCloy	

11:50 - 12:20	Closing Ceremony Tomas Wagner
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12:20 - 13:40 Lunch