



## **Solid State Chemistry 2010**

Organised by Institute of Inorganic Chemistry AS CR, v.v.i., Řež, Czech Republic  
[www.ssc2010.cz](http://www.ssc2010.cz)

**Prague, September 10-15, 2010**

Masaryk Dormitory, Thákurova 501/1, Praha-Dejvice, Czech Republic

# **Scientific Programme**

Saturday, September 11, 2010



**Hybrid Materials. Lectures. Chairpersons: K. Lang, J. Bujdák**

8:30 8:40 Opening Speech

8:40 9:25 **An overview of Metal-Organic Frameworks: from giant cell to the breathing effect, Millange, F.; Guillou, N.; Serre, C.; Férey, G.; Walton, R.I.**

9:25 9:45 Metal-organic frameworks based on metal-organic supramolecules, Lah, Myoung Soo; Oh, Minhak

9:45 10:05 Inclusion compounds based on mesoporous metal-organic framework MIL-101 and Mo and Re clusters and Keggin-type polyoxometallates, Kovalenko, K.A.; Berdonosova, E.A.; Klyamkin, S.N.; Maksimchuk, N.V.; Kholdeeva, O.A.; Fedin, V.P.

10:05 10:25 **Coffee break**

10:25 10:45 Advanced characterizations for nanostructured LDH-hybrid materials, Taviot-Gueho, Christine; Leroux, Fabrice

10:45 11:05 Porphyrin-LDH hybrids as novel photofunctional materials, Káfuňková, E.; Lang, K.; Kubát, P.; Leroux, F.; Taviot-Guého, C.

11:05 11:25 Drug-carrying layered double hydroxides supported on magnetic core: Novel bioinorganic nanocomposites for magnetic drug delivery, Ay, Ahmet Nedim; Zümreoglu-Karan, Birgül; Rives, Vicente; Temel, Abidin; Konuk, Deniz

11:25 11:45 Synthesis of new layered and framework anion exchangeable hydroxides, Fogg, A.M.; McIntyre, L.J.; Goulding, H.V.; Hulse, S.E.; Prior, T.J.; Clegg, W.

11:45 12:05 Oriented films of zinc hydroxides, Demel, Jan; Bezdička, Petr; Janda, Pavel; Klementová, Mariana; Pleštil, Josef; Lang, Kamil

12:05 13:30 **Lunch**

**Hybrid Materials. Lectures. Chairpersons: C. Taviot-Guého, F. Millange**

13:30 14:00 **Fluorescence resonance energy transfer between rhodamine cations in colloids and thin films of layered silicates, Bujdák, J.; Iyi, N.**

14:00 14:20 Studies of particle dispersion in elastomeric polyurethane/organically modified montmorillonite nanocomposites, Dimitry, O.I.H.; Abdeen, Z.; Ismail, E.A.; Saad, A.L.G.

14:20 14:40 Drastic structural transformation of Cd chalcogenide nanoparticles using chloride ions and surfactants, Saruyama, Masaki; Kanehara, Masayuki; Teranishi, Toshiharu

14:40 15:00 Hybrid materials containing gallium-sulphide supertetrahedral clusters, Vaqueiro, Paz; Romero, M. Lucia

15:00 15:20 Design of homochiral porous metal-organic coordination polymers based on chiral malates and aspartates, Yutkin, M.P.; Dybtsev, D.N.; Fedin, V.P.

15:20 15:40 **Coffee break**

15:40 16:00 Supercritical route for super hybrid materials, Tadafumi, Adschiri

16:00 16:20 Designed synthesis of monodisperse metal/platinum core/shell nanoparticles and their catalytic properties for the PROX reaction, Sato, Ryota; Ito, Shin-ichi; Kanehara, Masayuki; Tomishige, Keiichi; Teranishi, Toshiharu

16:20 16:40 Design of homochiral porous metal-organic coordination polymers for enantioselective separation, Fedin, Vladimir P.

16:40 17:00 Intercalation chemistry of several new host materials based on metal organophosphonates, Zima, Vítězslav; Svoboda, Jan; Melánová, Klára; Beneš, Ludvík; Růžička, Aleš

17:00 18:15 **Hybrid Materials. Posters**  
**Inorganic Materials 1. Posters**

19:30 **Welcome Dinner (included in registration fee). Vikárka restaurant, Prague Castle**

## Saturday, September 11, 2010

17:00:00 - 18:15 Poster sessions

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Poster  
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### Hybrid Materials

Sa 1	The solvent vapour pressure effect on phase transition rates of $\alpha$ - and $\beta$ - forms of tegafur	<a href="#">Petkune, Sanita</a>
Sa 2	Thermal stability of 3-(2,2,2-trimethylhydrazine)propionate	<a href="#">Veldre, Kaspars</a>
Sa 3	Laponite-clay functionalized for Nafion nanocomposite membranes in the PEM fuel cells applications: water mobility and mechanical properties	<a href="#">Angjeli, Kristina</a>
Sa 4	Synthesis and characterization of hybrid mesoporous silicas containing geminal methyl groups	<a href="#">Borówka, Anna</a>
Sa 5	Synthesis and structural characterization of hybrid materials containing pravastatin drug intercalated into layered double hydroxide	<a href="#">Taviot-Guého, Christine</a>
Sa 6	Glassy state lanthanide complexes for highly effective luminescent composites	<a href="#">Dzhabarov, Vagif</a>
Sa 7	Novel polymer/titanium composite of core-shell morphology as photocatalyst	<a href="#">Kierys, Agnieszka</a>
Sa 8	Polymer templating for preparation of inorganic nanoparticles	<a href="#">Kierys, Agnieszka</a>
Sa 9	A new nanocomposite architecture: Prolate spheroidal hematite particles with equatorial layered double hydroxide disks	<a href="#">Konuk, Deniz</a>
Sa 10	Intercalation of salicylate into layered double hydroxide hosts	<a href="#">Kovanda, František</a>
Sa 11	Preparation of homogeneous TiO <sub>2</sub> /MWNT composites with impregnation method	<a href="#">Németh, Zoltán</a>
Sa 12	New inorganic-organic hybrid materials with framework layers	<a href="#">Nicholls, Jennifer L.</a>
Sa 13	Poly(dimethylsiloxane) elastomeric networks modified with 3-picoline, preparation, characterization and metal adsorption studies	<a href="#">Santos dos, Mirian Paula</a>
Sa 14	New low-dimensional anorganic-organic hybrids based on copper phosphonates: The synthesis and structure	<a href="#">Svoboda, Jan</a>
Sa 15	A novel method to evenly dispersed carbon nanotubes and nanofibers in a metal matrix	<a href="#">Tolochko, Oleg</a>
Sa 16	Panosopic assembling of ceria nanoparticles with plate-like semiconductors by co-precipitation and sol-gel methods for UV-shielding application	<a href="#">Sato, Tsugio</a>
Sa 17	Synthesis, structure and functional properties of microporous metal-organic frameworks	<a href="#">Sapchenko Sergey</a>

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### Inorganic Materials 1

Sa 18	Synthesis and characterization of rare earth oxyapatite, Ca <sub>8</sub> Ln <sub>2</sub> (PO <sub>4</sub> ) <sub>6</sub> O <sub>2</sub> (Ln= Gd, Dy)	<a href="#">Demirozu-Senol, Sevim</a>
Sa 19	Solid-state synthesis and characterization of novel xenotime type rare-earth borophosphate, LnBP <sub>2</sub> O <sub>8</sub>	<a href="#">Özen Kahveci, Gülden</a>
Sa 20	Nanosized iron-containing oxide ceramics prepared by sol-gel method	<a href="#">Gatelyte, Aurelija</a>
Sa 21	Synthesis and characterization of Ce <sub>1-x</sub> Pr <sub>x</sub> PO <sub>4</sub> phosphates obtained by different synthesis routes	<a href="#">Matraszek, Aleksandra</a>
Sa 22	Synthesis of Er <sup>+3</sup> doped Sb <sub>2</sub> Se <sub>3</sub> nanorods by hydrothermal method and their optical properties	<a href="#">Alemi, Abdolali</a>

Sa 23	Synthesis and characterization of Lu <sup>+3</sup> doped Sb <sub>2</sub> S <sub>3</sub> micro crystals via hydrothermal route and their optical properties	<a href="#"><u>Alemi, Abdolali</u></a>
Sa 24	The temperature of precipitation of the MCM-41 silicas	<a href="#"><u>Borówka, Anna</u></a>
Sa 25	Hydrothermal synthesis of iron oxide particles with controllable shape and size	<a href="#"><u>Q. Dong</u></a>
Sa 26	Kinetics of mechanochemical synthesis of Sb <sub>2</sub> S <sub>3</sub> and Bi <sub>2</sub> S <sub>3</sub> nanoparticles	<a href="#"><u>Dutková, Erika</u></a>
Sa 27	Growth and characterization of coiled carbon nanotubes	<a href="#"><u>Fejes, Dora</u></a>
Sa 28	Combustion synthesis of titanium carbide-nickel-molybdenum cermet: Role of mechanical activation	<a href="#"><u>Hobosyan M.A.</u></a>
Sa 29	Synthesis of Mn-Zn ferrite using modified sol-gel auto-combustion method	<a href="#"><u>Winiarska, Katarzyna</u></a>
Sa 30	Synthesis of titano-silicate-type zeolite and Ni deposition into pore	<a href="#"><u>Atsushi Muramatsu</u></a>
Sa 31	Sonochemical synthesis of diluted magnetic semiconducting oxides	<a href="#"><u>Lisboa-Filho, Paulo</u></a>
Sa 32	Synthesis of high surface area mesoporous silica powder and shape control the morphology by sol-gel method	<a href="#"><u>Ui, Sang-Wook</u></a>
Sa 33	Creation of a homogeneous micro relief on a surface of silicate glasses	<a href="#"><u>Semencha, A.V.</u></a>
Sa 34	Synthesis and characterization of TiO <sub>2</sub> nanotubes at low-middle temperatures by a hydrothermal route	<a href="#"><u>Yang, Wein-Duo</u></a>

Sunday, September 12, 2010



**Fundamentals: Structure, Electronic and Magnetic Properties. Lectures. Chairperson: R. Černý**

- 8:30 9:00 **Controlling the structures and properties of layered chalcogenides and pnictides, Clarke, Simon J.**  
Rare earth-based layered oxyfluorosulphides and oxypnictides: From pigments properties to superconductivity phenomena.
- 9:00 9:20 Demourgues, Alain and Ogier, Tiphaine  
In situ low-temperature infrared spectroscopic study on Kohn anomaly of one-dimensional metallic exotic-nanocarbon, Onoe, Jun;  
Takashima, Akito; Toda, Yasunori
- 9:20 9:40 Comparison of O-N substitution processes in TiO<sub>2</sub>, ZnO and Nb<sub>2</sub>O<sub>5</sub> with organic crystalline solids under mechanical stressing, Senna, Mamoru; Bauer, Benjamin; Shi, Jianmin; Sepelak, Vladimir; Becker, Klaus Dieter

**10:00 10:20 Coffee break**

- 10:20 11:05 **Studies of the double perovskites, A<sub>2</sub>FeMoO<sub>6</sub> and A<sub>2-x</sub>A'<sub>x</sub>MnRuO<sub>6</sub>: a closer look at the contrasting role of chemical order, Woodward, Patrick M.**  
Structure-property relations in new layered Ba<sub>3-x</sub>Sr<sub>x</sub>LaNb<sub>3-y</sub>Ta<sub>y</sub>O<sub>12</sub> perovskites, Gillie, Lisa J.; Adams, Ruth M.; Mould, Andrew G.; Reeves-McLaren, Nik; Sinclair, Derek C.
- 11:05 11:25 Electronic structure of rare earth ions in the Sr<sub>2</sub>MgSi<sub>2</sub>O<sub>7</sub> persistent luminescence host material, Laamanen, Taneli; Hölsä, Jorma; Lastusaari, Mika; Novák, Pavel
- 11:25 11:45 Flexibility of structure and variability of properties of nanostructured spinels, Šepelák, Vladimír; Myndyk, M.; Šubrt, J.; Feldhoff, A.; Heitjans, P.; Becker, K.D.

**12:05 13:30 Lunch**

**Fundamentals: Structure, Electronic and Magnetic Properties. Lectures. Chairperson: P.M. Woodward**

- 13:30 14:15 **Powder diffraction for solid state chemistry: From high resolution data and complex structures to low quality data and local structures, Černý, Radovan**  
Heterobimetallic barium-cobalt aminopolycarboxylate complexes, as single-source molecular precursors for BaCoO<sub>3-x</sub> oxide materials, Tancret, Nathalie; Bulimestru, Ion; Rolle, Aurélie; Cornei, Nicoleta; Mentré, Olivier
- 14:15 14:35 Homochiral, helical supramolecular coordination polymers organized by strong, noncovalent π-π stacking interactions: single crystal to single crystal transformations, Reger, Daniel L.; Horger, Jacob and Smith, Mark

**14:55 15:15 Coffee break**

- 15:15 16:00 **Magnetic properties of new nitrides and oxides, Battle, Peter D.**  
Non-collinear spin structure of BaCoTiFe<sub>10</sub>O<sub>19</sub> by resonant X-ray magnetic scattering, Okube, Maki and Sasaki, Satoshi
- 16:00 16:20 Carboranethiol self-assembled monolayers. Tuning the surface properties by oppositely oriented dipoles, Baše, T. et al.

- 16:45 18:15 **Fundamentals: Structure, Electronic and Magnetic Properties. Posters**  
**Electrochemistry of Solids. Posters**

**Sunday, September 12, 2010**

**16:45 - 18:15 Poster sessions**

Poster ID	<b>Fundamentals: Structure, Electronic and Magnetic Properties. Posters</b>	
Su 1	A novel hybrid nanomaterial derived from a polyhedral oligomeric silsesquioxane cage for application in adsorption of metal ions and oxidation catalysis	<a href="#">Dias Filho, N.L.</a>
Su 2	Structural and magnetic characterization of $A_3Cr_2ReO_9$ (A= Sr, Ba) double perovskites	<a href="#">Carbonio, R. E.</a>
Su 3	$Fe^{3+}$ to $Fe^{2+}$ partial reduction in the monoclinic double perovskite $Ba_{2-x}La_xFeSbO_6$	<a href="#">Carbonio, R. E.</a>
Su 4	Magnetic surface effects in ferromagnetic $La_3Ni_2SbO_9$	<a href="#">Carbonio, R.</a>
Su 5	Variations of electronic properties on composition and crystal structure for V-W-Mo-O system	<a href="#">Chung, Jaehoon</a>
Su 6	Synthesis, characterization and physical properties of two new quaternary selenides: $Ba_3SnBi_2Se_8$ and $Ba_3SnSb_2Se_8$	<a href="#">Chung, M.-Y.</a>
Su 7	Magnetic properties of $Gd_{1-x}Sc_xNi_2$ (x=0.1, 0.2) solid solutions	<a href="#">Ćwik, J.</a>
Su 8	Aggregated structures and spin crossover properties of fac- and mer-(Tris(2-methylimidazole-4-yl)methylideneaminobenzyl)iron(II) chloride hexafluorophosphate	<a href="#">Furusho, D.</a>
Su 9	Effect of chirality on assembly structure and spin crossover property of iron(II) complexes $[Fe(HLR \text{ or } RS)_3]Cl \cdot PF_6$	<a href="#">Hashibe, T.</a>
Su 10	Thermal study of the structures and phase transitions of new possibly functional materials: $A'A''_2CuTi_2O_9$ ( $A'=Ca, Ba$ ) and ( $A''=Pr, Nd$ ) triple perovskites	<a href="#">Iturbe-Zabalo, E.</a>
Su 11	Microstructural and magnetic properties of $Li_{0.5}Fe_{2.5}O_4$ fine particles prepared by citrate gel decomposition	<a href="#">Jović, N</a>
Su 12	The removal of oxide impurities on $ZrB_2$ surface using diluted HF solution	<a href="#">Jung, Jin-Young</a>
Su 13	Correlation of Crystal Structure and Energy Band Gap of Complex Oxyfluorides, $AA'Nb_2O_6F$ (A = Li, Na, K, Rb, Cs, A' = Ca, Sr, Pb)	<a href="#">Kim, Sung-Chul</a>
Su 14	Complex temperature dependence of resistivity in $LaCo_{1-y}Cu_yO_3$ (y~0.33)	<a href="#">Knížek, K.</a>
Su 15	Polynuclear lanthanide complexes with cavitated cucurbit[6]uril: From molecular compounds to coordination polymers	<a href="#">Kovalenko, E.A.</a>
Su 16	Electrical and dielectric properties of ytterbia stabilized zirconia crystals	<a href="#">Kundracik, F.</a>
Su 17	Structural reinvestigation of alkali hexatitanate	<a href="#">Kunimitsu, K.</a>
Su 18	GaP and $WO_3$ nanoflowers produced through Close-Spaced Vapour Transport	<a href="#">Lima, Enrique</a>
Su 19	Effects of hydrogen doping on the electric properties of $TiO_2$ thin films	<a href="#">Lin, Huey-Jiuan</a>
Su 20	Structure and thermal properties of $WO_3$ -doped calcium aluminosilicate glasses	<a href="#">Lin, Huey-Jiuan</a>
Su 21	Quantum critical magnetism of $Fe_3Mo_3N$ and related compounds	<a href="#">Nakamura, H.</a>

Su 22	Influence of the dissimilar crystalline environments on the electronic features of two crystallographically independent molecules. The results of the charge density analysis	<a href="#">Novaković, S.B.</a>
Su 23	Structure and superconductivity of cuprates containing Gd <sup>3+</sup> ion Y <sub>1-x</sub> Gd <sub>x</sub> Ba <sub>2</sub> Cu <sub>3</sub> O <sub>7</sub> , Ce <sub>0.15</sub> Nd <sub>1.85-x</sub> Gd <sub>x</sub> CuO <sub>4-y</sub> , and Bi <sub>2</sub> Sr <sub>1.5</sub> Nd <sub>0.5-x</sub> Gd <sub>x</sub> CuO <sub>6+y</sub>	<a href="#">Oh-ishi, K.</a>
Su 24	Crystallization kinetics of a two-dimensional system: A molecular dynamics study	<a href="#">Rino, J.P.</a>
Su 25	Self-assembly of copper(II) complex of chiral imidazole containing ligand	<a href="#">Tomohiro, O.</a>
Su 26	Effect of synthesis conditions on the crystal structure and the magnetic properties of BiFeO <sub>3</sub> nanopowders	<a href="#">Rashad, M.M.</a>
Su 27	“Negative chemical” pressure as useful method for phase transition investigations in solids	<a href="#">Seyidov, M.-H.Yu.</a>
Su 28	Evidence for an extra-channel ionic conductivity in apatite-type lanthanum silicate: A first-principle study	<a href="#">Siberchicot, B.</a>
Su 29	Structural building principles of complex cubic intermetallics	<a href="#">Steurer, Walter</a>
Su 30	Preparation, electrical and optical studies of Cu <sub>6</sub> PS <sub>5</sub> I-Cu <sub>6</sub> AsS <sub>5</sub> I superionic solid solutions	<a href="#">Studeniyak I.</a>
Su 31	May external perturbation substantially affect negative thermal expansion coefficient of crystals?	<a href="#">Suleymanov, R.A.</a>
Su 44	Structure-property relations in new layered Ba <sub>3-x</sub> Sr <sub>x</sub> LaNb <sub>3-y</sub> Ta <sub>y</sub> O <sub>12</sub> perovskites	<a href="#">Adams, Ruth M.</a>

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## Electrochemistry of Solids. Posters

Su 32	Nb <sub>2</sub> O <sub>5</sub> film on SiO <sub>2</sub> /C carbon ceramic: simultaneous determination of ascorbic acid dopamine and uric acid	<a href="#">Arenas, Leliz T</a>
Su 33	Electrochemical behaviour of combined silicon carbide and boron carbide solid state electrodes in ionic melts	<a href="#">Gab, Angelina</a>
Su 34	TiO <sub>2</sub> thin film coating on metal electrode by sol-gel process for dye-sensitized solar cell	<a href="#">Han, Chi-Hwan</a>
Su 35	Preparation and photoelectrochemical characterization of antimony oxide nanocrystalline thin film for application to dye-sensitized solar cell	<a href="#">Kim, Ji-Hye</a>
Su 36	Thin film microbatteries - fabrication and electrochemical performance	<a href="#">Lu, L.</a>
Su 37	The model of electrochemical oxidation of dispersion sulphide copper-nickel alloys	<a href="#">Nechvoglod, O.V.</a>
Su 38	BIMEVOX solid solutions as possible materials for membranes of electrochemical devices	<a href="#">Morozova, M.V.</a>
Su 39	Chemical synthesis of the nanostructured polyaniline using liquid-solid interface polymerization and its distinct properties	<a href="#">Mu, Shaolin</a>
Su 40	Molybdenum carbide electrodeposition onto semiconducting materials surface in ionic melts	<a href="#">Shakhnin, Dmitrii</a>
Su 41	Study of the oxide film on surface of aluminium alloy	<a href="#">Ting, Y.C.</a>
Su 42	Oxygen nonstoichiometry and charge transfer in double perovskites GdBaCo <sub>2-x</sub> M <sub>x</sub> O <sub>6-d</sub> (M=Mn, Fe, x=0, 0.2)	<a href="#">Tsvetkov, Dmitry</a>
Su 43	Concentration evolution of conductivity nature and magnitude of {Me <sup>n+</sup> <sub>2/n</sub> WO <sub>4</sub> - WO <sub>3</sub> } (Me= Ca, Sr, Ba, Sc) eutectic composites	<a href="#">Karapetyan, A.</a>

Monday, September 13, 2010



**Inorganic Materials. Lectures. Chairpersons: Z. Lenčėš, P.D. Battle**

- 8:30 8:50 Ordered mesoporous carbons: Novel solid state materials for electrocatalytic applications, Selvam, Parasuraman; Kuppan, Ballaiah; Viswanathan, Balasubramanian
- 8:50 9:10 Surface functionalisation of ordered and non-ordered mesoporous silica with 1,4-diazoniabicyclo[2.2.2]octane derivative: A comparative study of CuCl<sub>2</sub> adsorption on the matrix surface from ethanol solution, Gushikem, Yoshitaka; Maroneze, Camila M.; Magosso, Hérica A.
- 9:10 9:30 Mesoporous silica composite catalysts doped with different metal oxides by sol-gel process, Hojo, Junichi; Yamashita, Shougo; Inada, Miki; Enomoto, Naoya
- 9:30 9:50 Wet method synthesis of nanocomposites and mesoporous structures, Trusova, E.A.
- 9:50 10:10 **Coffee break**
- 10:10 10:55 **Challenges facing inorganic materials for energy storage, Whittingham, M. Stanley**
- 10:55 11:15 Crystal-Chemistry: a basic research tool to define and prepare new classes of active materials for Li-batteries, Rozier, Patrick and Dollé, Mickael
- 11:15 11:35 Single-crystal synthesis, structure and property of Li-ion conducting oxides having garnet-related type structure, Awaka, J.; Takashima A.; Hayakawa, H.; Kijima, N.; Idemoto, Y.; Akimoto, J.
- 11:35 11:55 Thermally metastable transition metal nitrides for metamaterials, Ryoji, S.; Y., Masubuchi; Teruki, Motohashi; Shinichi, Kikkawa
- 11:55 13:30 **Lunch**

**Electrochemistry of Solids. Lectures. Chairpersons: S.M. Whittingham, A.M. Bond**

- 13:30 14:15 **Electrochemical and photochemical synthesis of transition metal complexes with controlled morphologies and other technologically important characteristics, Bond, Alan**
- 14:15 14:35 Disorder and vacancies in Fe-hexagonal perovskite promoted by F<sup>-</sup>/O<sup>2-</sup> substitution: a way to enhance low-temperature oxygen mobility, Sturza, Mihai-Ionut; Daviero-Minaud, Sylvie; Kabbour, Houria; Mentré, Olivier
- 14:35 14:55 The effect of saccharin on the Ni-W alloy deposition, Wang, L. M.; Ke, S.T.; Lin, H.C.; and Chen, C.C.
- 14:55 15:15 **Coffee break**
- 15:15 15:45 **Fundamentals of oxygen reduction in aqueous and non aqueous environments: Electrocatalytic pathways and challenges, Mukerjee, S.; Abraham, K. M.; Olaoire, C.; Trahan, M. and Allen, C**
- 15:45 16:05 Understanding local structure of doped RuO<sub>2</sub> -based electrocatalytic materials, Petrykin, Valery; Macounová, Kateřina; Franc, Jiří; Okube, Maki; Krtil, Petr
- 16:05 16:25 Mechanistic aspects of electrocatalysis on doped RuO<sub>2</sub>, Macounová, K.; Petrykin, V.; Franc, J.; Krtil, P.
- 16:25 16:45 Self-organized TiO<sub>2</sub> nanotubes as materials for a new generation of Li-ion micro-batteries, Lavela, Pedro; Ortiz, G.F.; Tirado, J.L.; Hanzu, I.; Djenizian, T.; Knauth, P.

17:00 19:00 **Inorganic Materials 2. Posters**  
**Electrochemistry of Solids. Posters**

**Monday, September 13, 2010**

**17:00 - 19:00 Poster sessions**

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Poster ID	<b>Analysis and Characterization of Solids</b>	
Mo 1	Solubility and mobility of C <sub>3</sub> H <sub>6</sub> and C <sub>3</sub> H <sub>8</sub> in 13X zeolites by isothermal adsorption characterization in kinetic and equilibrium conditions	<a href="#"><u>Agostino, R.G.</u></a>
Mo 2	Advantages of precession electron diffraction (PED) in ab initio structural fingerprinting of nanocrystalline TiO <sub>2</sub> mixtures: automated crystallite orientation and phase maps	<a href="#"><u>Bakardjieva, S.</u></a>
Mo 3	Microcalorimetric study of CO <sub>2</sub> adsorption on M <sup>+</sup> -FER	<a href="#"><u>Fřydova, E.</u></a>
Mo 4	Raman scattering analysis of highly doped semiconductor superlattices	<a href="#"><u>Galzerani, J.C.</u></a>
Mo 5	Successive ionic layer deposition of Ag nanoclusters	<a href="#"><u>Korotcenkov, G.</u></a>
Mo 6	Modelling of vibrational spectra of non-crystalline solids by molecular simulations	<a href="#"><u>Macháček, J.</u></a>
Mo 7	Structural analysis of the Ni, Mo and NiMo alumina supported hydrotreating catalysts	<a href="#"><u>Priecel, P.</u></a>
Mo 8	Aspects of relative rate of reaction/process	<a href="#"><u>Siudyga, T.</u></a>
Mo 9	Fe(III) and V(V) species in supported catalysts: Analysis and performance in oxidative dehydrogenation of ethane	<a href="#"><u>Smoláková L.</u></a>
Mo 10	Phase transitions and optical absorption edge in sulphur implanted Cu <sub>6</sub> PS <sub>5</sub> Br superionic conductors	<a href="#"><u>Studenyak, I.</u></a>
Mo 11	Study of the reversible CaMnO <sub>3</sub> ↔ CaMnO <sub>2</sub> reduction-oxidation process.	<a href="#"><u>Varela, A</u></a>

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Poster ID	<b>Inorganic Materials 2</b>	
Mo 12	Influence of doping on oxygen permeability in La <sub>x</sub> Ba <sub>1-x</sub> Co <sub>1-y</sub> MyO <sub>3±δ</sub> , (M=Fe,Mn) perovskites	<a href="#"><u>Argiris, Ch.</u></a>
Mo 13	Preparation of perovskite oxide based proton conducting materials and membranes	<a href="#"><u>Argiris, C.</u></a>
Mo 14	Oxygen nonstoichiometry, defect structure and defect-induced expansion of advanced oxide materials	<a href="#"><u>Zuev, Andrey</u></a>
Mo 15	Separation of strontium from liquid radioactive wastes: A comparison of three different inorganic sorbent	<a href="#"><u>Merceille, A.</u></a>
Mo 16	Silicate glasses doped with Ag <sup>+</sup> ions: The comparison between the ion-exchange and ion implantation	<a href="#"><u>Svecova, B.</u></a>
Mo 17	Copper containing waveguiding layers in novel silicate glass	<a href="#"><u>Malichova, H.</u></a>
Mo 18	Magnetic properties of quadruple perovskites Ba <sub>4</sub> LnM <sub>3</sub> O <sub>12</sub> (Ln=rare earths; M=Ru, Ir)	<a href="#"><u>Hinatsu, Y.</u></a>
Mo 19	Phase diagram and electrical conductivity of DyCl <sub>3</sub> -AgCl binary system.	<a href="#"><u>Chojnacka, Ida</u></a>
Mo 20	Preparation and characterization of new lead-free ceramics related to CaTiO <sub>3</sub>	<a href="#"><u>Ta'bi-Benziada, L.</u></a>
Mo 21	Role of increasing As/Sb molar ratio on thermal properties of As-Sb-S glasses	<a href="#"><u>Holubová, Jana</u></a>
Mo 22	Study of the mechanism of Cu-Zn mechanical alloying. A new "mechanochemical equilibrium" phase diagram	<a href="#"><u>Criado, J.M.</u></a>
Mo 23	Study of the thermoelectric properties of a titanium doped sodium cobaltite Na <sub>x</sub> (Co <sub>1-y</sub> Ti <sub>y</sub> )O <sub>2</sub> (x~1 and y<0.15)	<a href="#"><u>Kirakci, Kaplan</u></a>
Mo 24	Ferroelectric property of (Ba <sub>1-2x</sub> Bi <sub>2x</sub> )(Ti <sub>1-x</sub> Cu <sub>x</sub> )O <sub>3</sub> ( x ≤ 0.05 ) ceramics	<a href="#"><u>Shiroki, K.</u></a>
Mo 25	In <sub>5.5+x</sub> Sb <sub>1.5-3x</sub> W <sub>2x</sub> O <sub>12</sub> solid solution: structural characterization and physical properties	<a href="#"><u>Bizo, Liliana</u></a>

Mo 26	Phase transformation and crystallite growth of 2 mol% yttria-partial stabilized zirconia (2Y-PSZ) nanocrystallite powders by co-precipitation process for dental application	<u>Wang, M.-C.</u>
Mo 27	Influence of monovalent modifier in the composition of glass on ion exchange process and “burying” of planar optical waveguide layer	<u>Altšmíd, J.</u>
Mo 28	Synthesis and photoelectronic properties of layered titanate nanostructures	<u>Diwald, Oliver</u>
Mo 29	Preparation of thin optical active layers by localised Er <sup>3+</sup> doping into lithium niobate single crystal	<u>Cajzl, J.</u>
Mo 30	Ion exchange in a new Zn-Er silicate glass - the way of diffusion coefficient calculation	<u>Staněk, S.</u>
Mo 31	Influence of decomposition atmosphere in sol-gel process on precursor grain size and on microstructure of thermoelectric Ca <sub>3</sub> Co <sub>4-x</sub> O <sub>9+δ</sub> ceramics	<u>Rubešová, K.</u>
Mo 32	Disorder in solids	<u>Rycerz, L.</u>
Mo 33	Materials for medical applications based on alkali dihydrophosphates and calcium hydroxyapatite	<u>Shiryaev, M.</u>
Mo 34	Novel silicate glasses for NIR applications	<u>Stará, S.</u>
Mo 35	Effect of stacking fault on the thermoelectrical properties of Mo <sub>1-x</sub> Ta <sub>x</sub> Se <sub>2</sub>	<u>Choi, Sun-Eui</u>
Mo 36	Nanostructured composites on basis of CeO <sub>2</sub> : Synthesis and catalytic activity in low-temperature oxidation of CO	<u>Trusova, E.</u>
Mo 37	Sol-gel technique, texture and morphology of superdispersed ZnO powders for use in electronics and optoelectronics	<u>Vokhmintsev, K.V.</u>
Mo 38	Electrical properties of isostatically pressed alumina ceramics	<u>Trnovcová, Viera</u>
Mo 39	Nanoparticles as pinning centres for bismuth superconductors	<u>Bartůněk, Vilém</u>
Mo 40	Soft synthesis and crystallographic characterization of magnesium based double alkaline earth carbonates	<u>Diánez M.J.</u>
Mo 41	Mechanochemical synthesis of stoichiometric nickel and nickel-zinc ferrite powders with Nicolson-Ross analysis of absorption coefficients	<u>Nikolić A. S.</u>

Tuesday, September 14, 2010



**Inorganic Materials. Lectures. Chairpersons: O. Diwald, P. Krtil**

- 8:30 8:50 Facile synthesis and film formation of magnetic FeCo nanoparticles with graphitic carbon shells, Yamada, Mami; Shinji, Okumura; Kohta, Takahashi
- 8:50 9:10 Plasma sprayed (APS) coatings of nanometric Al<sub>2</sub>O<sub>3</sub>-13%TiO<sub>2</sub> for photocatalytic application, Ctibor, P.; Štengl, V.; Ageorges, H.
- 9:10 9:30 Preparation and properties of LDH-related mixed oxides deposited on Al<sub>2</sub>O<sub>3</sub>/Al support, Kovanda, František; Jiráťová, Květa
- 9:30 9:50 New chalcogenide glasses in the CdTe-AgI-As<sub>2</sub>Te<sub>3</sub> system: Conductivity and silver tracer diffusion measurements, Kassem, M.; Alekseev, I.; Le Coq, D.; Bychkov, E.
- 9:50 10:10 **Coffee break**
- 10:10 10:40 **Tuning of the band-gap of LaSi<sub>3</sub>N<sub>5</sub> ternary nitrides via Eu-doping: Experimental and DFT study, Lenčář, Z.; Benco, L.; Šajgalík, P.; Zhou, Y.; Hirao, K.; Velič, D.**
- 10:40 11:00
- 11:00 11:20 Up-conversion properties through site selective doping of hexagonal KLaF<sub>4</sub>, Nagarajan, Rajamani; Neetu Tyagi; Shahzad Ahmad
- 11:20 11:40 Production and application of advanced W-based nanopowders, Tolochko, O.; Blinov, .N.; Vasilyeva, E.; Klimova, O.; Kim B.-K.
- 11:40 13:15 **Lunch**

**Analysis and Characterization of Solids. Chairpersons: T. Matys Grygar, G.D. Pirngruber**

- 13:15 13:45 **The characterization of iron zeolites, Pirngruber, Gerhard D.**  
Highlights on Fe<sup>3+</sup> complexes on CeO<sub>2</sub> structure coupling Electron Paramagnetic Resonance, Mössbauer spectroscopy and Transmission
- 13:45 14:05 Electron Microscopy techniques. Correlation between CeO<sub>2</sub>:Fe<sup>3+</sup> microstructure and reactivity properties, Feral-Martin, Cédric; Duttine, M., Wattiaux, A.; Demourgues, A.; Jolly, J.; Pavageau, B. and Majimel, J.
- 14:05 14:25 Zinc oxide scaffolds on MgO nanocubes, Diwald, Oliver; Stankic, Slavica; Sternig, Andreas; Finocchi, Fabio; Bernardi, Johannes
- 14:25 14:45 **Coffee break**
- 14:45 15:15 **High resolution NMR of inorganic solids. From simple characterization to NMR crystallography, Dědeček, Jiří**
- 15:15 15:35 The size controlled growth and the field emission properties of Sn-doped AlN nanostructures by HVPE method, Park, Young-Jong; Choi, Jae-Seok; Park, Min-Hye; Choi, Sung-Churl
- 15:35 15:55 Pressure-induced multiphase state generation and phase transitions in semiconductors analyzed by Raman scattering, Pizani, Paulo Sergio and Jasinevicius, Renato Goulart
- 15:55 16:15 First order phase transition and optical properties of Co<sub>1-x</sub>Mg<sub>x</sub>MoO<sub>4</sub> and Co<sub>1-x</sub>Zn<sub>x</sub>MoO<sub>4</sub>, Robertson, Lionel; Gaudon, M.; Penin, N.; Gorse, S. and Demourgues, A.
- 
- 16:15 17:45 **Inorganic Materials 3. Posters**  
**Analysis and Characterization of Solids. Posters**
- 19:15 **Farewell Dinner (not included in registration fee). New Town Restaurant Brewery, Prague City centre**

**Tuesday, September 14, 2010**

**16:15 - 17:45 Poster sessions**

Poster  
ID

### **Inorganic Materials 3**

- |       |   |                                       |
|-------|---|---------------------------------------|
| Tu 1  | Hydrogen production from steam reforming of bio-alcohols on the molybdenum-antimony oxides catalysts  | <a href="#">Filipek, E.</a>           |
| Tu 2  | Structural and morphological study of mechanochemically synthesized tin diselenide  | <a href="#">Achimovičová, M.</a>      |
| Tu 3  | Preparation and characterization of $\text{Sb}_6\text{O}_{13}$ nanocrystals by hydrothermal method  | <a href="#">Alemi, A.A.</a>           |
| Tu 4  | Mechanochemical synthesis of $\text{BaTiO}_3$   | <a href="#">Fabián, M.</a>            |
| Tu 5  | Formation of micronanocomposite powders in CuO-FeSi system by soft mechanochemical processing   | <a href="#">Wieczorek-Ciurowa, K.</a> |
| Tu 6  | Mechanochemical synthesis of copper-doped calcium titanate  | <a href="#">Wieczorek-Ciurowa, K.</a> |
| Tu 7  | Phase formation upon reduction of vanadium, niobium, and tantalum pentoxides with aluminium nitride   | <a href="#">Larionov, A.V.</a>        |
| Tu 8  | Phases forming in the solid state in the system $\text{FeVO}_4 - \text{Cu}_3\text{V}_2\text{O}_8$   | <a href="#">Blonska-Tabero, A.</a>    |
| Tu 9  | Synthesis and characterization of Indium– borate glass-ceramics containing $\text{Ho}_{0.01}\text{Ce}_{0.74}\text{Zr}_{0.25}\text{O}_{1.995}$ nanorods via incorporation method | <a href="#">Alemi, Abdolali</a>       |
| Tu 10 | Obtaining of indium(III) phosphates(V) in the solid state and their thermal stability   | <a href="#">Bosacka, Monika</a>       |
| Tu 11 | Synthesis and characterization of iron(III)phosphate  | <a href="#">Baykan, Demet</a>         |
| Tu 12 | Phase relations in the solid state in the $\text{V}_2\text{O}_5\text{-Nb}_2\text{O}_5\text{-Sb}_2\text{O}_4$ ternary system   | <a href="#">Filipek, Elzbieta</a>     |
| Tu 13 | Trends observed in phase diagrams of binary systems lanthanide bromide – alkali metal bromide   | <a href="#">Ingier-Stocka, Ewa</a>    |
| Tu 14 | Synthesis and basic properties of new solid solutions in the $\text{FeVSbO}_6\text{-CrVSbO}_6$ system   | <a href="#">Dabrowska, G.</a>         |
| Tu 15 | Metallic cements obtained by interaction of mechanocomposite Cu/Bi with liquid gallium  | <a href="#">Grigoreva T. F.</a>       |
| Tu 16 | Solid-phase oxidation of sulphide-metal alloys of copper and nickel   | <a href="#">Gulyaeva, R.I.</a>        |
| Tu 17 | The thermodynamic properties of solid compounds in $\text{ABr-LnBr}_3$ (A = K, Rb, Cs, Ln = Ce, Pr) systems   | <a href="#">Kapała, Jan</a>           |
| Tu 18 | New silica containing hydroxyapatite coatings by flame spraying deposition  | <a href="#">Bizo, Liliana</a>         |
| Tu 19 | Epitaxy of elastically strained layers of Zn-Cd-Te solid solutions  | <a href="#">Moskvin P.P.</a>          |
| Tu 20 | New phases in the $\text{BaMn}_{0.85}\text{Ti}_{0.15}\text{O}_{3-\delta}$ system: Structure-properties relationships of 4H and 9R-polytypes.                                    | <a href="#">Parras, M.</a>            |
| Tu 21 | Stabilization of a distorted tetragonal $\text{ANbO}_4$ and preparation of pyrochlore-type $\text{A}_3\text{NbO}_7$ compounds (A = Y, Ln) from molecular precursors             | <a href="#">Deligne, Nicolas</a>      |
| Tu 22 | Crystal structure of lithium inserted $\alpha\text{-MnO}_2$   | <a href="#">Kijima, Norihito</a>      |
| Tu 23 | Structure transformation of $\text{CuRh}_2\text{O}_4$   | <a href="#">Kijima, Norihito</a>      |
| Tu 24 | Structure and phase composition of V-Al-N alloy   | <a href="#">Chumarev, V.M.</a>        |
| Tu 25 | Preparation of nickel-containing porous zirconia  | <a href="#">Peters, Andreas</a>       |
| Tu 26 | Studies on $\text{Ni}_2\text{FeVO}_6$ and $\text{FeNb}_{49}\text{O}_{124}$ by the help of IR and Mössbauer spectroscopy   | <a href="#">Tabero, Piotr</a>         |
| Tu 27 | Synthesis of $\text{FeNb}_{11}\text{O}_{29}$ by the solution method   | <a href="#">Tabero, Piotr</a>         |

- Tu 28 Synthesis and characterization of new  $\text{CuMo}_x\text{W}_{1-x}\text{O}_4$  solid solution Tomaszewicz, E.
- Tu 29 Sorption of  $\text{Cd}^{2+}$  and  $\text{As}^{3+}$  ions by mechanochemical activated olivine  $(\text{Mg,Fe})_2\text{SiO}_4$  Turianicová, Erika
- Tu 30 Physical and structural properties of  $\text{TeO}_2\cdot\text{PbCl}_2\cdot\text{PbF}_2$  glasses, prepared in Au or Pt crucibles, doped with  $\text{Pr}^{3+}$  or  $\text{Er}^{3+}$ , in various chemical forms Trnovcová, Viera
- Tu 31 Transition metal doped zinc oxide Sofer, Zdeněk
- Tu 32 Rapid synthesis of Ga nitrides through ammonolysis Sofer, Zdeněk

Wednesday, September 15, 2010



**Inorganic Materials. Lectures. Chairpersons: D. Sedmidubský, T. Matys Grygar**

- 8:30 8:50 Oriented SrFe<sub>12</sub>O<sub>19</sub> thin films by chemical solution deposition, Buršík, Josef; Bezdička, Petr; Drbohlav, Ivo; Knížek, Karel; Kužel, Radomír
- 8:50 9:10 Phase equilibria and crystal structure of the complex oxides in the Ln – Ba – Co – O (Ln = Nd, Sm) systems, Cherepanov, Vladimir; Gavrilova, Ludmila; Aksenova, Tatyana
- 9:10 9:30 Towards the design of new bismuth oxo-phosphates, Endara, Diana; Huvé, Marielle; Colmont, Marie; Mentré, Olivier
- 9:30 9:50 Perovskites blocks assembly in the cobalt oxy-halides: effects of intra- or inter-blocks chemical substitutions, Iorgulescu, Mihaela; Roussel, Pascal; Tancret, Nathalie; Mentre, Olivier
- 9:50 10:10 Synthesis of functional materials in molten salts, Kuznetsov, S.A.
- 10:10 10:30 Coffee break**
- 10:30 10:50 Search for new multicomponent sulphide phosphors exploiting solution based synthesis methods, Petrykin, Valery; Ohara, Keishiro; Tezuka, Satoko; Kakihana, Masato
- 10:50 11:10 Thermodynamic behaviour of misfit layer cobaltites, Sedmidubský, David; Jankovský, Ondřej; Jakeš, Vít; Leitner, Jindřich; Sofer, Zdeněk
- 11:10 11:30 Magnetic and catalytic properties of copper ferrite nanopowders synthesized from secondary resources, Rashad, M.M.; Mohamed, R.M.; Ibrahim, M.A.; Kamal, F.H.; Ismail, L.F.M.; Abdel-Aal, E.A.
- 11:30 11:50 Solid state properties and anticancer activity of arsenic sulphide As<sub>4</sub>S<sub>4</sub> particles prepared by nanomilling, Baláž, Peter; Fabián, Martin; Bujňáková, Zdenka; Sedlák, Ján; Pastorek, Michal; Cholužová, Danka; Kartachova, Olga; Stalder, Bernhardt
- 11:50 11:55 Closing speech