

## GENERAL PROGRAMME

### July 19

19:00 Dinner and Welcome Party

### July 20

9:15 – 9:30 Conference opening

Chairs: Sergey Krivovichev, Frederic Hatert

9:30 - 10:00 W. Depmeier

Case studies of minerals which became advanced materials.

10:00 - 10:30 N.V. Chukanov, A.I. Kazakov, V.V. Nedelko, I.V. Pekov, N.V. Zubkova, D.A. Ksenofontov, Yu.K. Kabalov, D.Yu. Pushcharovsky

Kinetics and mechanisms of cation exchange and dehydration of microporous titanium and zirconium silicates.

10:30 - 11:00 G.Yu. Ivanyuk, V.N. Yakovenchuk, Ya.A. Pakhomovsky

Where are new minerals hiding?

Coffee break

11:20 - 11:50 A. Wosniak, B. Marler, H. Gies

Zeolites as minerals used for energy conversion and storage.

11:50 - 12:20 I.V. Pekov, N.V. Zubkova, N.V. Chukanov, A.G. Turchkova, Ya.E. Filinchuk, D.Yu. Pushcharovsky

Delhayelite and mountainite mineral families: crystal chemical relationship, microporous character and genetic features.

12:20 - 12:50 I. Rozhdestvenskaya, E. Mugnaioli, M. Czank, W. Depmeier, U. Kolb

Charoite  $(K,Sr,Ba,Mn)_{15-16}(Ca,Na)_{32}[(Si_{70}(O,OH)_{180})](OH,F)_{4.0}\cdot nH_2O$ , as an example of a structure with natural nanotubes.

Lunch

Chairs: Hermann Gies, Oleg Siidra

14:30 - 15:00 L.G. Gerasimova, M.V. Maslova, A.I. Nikolaev

Sorbents from mineral raw materials

15:00 - 15:30 M. Czank, E. Mugnaioli, W. Depmeier

Advantages of the new generations of TEMs in the studies of the structures and real-structures of minerals.

15:30 - 16:00 E. Mugnaioli, U. Kolb “Ab-initio” structure solution of nano-crystalline minerals and synthetic materials by automated electron tomography.

16:00 - 16:20 D.V. Spiridonova, S.V. Krivovichev, S.N. Britvin, V.N. Yakovenchuk

Crystal chemistry of ion-exchanged forms of zorite, a natural analogue of the ETS-4 material.

Coffee break

- 16:40 - 17:10 A. Renno, T. Schlothauer  
Substitution in natural Cu-Tl-Se minerals – a model system for synthetic phases.
- 17:10 - 17:40 M. Weisser, A. Magerl  
Crystallography at the University of Erlangen-Nuernberg.
- 17:40 - 18:10 D. Golovanov  
Some tricks for complicated crystals.
- 19:00 Dinner
- 19:45 - 21:45 Poster/Beer Session

## July 21

Chairs: Wulf Depmeier, Igor Pekov

- 9:30 - 10:00 O.V. Yakubovich  
Microporous vanadylphosphates - perspective materials for technological applications
- 10:00 - 10:30 F. Hatert  
Iron-manganese phosphates with the olivine- and alluaudite-type structures: crystal chemistry and applications
- 10:30 - 11:00 J. Majzlan, P. Glasnák, R. A. Fisher, M. A. White, M. B. Johnson, B. Woodfield, J. Boerio-Goates  
Heat capacity, entropy, and magnetic properties of jarosite-group compounds

Coffee break

- 11:20 - 11:50 S.V. Krivovichev  
Natural layered double hydroxides: new data on cation ordering and superstructures
- 11:50 - 12:20 H. Pöllmann  
Investigations for synthesis and application of metal-metal-hydroxisalts (LDH's)
- 12:20 - 12:50 S.N. Britvin, Y.I. Korneyko, V.M. Garbuzov, B.E. Burakov, E.E. Pavlova, O.I. Siidra, A. Lotnyk, L. Kienle, S.V. Krivovichev, W. Depmeier  
Layered hydrazinium titanate, LHT-9: synthesis and applications

Lunch

Chairs: Astrid Holzheid, Grigory Ivanyuk

- 14:30 - 15:00 T. Schleid  
Geo-inspired phosphors based on rare-earth metal(III) fluorides with complex oxoanions
- 15:00 - 15:30 O.I. Siidra, S.V. Krivovichev, R. Turner  
Layered lead oxyhalides: synthesis-structure-properties.
- 15:30 - 16:00 G. Cruciani  
Perovskites along the join  $YAlO_3$ - $YCrO_3$ : structural relaxation and elastic properties.

16:00 - 16:20 M.G. Krzhizhanovskaya, R.S. Bubnova, S. K. Filatov  
Crystal chemistry and thermal behavior of Cs and Sr borosilicates.

Coffee break

16:40 - 17:00 V.N. Yakovenchuk, E.A. Selivanova, S.V. Krivovichev, Ya.A. Pakhomovsky,  
D.V. Spiridonova, A.G. Kasikov, G.Yu. Ivanyuk  
Ivanyukite group minerals: crystal structure and cation-exchange properties

17:00 - 17:20 M.C. Schäfer, T. Schleid  
Rare-earth metal(III) fluoride oxosilicates derivatized with alkali or alkaline-  
earth elements.

17:20 - 17:40 A.A. Zolotarev, M.S. Avdontseva, S.V. Krivovichev  
Cs-exchange in cuprosklodowskite

17:40 - 18:00 T. Schlothauer, M. R. Schwarz, M. Ovidiu, G. Heide, E. Kroke, E. Brendler, R.  
Moeckel  
Shock wave synthesis of oxygen bearing gamma-Si<sub>3</sub>N<sub>4</sub> in the pressure range  
from 30 to 72 GPa.

18:00 - 18:20 V.N. Yakovenchuk, S.V. Krivovichev, Ya.A. Pakhomovsky, E.A. Selivanova,  
M.S. Avdontseva, G.Yu. Ivanyuk  
Nanoporous titanosilicates of the lintsite-kukisvumite group and their cation-  
exchange properties

19:00 Dinner

## July 22

Chairs: Majzlan Juraj, Sergey Britvin

9:30 - 10:00 R. Kniep  
Biomimetic morphogenesis and nano-composite structure of calcite statoliths  
(Otoconia): an approach towards deeper understanding of a bio-sensor and its  
function.

10:00 - 10:30 O.V. Frank-Kamenetskaya, D. Yu. Vlasov, O.A. Shilova  
Biogenic crystals genesis on a carbonate rock monuments surface: the main  
factors and mechanisms, development of nanotechnology ways of inhibition.

Coffee break

10:50 - 11:20 K. Heide  
Gas release from minerals.

11:20 - 11:50 N.R. Khisina, R. Wirth  
Nanoheterogeneity of (Au,Ag) and Ti,Si-rich microspherules collected during  
gold exploration.

11:50 - 12:20 A. Holzheid, C. Kusebauch, D. Garbe-Schoenberg  
Mineral-fluid interaction in hydrothermal systems at 'liquid-vapour'  
equilibrium conditions: an experimental approach.

Lunch

Chairs: Herbert Poelmann, Nikita Chukanov

- 14:00 - 14:30 O. Oeckler, M. N. Schneider, T. Rosenthal, T. Schröder, P. Urban, F. Fahrnbauer, C. Stiewe, M. Döblinger  
Real-structure effects, diffusion processes and thermoelectric properties of tetradymite-type tellurides and related compounds.
- 14:30 - 15:00 A. A. Tsirlin, O. Janson, and H. Rosner  
Electronic structure and magnetic properties of melanothallite ( $\text{Cu}_2\text{OCl}_2$ ), a gateway to understanding copper oxychlorides.
- 15:00 - 15:20 O. Janson, J. Richter, P. Sindzingre, H. Rosner  
Naturally frustrated: a computational study of spin-1/2 kagome minerals.
- 15:20 - 15:40 R. Möckel, M. Hengst, J. Götze, G. Heide  
 $\text{REECa}_4\text{O}(\text{BO}_3)_3$  (REECOB): new material for high-temperature piezoelectric applications.

Coffee break

- 16:00 - 16:20 E.V. Rosseeva, P. Simon, W. Carrillo-Cabrera, A. V. Zhuravlev, O.V. Frank-Kamenetskaya, U. Schwarz, Yu. Prots, H. Borrmann, I.V. Rozhdestvenskaya, R. Kniep  
Carbonated apatite-(CaF)-organic-nanocomposites-biomaterials and biomimetic synthesis
- 16:20 - 16:40 A.R. Izatulina, Yu.O. Punin, A.G. Shtukenberg, O.V. Frank-Kamenetskaya, V.V. Gurzhiy  
Factors affecting formation and stability of calcium oxalates, main crystalline phases of human urinary tract stones
- 16:40 - 17:40 Conference closing; Discussion
- 19:00 Banquet

**July 23, 24      Field Excursions**