ACCEDEMIA NAZIONALE
DEI LINCEI

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COMMISSION ON INORGANIC
AND MINERAL STRUCTURES

MICRO- AND MESOPOROUS MINERAL PHASES
Mineralogical, Crystallographic and Technological Aspects
December 6-7, 2004
Accademia Nazionale dei Lincei - Via della Lungara 10 - Rome (Italy)

SCIENTIFIC PROGRAMME

Monday, December 6

8.30 – 9.30: Registration
9.30 – 10.00: Opening of the Meeting
10.00 – 10.30: Coffee break
10.30 – 11.00: McCusker, L. B. (Zurich) - IUPAC nomenclature for ordered microporous and mesoporous materials and its application to non-zeolite mineral phases - **Invited**
11.00 – 11.30: Krivovichev, S.V. (St. Petersburg) - Topology of microporous structures - **Invited**
11.30 – 12.00: Rocha, J., Lin, Z. (Aveiro) - Microporous mixed octahedral-pentahedral-tetrahedral framework silicates - **Invited**
12.00 - 12.30: Chukanov, N.V., Pekov, I.V. (Moscow) - Heterosilicates with tetrahedral-octahedral frameworks - Mineralogical and crystal-chemical aspects - **Invited**
12.30 – 13.00: Pekov, I.V., Chukanov, N.V. (Moscow) - Microporous framework silicate minerals with rare and transition elements - Minerogenetic aspects **- Invited**

13.00 – 14.30: Lunch

14.30 – 15.00: Ferraris, G., Gula, A. (Torino) - Polysomatic aspects of microporous minerals – Heterophyllosilicates, palysepioles and rhodesite-related structures - **Invited**
15.00 – 15.20: Quartieri, S., Vezzalini, G. (Messina, Modena) - The "template" effect of the extra-framework species on the high-pressure behaviour of microporous materials
15.20 – 15.40: Blatov, V.A. (Samara) - A method to analyze pores in crystal structures by means of Voronoi-Dirichlet polyhedra
15.40 -16.00: Liebau, F., Küppers, H. (Kiel) - On the determination of pore volumes, pore shapes and migration paths of inorganic micro- and mesoporous materials
16.00 – 17.00: Coffee break and poster session
17.00 – 17.30: Makovicky, E. (Copenhagen) - Microporous and mesoporous sulfides - **Invited**
17.30 – 18.00: Pasero, M. (Pisa): A Short outline of the tunnel oxides - **Invited**
18.00 – 18.20: Zou, X., Tang, L., Li Y., Conradsson, T., Dadachov, M.S. [Stockholm, Mahopac (NY)] - Novel open-framework germanates synthesized by organic templating
18.20 – 18.40: Yakubovich, O.V., Massa, V., Pekov, I.V., Gavrilenko, P.G. (Moscow, Marburg) - Crystal chemical features in a cordierite-sekaninaite series of micro-porous minerals
18.40 – 19.00: Hatert, F., Fransolet, A.-M. (Liège) - Natural and synthetic alluaudite-type phosphates: crystal chemistry and applications

20.30: Conference dinner

Tuesday, December 7

9.00 – 9.30: Bonaccorsi, E., Merlino, S. (Pisa) - Modular microporous minerals: cancrinite-davyne group and CSH phases - **Invited**
9.30 – 10.00: Depmeier, W. (Kiel) - The sodalite family - A simple architecture, but versatile framework structure - **Invited**
10.00 – 10.30: White, T.J., Ferraris, C., Kim, J., Srinivasan, M. (Singapore) - Apatite - An adaptive framework structure - **Invited**
10.30 – 11.00: Coffee break and poster session
11.00 – 11.30: Mellini, M. (Siena) - Micro- to Mesoporous mineral phases - **Invited**
11.30 – 11.50: Croce, G., Milanesio, M., Viterbo, D., Amenitsch, H. (Alessandria, Graz) - A mesoporous pattern created by nature in siliceous spicules from marine sponges
11.50 – 12.10: Gozzi, D., Latini, L. Tomellini, M. (Roma) - Carbon nanotubes and H_2 production
12.10 – 12.30: Kuhs, W.F., Genov, G., Staykova, D., Zeller, A., Techmer, K.S., Heinrichs, T., Bohrmann, G. (Goetingen, Bremen) - Porous microstructures of gas hydrates
12.30 – 12.50: Eliseev, A.A., Napolskii, K.S., Kolesnik, I.V., Lukashin, A.V., Tretyakov, Yu.D., Grigorieva, N.A., Grigoriev, S.V., Vorobiev, A.A., Görnert, P. (Moscow, St. Petersburg, Grenoble, Jena) - The use of mesoporous systems for preparation of one-dimensional ordered magnetic nanowires
12.50 – 13.10: Farzaneh, F., Kazemi, N., Zamanifar, E. (Teheran) - Modified titanium- and vanadium-containing metallosilicates. Mesoporous molecular sieves MCM-41 as selective catalysts for epoxidation of alkenes

13.10 – 14.30: Lunch

14.30 – 14.50: Bieniok, A., Brendel, U., Amthauer G. (Salzburg) - Synthesis and characterization of a microporous cobaltphosphate with the cancrinite framework structure
14.50 – 15.10: Della Ventura, G., Bellatreccia, F. (Roma) - The channel constituents of cancrinite-group minerals
15.10 – 15.30: Usseglio, S., Cocina, D., Vitillo, J., Spoto, G., Zecchina, A. (Torino) - FTIR spectroscopic study of the adsorption of CO and H_2 on Na- and Sr-exchanged ETS-4
15.30 – 15.50: Zanardi, S., Millini, R., Carluccio, L.C., Carati, A., Bellussi, G., Perego, C., Cruciani, G. (Milano, Ferrara) - Synthesis and structure of ERS-12, a new layered tetramethylammonium silicate composed by ferrierite layers
15.50 – 16.10: Goryainov, S.V., Secco, R.A., Huang, Y., Liu, H. (Novosibirsk, London/Ontario) - 1Electrical conductivity of hydrated and dehydrated zeolites A at high pressures
16.10 – 17.10: Coffee break and poster session
17.10 – 17.30: Phonthammachai, N., Krissanasaeranee, M., Gulari, E., Jamieson, A.M., Wongkasemjit, S. (Bangkok) - High surface area and thermally stable TiO_2 synthesized directly from titanium triisopropanolamine precursor
17.30 – 17.50: Garbev, K., Gasharova, B., Stumm, A., Beuchle, G., Stemmermann, P. (Karlsruhe) - Synthesis of microporous C-S-H phases of truscottite-type using unsubstituted and Zn-substituted gyrolite as precursor
17.50 – 18.10: Likhacheva, A.Y., Veniaminov, S.A., Paukshtis, E.A. (Novosibirsk) - On existence of the H-natrolite
18.10 – 18.30: Wącław-Held, A., Fórmaniak, R., Kaleta, W., Nowińska, K (Poznań) - Organometallic rhodium complexes encapsulated in mesoporous molecular sieves
18.30 -19.00: Discussion and closing

POSTER SESSION

1. Alberico, A., Catti, M., Ferraris, G. (Torino, Milano): Synthesis and characterization of the microporous titanosilicate ETS-4
2. Bakakin, V.V., Likhacheva, A.Y., Seryotkin, Yu.V., Sokol, E.V. (Novosibirsk): The crystal structure of pyrometamorphic osumilite: fixation of a minor component Na in (3+3) coordination
3. Bakakin, V.V., Seryotkin, Yu.V. (Novosibirsk): Extraframework structure units in natrolite group minerals
4. Ballirano, P., Maras, A. (Roma): Unusual anionic content of a sodalite-group mineral
5. Batuk, O.N., Kalmykov, S.N., Sapozhnikov, Yu.A. (Moscow): Sorption of Np(V) and Pu (IV) on mesoporous silica.
6. Bellatreccia, F., Della Ventura, G., Piccinini, M. (Roma): A polarized FTIR single-crystal study of synthetic water-poor beryl
7. Blatova, O.A., Ilyushin, G.D., Blatov, V.A. (Samara, Moscow): Sizes of voids and cavities in crystal structures: estimation by Voronoi-Dirichlet polyhedra
8. Bul'bak, T.A., Shvedenkov, G.Yu. (Novosibirsk): Dependence of water content in structural channels on the composition of Fe-Mg solid solutions of microporous cordierite
9. Bul'bak, T.A., Shvedenkov, G.Yu. (Novosibirsk): Experimental study of microporous Mg-cordierite saturation with the C-H-O-N fluid components
10. Burova, L.I, Eliseev, A.A., Lukashin, A.V., Tretyakov, Yu. D. (Moscow): Preparation and optical properties of ZnO nanoparticles inside mesoporous silica matrix
11. Calotescu, L., Boero, V., Franchini-Angela, M. (Torino): Ferrihydrite transformation in the presence of smectite-water suspensions
12. Camara, F., Bellatreccia, F., Della Ventura, G., Mottana, A. (Pavia, Roma): A new member of the cancrinite-sodalite group with a 14 layers stacking sequence
13. Cazzini, E., Catti, M., Ferraris, G. (Milano, Torino): Synthesis, crystallographic and thermal study of the microporous titanosilicate ETS10
14. Chernysheva, M.V., Eliseev, A.A., Kozlov, S.N., Lukashin, A.V., Tretyakov, Yu.D. (Moscow): Magnetic nanocomposites based on porous silicon
15. Chou, C., Cundy, C.S., Garforth, A.A. (Manchester): A novel synthesis route to mesoporous ZSM-5
16. Dem'yanets, L.N., Ilyuishin, G.D. (Moscow): Theoretical crystal-chemistry of microporous *MT*- and *MTP*-frameworks: combinatorial-topological analysis and mechanism of self-assembly from suprapolyhedral clusters for $La_3Ga^{[6]}Ga^{[4]}{}_4Ge^{[4]}O_{14}$ and $La_3Ge^{[6]}Ge^{[5]}{}_2Ge^{[4]}{}_2Ga^{[4]}O_{16}$.
17. Doebelin, N., Armbruster, Th. (Bern): Hydrothermal synthesis of the microporous titanosilicate AM-2 ($K_2TiSi_3O_9 \times H_2O$)
18. Dogan, M., Dogu, G. (Ankara): Pore structures of palladıum ıncorporated alumına pellets
19. Ferdov, S., Kostov-Kytin, V., Petrov, O. (Sofia): Microporous titanosilicates – Synthesis and crystallization fields

20. Frydrych, E., Jankowska, A., Baran, E., Janiszewska, E., Kowalak, S., Foltynowicz, Z. (Poznań): Spontaneous crystallization of zincophosphate sodalite and its modification
21. Ghandi, M., Farzaneh, F., Alizadeh, M., Ghadiri, M., Attar Gharamaleki J. (Teheran): Copper (II) complexes immobilized between silicate layers and substituted MCM-41 as selective catalysts for epoxidation of alkenes
22. Giustetto, R., Bordiga, S., Ricchiardi, G. (Torino):The structure of Maya blue pigment: a palygorskite/indigo complex
23. Ilyushin, G.D., Blatov, V.A. (Moscow, Samara): A classification of microporous zirconosilicates and their analogs by the concept of suprapolyhedral invariant
24. Jankowska, A., Kowalak, S. (Poznań): Thermal structure transformation of zeolites during synthesis of ultramarine analogs
25. Khomenko, V.M., Langer, K., Mottana, A. (Kiev, Berlin, Roma): Aliphatic hydrocarbons in structural channels of cordierite: the dervio-colico cordierite case study
26. Khomyakov, A.P. (Moscow): Zeolite-like amphoterosilicates of hyperagpaitic rocks and their unique properties
27. Kostov-Kytin, V., Kalvachev, Yu. (Sofia): Hydrothermal synthesis and characterisation of novel sodium zircono silicates
28. Kuanchertchoo, N., Kulprathipanja, S., Aungkavattana, P., Atong, D., Rirksomboon, T., Wongkasemjit, S. (Bangkok): Effect of synthesis parameters on the formation of uniform and small size of NaA zeolite crystal by microwave technique
29. Lin, Z., Rocha, J. (Aveiro): Tin analogue of penkvilksite-2*O*
30. Mauri, M., Simonutti, R., Sozzani, P. (Milano): Continuous flow Xe-OPSE NMR applied to the characterization of porous materials
31. Miroshnichenko Yu.M., Goryainov S.V. (Novosibirsk): Effect of pressure and duration time on amorphization of leucite and ammonioleucite
32. Montes-H, G., Fritz, B. (Strasbourg): Several textural properties of compacted and cation-saturated bentonite
33. Muidinov, M.R. (Chernogolovka): Development of new methods for surface modification of fine mesoporous oxide materials by graft polymerization of perfluoromonomers
34. Nalbant, A., Dogu, T., Balci, S. (Ankara): Synthesis and characterisation of Cu-MCM-41 type catalytic materials
35. Nazarchuk, E.V., Krivovichev, S.V. (St. Petersburg): Conformations of chiral open-framework uranyl molybdates
36. Nèmeth, P., Gula, A., Ferraris, G. (Torino): Towards pillared heterophyllosilicates? Suggestions from Nature
37. Passaglia, E., Poppi S., Azzolini P., Gualtieri A. F. (Modena, Castelnuovo di Sotto): Reduction of Na content of irrigation waters using Italian zeolitite
38. Pawlesa, J., Janiszewska, E., Supronowicz, W., Katovic, A., Giordano, G., Kowalak, S. (Poznań, Rende): Preparation and characterization of metallosilicalites
39. Pertierra, P., Salvadó, M.A., García-Granda, S., Khainakov, S.A., García, J.R. (Oviedo): $K_2MSi_3O_9 \cdot H_2O$ synthetic compounds with the structure of umbite (M = Sn) and kostylevite (M = Pb) minerals

40. Robu, L., Robu, I.N., Rusu, C. (Bucharest): Natural zeolites belonging to volcanic tuffs of the Transylvanian basin (Romania)
41. Rozenberg, K.A., Rastsvetaeva, R.K., Khomyakov, A.P. (Moscow): Decationized and hydrated eudialytes. Oxonium problem
42. Sapozhnikov, A.N. (Irkutsk): Influence of the chemical composition on the framework configuration of cancrinite-like minerals
43. Seryotkin, Yu.V., Bakakin, V.V. (Novosibirsk): Monoclinic tetranatrolite as a partial dehydrated derivative of high-potassium paranatrolite: crystal structure and crystal chemistry
44. Seryotkin, Yu.V., Bakakin, V.V., Fursenko, V.A., Belitsky, I.A., Joswig, W., Radaelli, P.G. (Novosibirsk, Toronto, Frankfurt, Didcot): Structural study of natrolite over-hydration at high pressure
45. Sommariva, M., Catti, M., Comotti, A. (Milano): Alkali ion disorder in $(Na,Li)_2FeTi(PO_4)_3$ and $(Na,Li)_2FeZr(PO_4)_3$ NASICON phases by neutron diffraction
46. Thanabodeekij, N., Tanglumlert, W., Gulari, E., Wongkasemjit, S. (Bangkok): Effects involving the formation of extremly high surface area MCM-41
47. Turchkova, A.G., .Pekov, I.V. (Moscow): Cation-exchange properties of natural zorite
48. Váczi, T., Gula, A. (Budapest, Torino): Structural and chemical data on an optically monoclinic variety of natrolite
49. Vyacheslavov, A.S., Burov, S.A., Eliseev, A.A., Lukashin, A.V. (Moscow): Iron-containing magnetic nanocomposites based on mesoporous aluminosilicates and zeolites
50. Wongkasemjit, S. (Bangkok): Novel metal alkoxides as high surface area and uniform metal oxide precursors
51. Zaitsev, V.A., Krigman, L.D., Kogarko, L.N. (Moscow): Melting of lamprophyllite group minerals: experimental data and natural applications.
52. Zolotarev, A.A., Krivovichev, S.V. (St. Petersburg): Structural mechanics of octahedral-tetrahedral framework in the labuntsovite-group minerals