“H III” Lecture Hall – Tuesday 6 April 2004

08.15 – 08.45 **Jeremy Fein** – invited : *Bacterial cell wall adsorption: The first step in biomineralization*

S01 Biomineralisation, mineral surface properties and solution chemistry

Conveners: **Dirk Bosbach, Roy Wogelius**

08.45 – 09.00 **Kate Wright**
Simulating the structure and properties of mineral surfaces

09.00 – 09.15 **Roy Wogelius**
Classifying Mineral Surfaces During Reaction

09.15 – 09.30 **Guntram Jordan, Kirill Aldushin, Wolfgang Schmahl, Werner Rammensee**
On the alteration of sheet silicates in aqueous solutions

09.30 – 09.45 **Melissa A. Denecke, Dirk Bosbach, Kathy Dardenne, Jörg Rothe**
P-GIXAFS study of uranyl sorption onto natural calcite

09.45 – 10.15 **COFFEE AT THE COFFEE CORNER IN THE EXHIBITION AREA**

10.15 – 10.30 **Dirk Bosbach, Thomas Rabung, Kathy Dardenne, Thomas Fanghaenel**
Trivalent actinide coprecipitation with powellite ($CaMoO_4$)

10.30 – 10.45 **Ludovit Kubicar, Vlastimil Bohac, Viliam Vretenar, Piero Tiano**
Thermophysical Analysis of Sandstone in Dry and Saturated Stage by Pulse Transient Method

10.45 – 11.00 **Jens Glowacky, Annette Wefer-Roehl, Bernd Preindl, Andreas Gerdes**
Transport and chemical reaction of silan in cement based materials

11.00 – 11.15 **Ellina Sokol, Elena Nigmatulina, Natalya Maksimova, Alexander Chiglintsev**
Kidney as a growth system

11.15 – 11.30 **Piero Tiano, Emma Cantisani, Ian Sutherland, Jenny Paget**
Biomediated Reinforcement of Weathered Calcareous Stones

11.30 – 11.45 **Charles A. Geiger, Boris Kolesov**
Molecule - mineral surface interactions in nanoporous silicates: A Raman investigation

11.45 – 12.00 **Arona Diouf, Gerald Friedman**
The role of bacterial surface in chemical processes of biogenic iron in the environment. " A proposed method of biogenic metals removal from petroleum and aqueous systems"

12.00 – 13.15 **LUNCH**

08.15 – 08.45 **Gillaume Fiquet** – invited : *New Experimental Constraints on Earth's Mantle and Core Structure and Composition*

S05 Planets, planetary interior, meteorites and solar system material

Conveners: Astrid Holzheid, Guy Libourel

08.45 – 09.00 **Yingwei Fei, Mark Frank, Kenji Mibe, Guoyin Shen, Vitali Prakapenka**
P-V-T Equation of State of Al-bearing Silicate Perovskite and Its Implications for Mantle Composition Models

09.00 – 09.15 **Isabelle Daniel, Jay Bass, Guillaume Fiquet, Michael Hanfland**
Effects of Aluminium on the Compressibility of Silicate Perovskite

09.15 – 09.30 **Christian Liebske, Alexandre Corgne, Daniel J. Frost, Bernard J. Wood, David C. Rubie**
Effects of Al on Mg-silicate perovskite composition and trace element partitioning

09.30 – 09.45 **Jean-Philippe Perrillat, Angèle Ricolleau, Isabelle Daniel, Guillaume Fiquet, Mohamed Mezouar, Hervé Cardon**
Phase Transformations of MORB in the Lower Mantle

09.45 – 10.15 **COFFEE AT THE COFFEE CORNER IN THE EXHIBITION AREA**

10.15 – 10.30 **Artem R. Oganov, G. David Price, Michael J. Gillan**
Phase diagrams of minerals from ab initio simulations.

10.30 – 10.45 **Falko Langenhorst, Alexander Deutsch, Ulrich Hornemann**
Experimental study on the shock behaviour of anhydrite

10.45 – 11.00 **Philip Kegler, Astrid Holzheid, Dan Frost, Dave C. Rubie, Herbert Palme**
Reinvestigation of the metal/silicate partition behavior of Ni and Co.

11.00 – 11.15 **Alice Toppani,Alice Toppani, Guy Libourel, François Robert, Jaafar Ghanbaja, Laurent Zimmermann**
Experimental condensation of gas of solar composition

11.15 – 11.30 **Ingo Alexander Vogel, Herbert Palme**
Activity Coefficients of Silicon in FeNi-alloys: Experimental Determination and Implications for Core Formation in Asteroids

11.30 – 11.45 **Andreas Pack, Herbert Palme, Michael Shelley**
Olivine-melt trace element partitioning and formation of meteoritic forsterites

11.45 – 13.10 **LUNCH**

S07 Mineral chemistry

Convener: **Dave Dobson**

13.15 – 13.30 **Monica Dapiaggi, Charles A. Geiger, Gilberto Artioli**
Microscopic Strain-Thermodynamic Relationships in Garnet Solid Solutions: A Synchrotron Study

13.30 – 13.45 **Ulrich Bläß, Tiziana Boffa-Ballaran, Dan Frost, Falko Langenhorst, Catherine McCammon, Friedrich Seifert, Peter van Aken**
Exchange of Silicon by Trivalent Cations of Iron or Aluminium in Calcium Silicate Perovskite

13.45 – 14.00 **Monika Koch-Müller, Przemyslaw Dera, Yingwei Fei, Holger Hellwig, Zhenxian Liu, James van Orman, Richard Wirth**
Polymorphic Phase Transition in Superhydrous Phase B

14.00 – 14.15 **Maria Franca Brigatti, Daniele Malferrari, Luca Medici, Luisa Ottolini, Luciano Poppi**
Crystal chemistry of apatite coexisting with phlogopite and tetra-ferriphlogopite

14.15 – 14.30 **Tatiana L. Evstigneeva, Nikolaj V. Trubkin, Volker von Seckendorff**
Experimental study of Pt-Pd-Ni monosulfides: problems and solutions

14.30 – 14.45 **Frédéric Hatert, André-Mathieu Fransolet**
Crystal chemistry of the $Na_2(Mn_{1-x}Fe^{2+}_x)_2Fe^{3+}(PO_4)_3$ alluaudite-type solid solution

14.15 – 15.15 **COFFEE AT THE COFFEE CORNER IN THE EXHIBITION AREA**

15.15 – 15.30 **Roland Stalder**
Influence of transition metals on hydrogen incorporation in orthopyroxene

15.30 – 15.45 **Sergey Balitsky, Galina Bondarenko**
IR -spectra of synthetic topaz grown from supercritical fluids based on light and heavy water and their mixtures

15.45 – 16.00 **Fernando Camara, Roberta Oberti, Giancarlo Della Ventura, Walter V. Maresch, Mark D. Welch**
Structure and Phase Transition of Synthetic Na Na_2 Mg_5 Si_8 O_{22} $(OH)_3$

16.00 – 16.15 **Vladimir Taroev, Anvar Kashaev, Dimitriy Pushcharovsky, Julia Lebedeva, Joerg Goettlicher, Herbert Kroll, Vitaly Lashkevich, Ludmila Suvorova, Horst Pentinghaus**
On phase composition and structure of $K(Fe,Al)Si_3O_8$

16.15 – 17.00 **POSTER PREVIEW** **Chair: Alan Woodland**

17.00 – 18.30 **REFRESHMENTS AND POSTER SESSION**

19.30 **CONFERENCE DINNER**

S06 Experiments under extreme conditions and novel techniques

Conveners: Isabelle Daniel, Yingwei Fei

13.15 – 13.30 **Max W. Schmidt, Maik Pertermann**
A Centrifuging Piston Cylider - 3000 g at 18 kbar, 1600 ˚C

13.30 – 13.45 **Motohiko Murakami, Kei Hirose, Katsuyuki Kawamura, Nagayoshi Sata, Yasou Ohishi**
Phase Transition of $MgSiO_3$ Perovskite in the Deep Lower Mantle

13.45 – 14.00 **Liudmila Chudinovskikh, Reinhard Boehler**
Improved techniques for phase equilibria studies in the laser-heated diamond cell

14.00 – 14.15 **Satoru Urakawa, Ryota Ando, Eiji Ohtani, Yoshinori Katayama**
Application of X-ray Absorption Method to Density Measurement of Iron-bearing Sodium Disilicate Glass under Pressure

14.15 – 14.30 **Peter Groen, Vladimir Kogan**
Structural characterization of samples in sealed containers by means of advanced XRD technique

14.30 – 14.45 **Oliver Spieler, Donald B. Dingwell**
Shock Tube Experiments on Molten Volcanic Rocks

14.45 – 15.15 **COFFEE AT THE COFFEE CORNER IN THE EXHIBITION AREA**

15.15 – 15.30 **Fred Blaine, Robert Linnen, Francois Holtz, Brian Fryer, Gerhard Brügmann**
Crystallization entrapment method applied to fluid-melt partitioning of platinum in basaltic systems

15.30 – 15.45 **Yuri Pal'yanov, Alexander Sokol, Anatoly Tomilenko, Nikolay Sobolev**
Conditions of Diamond Formation Under Carbonate-Silicate Interaction

15.45 – 16.00 **Vladimir Litvin, Yuriy Litvin, Arnold Kadik**
Kinetic Barriers to Diamond Nucleation in Silica-Rich Silicate-Carbonate-Carbon Melts by Experimental Data at 5.5-8.5 GPa

16.00 – 16.15 **Ulrich Anton Glasmacher, Maik Lang, Hans Keppler, Falko Langenhorst, Reinhard Neumann**
Heavy-ion irradiation of solids at extreme pressures: Ion track formation and high-pressure phases

16.15 – 17.00 **POSTER PREVIEW** **Chair: Yann Lahaye**

17.00 – 18.30 **REFRESHMENTS AND POSTER SESSION**

19.30 **CONFERENCE DINNER**

Poster session

Exhibition and poster area - Tuesday, 6 April 2004

Beer sponsored by Soliton GmbH and Bitburger

S 01 Biomineralisation, mineral surface properties and solution chemistry

SO1PO1

Arona Diouf, Gerald Friedman
The Role of Iron Bacterial in Chemical Processes of Metal Ions in aqueous and oil reservoirs systems: A Magnetic Remediation Method.

SO1PO2

Vladimir Samodurov, Puri Fenoll Hach-Ali, James Baker, Anatoly Litovchenko, Alexandr Pushkarev, Grigory Kovalenko
Tritium labelling of phyllosilicate reactivity for clayey barriers study

SO1PO3

Andrey Kovalskii, Alexey Kotelnikov, Vera Tikhomirova, Valeria Suvorova, Galina Akhmedzhanova
Mineral Phase Equilibria due to the Problem of Radionuclides Immobilization

SO1PO4

Giovanni Ferraris, Angela Gula
Micro- and Mesoporous Mineral Phases - Action in Nature and Inspiration for Materials Science

SO1PO5

Qi Li, Suwei Shao, Zhimin Cao, Renhua Kang
Petrological Features of Paleogene Lacustrine Oil Source Rocks in Zhanhua Depression, Eastern China

SO1PO7

Noboru Furukawa, Koji Kameo
Crystallographic direction of coccolith elements of the marine alga Florisphaera profunda,Umbellosphaera and its fossil group, Discoaster

SO1PO8

Yulia Simakova
Biochemogenic formation of volkonskoite

SO1P10

Dmitry Vorontsov, D. Portnov, Dmitry Filatov
The study of the adsorption impurities influence during water-soluble crystals growth

SO1P11

H. Pieper, D. Bosbach, P. J. Panak, K. Dardenne, J. Rothe, Th. Rabung, M.A. Dennecke, Th. Fanghaenel
Cm(III)/Eu(III)- coprecipitation with trioctahedral smectite (hectorite)

S 05 Planets, planetary interior, meteorites and solar system material

SO5PO1

Angele Ricolleau, Jean-Philippe Perrillat, Guillaume Fiquet, Isabelle Daniel, Ahmed Addad, Christian Vanni
The fate of subducted basaltic crust in the Earth's lower mantle: An experimental petrological study

SO5PO2

Hidenori Terasaki, David Rubie, Daniel Frost
The Effect of Oxygen Content on the Dihedral Angle between Fe-S Liquid and Perovskite at Lower Mantle Conditions

SO5PO3

Nicolas Cluzel, Bertrand Devouard, Didier Laporte, Hugues Leroux
Wetting Textures in Partially Molten Fe-Ni-S Systems: An Experimental Study With Applications to Meteorites

S 06 Experiments under extreme conditions and novel techniques

SO6PO1

Yuriy Litvin
Diamond and Diamondite Syntheses in Carbonatite-Carbon Melts of Natural Chemistries at 5.5-8.5 GPa

SO6PO2

Anna Spivak, Yuriy Litvin
Diamond Spontaneous and Seeded Growth in Natural-like Carbonate-Carbon System: Boundary Conditions, Kinetics, Nano Aspects (experiment at 5.5 -8.5 GPa)

SO6PO3

Yuri Pal'yanov, Yuri Borzdov, Igor Kupriyanov, Nikolay Sobolev
Diamond and Graphite Crystallization from Pentlandite Melt at HPHT Conditions

SO6PO4

Alexander Sokol, Yury Pal'yanov
Diamond Formation in MgO-SiO_2-H_2O-C System at 7.5 GPa and 1600°C

SO6PO5

Alexander Khokhryakov, Yuri Pal'yanov
Evolution of Diamond Morphology in the Processes of Mantle Dissolution

SO6PO6

Tatyana Shumilova
Kinetic Postcrystallization of Diamond and Graphite at Atmospheric Pressure

SO6PO7

Anastasia Shushkanova, Yuriy Litvin
Experimental liquid immiscibility in sulfide-silicate pyrrhotite-garnet system at 7 GPa: Implication to origin of diamond and syngenetic inclusions

SO6PO8

Wim van Westrenen, Max Schmidt, Andrew Stewart
A spherical multi-anvil press for experiments at lower mantle pressures using sintered diamond cubes

SO6PO9

Osamu Ohtaka, Naoyuki Ohnishi, Katsuyuki Kubo, Hiroshi Arima, Hiroshi Fukui, Takamitsu Yamanaka, Kei Myamoto, Suguru Inamura, Takumi Kikegawa, Masaru Shimono
High-P and high-T generation using SiC-Diamond composite anvils prepared with HIP

SO6P10

Hans Joachim Mueller, Frank Schilling, Christian Lathe, Hans-Josef Reichmann, Joern Lauterjung
X-Radiography in the Multi-Anvil-Device MAX80 under Simulated in situ Conditions

SO6P11

Elena Melekhova, Max Schmidt, Peter Ulmer
The reaction talc + forsterite = enstatite + H_2O: New experimental technique

SO6P12

Michael Burchard, Jan Meijer, Bernd Burchard, Thomas Fockenberg, Walter Maresch
Direct heating of diamond anvils in diamond anvil cells.

SO6P13

Peter Dorogokupets, Artem Oganov
Equations of State of Materials and Revised Pressure Standards for DAC

SO6P14

Sergei Goryainov
Amorphization of natrolite at high pressure

SO6P15

Eugen Kozlov, Vilen Fel'dman, Lyudmila Sazonova
Physicochemical Transformations of Rock-forming Minerals in Weak and Strong Shock

SO6P17

Sebastian Müller, Oliver Spieler, Bettina Scheu, Donald Bruce Dingwell
A new method for unsteady – state permeability measurements of volcanic rocks at high temperatures

SO6P18

Jean – Philippe Perrillat, Isabelle Daniel, Kenneth Koga, Bruno Reynard, Wilson Crichton
Dehydration of antigorite: Real – time XRD study

SO6P19

Jürgen Glinnemann, B. Winkler, L. Nasdala, J.W. Harris
Single-crystal graphite inclusions in natural diamonds

Tuesday Poster Session, 6 April 2004

S 07 Mineral chemistry

SO7PO1

Stephan Klemme
The influence of low-temperature phase transitions on thermodynamic properties of some spinels and garnets

SO7PO2

Vladimir Taroev, Anvar Kashaev, Dimitriy Pushcharovsky, Julia Lebedeva, Joerg Goettlicher, Herbert Kroll, Vitaly Lashkevich, Ludmila Suvorova, Horst Pentinghaus
On phase composition and structure of $K(Fe,Al)Si_3O_8$ feldspars

SO7PO3

Pier Francesco Zanazzi, Paola Comodi, Giacomo Diego Gatta
Structural behaviour of levyne at High-Pressure

SO7PO4

Stanislav Sokolov, Svetlana Yarmishko, NataliaChistyakova
Phase Composition of the Crystallized Melt Inclusions in Chrysolite from Kovdor Massif (Kola Peninsula, Russia)

SO7PO5

Petra Simoncic, Thomas Armbruster
Se incorporation into mordenite: Application of natural zeolites

SO7PO6

Paola Comodi, Patrizia Fumagalli
Crystallochemistry of phlogopite in K-doped lherzolites up to 6.0 GPa

SO7PO7

Shao-Yong Jiang, Qi-Ling LiaoKui-DongZhaoBao-ZhangDaiPeiNi
Mineral Chemistry of Cd-rich Sphalerite from the Giant Jinding Pb-Zn Deposit, Yunnan, China

SO7PO8

Kui-Dong Zhao, Shao-Yong Jiang
Mineral Chemistry of the Qitianling Granitoid and the Furong Tin Ore Deposit in Hunan Province, South China: Implication for the Genesis of Granite and Related Tin Mineralization

SO7PO9

Goran Kniewald, Boris Rakvin, Vladimir Bermanec, Nenad Tomacic
EPR determination of uranium(V) in meta-autunite

SO7P10

Gheorghe Popescu, Grigore Buia, Monica Radulescu
Magmatic and hydrothermal processes associated to the metalogenesis in the eastern carpathians (Romania) – Proposal for plate tectonics model

SO7P11

Liudmila Balitskaya, Galina Bondarenko, Vladimir Balitsky
Features of IR- and Raman Spectra of Quartz Crystals Grown in Heavy Water and Solutions Prepared on its Basis