German Mineralogical Society

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GÜNTHER FRIEDRICH'S 80th BIRTHDAY SYMPOSIUM AND CELEBRATION

An 80th Birthday Symposium celebrating Professor Günther Friedrich's contributions to mineralogy and economic geology was held on Saturday, April 18, 2009, at the RWTH Aachen University. More than 130 of Günther's students, colleagues, and friends packed the Ford lecture theatre in the new SuperC building. The symposium featured a full afternoon of popular lectures by distinguished scientists, including Professor Peter Herzig (Director of the Leibniz Institute of Marines Sciences, IFM-GEOMAR, Kiel, Germany) on the topic "Marine Gas-Hydrates – Science Fiction or Technology of the Future?" and Professor Steve Scott (University of Toronto), who spoke on the subject "Mines in the Deep Ocean – Mineral Resources of the Future." The final speaker of the day was Professor Franz Michael Meyer (Head of the Department of Mineralogy and Economic Geology, RWTH Aachen University), whose lecture was entitled "Search for Gold." The day of talks was capped off by a superb banquet at the Pullman Aachen Quellenhof, featuring Günther's son Peter as the after-dinner speaker. He presented a thoroughly entertaining talk and slide show, many of the pictures secretly provided by "anonymous sources."

Günther Friedrich has dedicated his life to bringing high standards of excellence to the profession of economic geology. In 1954, he obtained his PhD degree from the University of Heidelberg under the guidance of Paul Ramdohr. Subsequently, he joined the staff of the Institute of Mineralogy and Economic Geology at the RWTH Aachen University where he obtained his "Habilitation" in 1962. He spent two years as visiting scientist at the University of Missouri–Rolla and the University of California–Berkeley, and time with the U.S. Geological Survey in Denver and the Geological Survey of Canada in Ottawa. He then returned to Aachen where he accepted the position of professor and head of the Division of Applied Ore Deposit Research. He remained in that position until 1975, when he was appointed Chair of Mineralogy and Economic Geology and promoted to director of the institute. In August 1994, he became "actively retired" from the university and was awarded the title Professor Emeritus for his more than 30 years of dedicated service.

Günther Friedrich's knowledge of ore deposits is expansive, and his remarkable ability to home in on fundamental problems has resulted in a wide range of research interests. For many years, Günther Friedrich´s interests focused on the development of methods of geochemical exploration, including the use of mercury as a pathfinder element. Much of his scientific life, however, was dedicated to the study of marine mineral deposits, and he was a pioneer in manganese nodule research. Numerous cruises to the manganese nodule areas of the Pacific Ocean, were planned and carried out under his guidance. Landmark papers on the formation and the geochemical characteristics of manganese nodules were published by Günther and his colleagues in leading international journals. Later in his career, he concentrated his research on marine placer deposits and polymetallic massive sulfide deposits on the modern seafloor.

Günther Friederich (left) and Michael Meyer

Other topics studied by Günther Friedrich include the mineralogy and geochemistry of the Kupferschiefer deposits; the study of laterite deposits and their gold, chromium, and nickel potential; the formation of alkaline rocks and associated ore deposits; and the genesis of epithermal gold deposits. Within the German Continental Deep Drilling Project, Günther Friedrich took an active role in the study of ore mineralogy and in developing models for ore formation in metamorphic rocks. The formation of ore deposits by intraformational processes was the subject of a long-term priority research program coordinated by Günther Friedrich and funded by the Deutsche Forschungsgemeinschaft. Günther and his students also worked on gold metallogenesis in Africa, which resulted in the discovery of an economic, currently exploited gold deposit. Günther Friedrich's scientific work has been summarized in more than 200 publications and 70 conference abstracts, reflecting his broad scientific interests. His enthusiasm and almost endless energy have been the driving force not only for him but also for many of his students, some of whom are now leading professionals in many different parts the world.

Günther Friedrich's tenure was distinguished by extensive service to the Earth science community, including membership on the Earth Science Committee of the Deutsche Forschungsgemeinschaft (DFG) and several offices in the Society of Geology Applied to Mineral Deposits (SGA), including president in 1982–1984. He was instrumental in the inauguration of the German Forschungskollegium Lagerstätten (FKL) in 1988. He served for many years on the council of the German National Committee for the Geological Sciences to the IUGS and was president and vice-president of the Deutsche Mineralogische Gesellschaft (DMG) in 1990–1993. During this time Günther initiated the idea of raising seed funds for the Paul-Ramdohr Award, which was established by him in 1994. The award is given to a young scientist for presenting an outstanding paper or poster at the DMG annual meeting.

Michael Meyer, RWTH Aachen University

DMG POSTGRADUATE SHORT COURSES

High-Pressure Experimental Techniques and Applications to the Earth's Interior
Bayerisches Geoinstitut Bayreuth • February 15–19, 2010
Contact: Stefan Keyssner (stefan.keyssner@uni-bayreuth.de)
www.bgi.uni-bayreuth.de/ShortCourse2010

Applications of Solid-State NMR Spectroscopy in Mineralogy and Earth Sciences
Ruhr-Universität Bochum • May 25–28, 2010
Contact: Michael Fechtelkord (Michael.Fechtelkord@ruhr-uni-bochum.de)
www.ruhr-uni-bochum.de/dgk-ak12/indexdmgshort.htm

Introduction to Secondary Ion Mass Spectrometry in the Earth Sciences
Geoforschungszentrum Potsdam • October 4–8, 2010
Contact: Michael Wiedenbeck (michawi@gfz-potsdam.de)
www.gfz-potsdam.de/SIMS/

Kinetics of Geological Materials
Universität Wien • August 30–September 3, 2010
Contact: Rainer Abart (rainer.abart@univie.ac.at)
www.for741.de/short_courses.html

X-Ray Absorption Fine Structure (XAFS) Spectroscopy: Introduction, Measurement, Data Evaluation
Synchroton ANKA at Research Center Karlsruhe
(Karlsruhe Institute of Technology) • Fall 2010, duration 3 days
Contact: Jörg Göttlicher (dmgankaphdcourse2010@iss.fzk.de)
http://ankaweb.fzk.de/phdcourse2010/first_page.html

DMG PETROLOGY / PETROPHYSICS SECTION MEETING IN MAINZ

This year's annual meeting of the Petrology / Petrophysics Section of the German Mineralogical Society (DMG) took place on May 15–16, 2009, at the Institute of Geosciences of the Johannes Gutenberg University Mainz. The 55 participants from 13 different German institutes were gathered to share knowledge and experience. Young scientists were given the chance to present their work for the first time in front of an audience of specialists. Collegiate contributions were supported by the DMG with travel grants as in previous years.

Group picture of this year's annual Petrology / Petrophysics Section meeting at the Johannes Gutenberg University, Mainz, Germany. PHOTO: S. BUHRE

After a short introduction by Stephen Foley, the scientific program of 25 talks covering a broad range of scientific themes started on Saturday morning. The chairmen indicated that this workshop should include not only questions from the audience but also explanations by the presenters about problems related to their work; this format led to a provocative exchange of ideas and technical information. The presented research stretched across the globe, including Asia (Tien Shan xenoliths; basalts from Mutnovsky volcano in Kamchatka), North and South America (Mont Saint-Hilaire in Canada; Lascar volcano in the central Andes), Africa (mantle xenoliths from Kimberley, RSA), and Europe (Macedonian ophiolites; Menderes lithosphere in Turkey). The laboratory and field studies touched on all dimensions/layers of our planet, from the Earth's core (e.g. nonideality of core-forming metal phases), through the rocks and minerals of the mantle (e.g. water in wadsleyite; ammonium in high-pressure minerals, etc.), to near-surface crustal processes (e.g. experimental silicification of wood; hydrothermal experiments). It was shown that theoretical modeling can play a supportive role and that analytical methods from other scientific fields, such as medical computer tomography, may have an impact on solving petrological problems. This wide spectrum of topics may have provided new perspectives to those who participated, giving their work a new direction.

The well-organized meeting ended with a delicious BBQ and a camp fire in front of the faculty building. A big "thank you" goes to the organizers from Mainz University, to the DMG for their financial support, to Springer Publishing who provided 100 liters of beer, and to all participants for their contributions and interest.

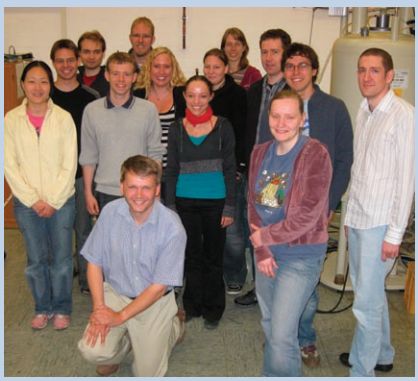
Sarah B. Cichy
Hannover, Germany

SHORT COURSE REPORT – "APPLICATIONS OF SOLID STATE NMR SPECTROSCOPY IN GEOSCIENCES AND MINERALOGICAL RESEARCH" – BOCHUM, 2–5 JUNE 2009

"Du bist keine Schönheit – vor Arbeit ganz grau" (I know you're no beauty, for work's lined your face, from H. Grönemeyer's song "Bochum") – that was the first impression when we arrived in Bochum on Tuesday afternoon (June 2), and that impression was strongly influenced by an apparently never-ending drive of ten hours, with a complete standstill of about six hours on highway A2. The next obstacle to get over was the oversupply of parking opportunities in the university's multi-storey car park (hard to handle for people coming from Berlin and Potsdam). But finally we could get started on the short course.

The course was arranged by the DMG (German Mineralogical Society) and the DGK (German Society for Crystallography), both of which granted financial support to their student members. The group consisted of undergraduate students, graduates and postdocs from all over Germany. The organizer of the course, PD Dr. Michael Fechtelkord of the Institute of Geology, Mineralogy, and Geophysics of the Ruhr-Universität Bochum, started out with a general introduction to NMR spectroscopy. He explained the basics of the method and pointed out its relevance to structure determination and the assessment of dynamic processes in solids. Its advantage over other structure-determination methods (e.g. diffraction) is the possibility of examining short-range order, especially in amorphous solids. Through discussions with other participants, it became apparent that the combination of both methods is the key to structure determination.

The workshop was organized into a theoretical part in the morning and a practical one in the afternoon. The first day started with instructions about the spectrometer. We learned the rules of conduct close to the machine and the details of sample preparation. Afterwards we conducted temperature-dependent experiments on tetramethylammonium iodide in order to determine the activation energies and the correlation times of the different processes (spin-lattice relaxation). Wednesday's topic was the chemical shift and magnetic dipolar interactions between homo- and heteronuclear atoms. The magic angle spinning method was explained theoretically and practically using



Participants in the NMR spectroscopy short course in Bochum

the mineral phlogopite. Analyses of the spectra were conducted using the program WinFit. On Thursday, different multipulse methods were introduced. In the practical part, we determined interatomic distances (H–Si). The last day dealt with electric quadrupolar interactions and different methods related to that subject: double rotation (DOR), multi-quantum magic angle spinning (MQMAS), and satellite transition spectroscopy (SATRAS). The practical part covered analysis of ^{23}Na MAS and ^{27}Al SATRAS spectra.

The short course was very informative and interesting for all participants. The practical application of the theory gave clear insight into the various applications of NMR spectroscopy. The composition of the group, from different geoscientific and materials science backgrounds, helped us to understand how the method can be used in various ways. The social evenings were congenial, and we enjoyed a pleasant atmosphere during the whole workshop.

We would like to thank Michael Fechtelkord and his PhD student Ramona Langner for the organization of these evenings and the workshop as a whole.

Maria Mrosko and **Fiorenza Deon**
Potsdam, Germany

NEXT COURSE • MAY 25-28, 2010