German Mineralogical Society

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NEWS FROM THE *EUROPEAN JOURNAL OF MINERALOGY*

The first year of publication by open access has been finished with volume 32 of the *European Journal of Mineralogy (EJM)*. Some statistics may help to see where we are right now. Altogether, 53 papers were published. Based on the extrapolation of the current submission rate, we can expect many more papers in 2021. Acceptance was 75%, and the time between the final decision by the editorial board and publication of an article decreased to a median value of 26 days – a significant improvement! Reviewers needed, on average, three weeks to submit their reviews (i.e., the required time in the editorial system), and, considering the time needed to write a thoughtful review, we should not demand shorter periods. Some 62% of the papers are from members of the owning or associated national societies (those of Spain, France, Italy, Germany, and the European Association of Geochemistry), and currently for 2021 this is in the same order of magnitude. The *EJM* is a truly international journal: 22 countries are mentioned in the article affiliations, with first authors from Germany and Italy (16% each), China (11%), France and Russia (9% each), and the USA (6%).

Attention PhD students! There is a special offer for PhD students who are members of the DMG. For one paper from your PhD thesis, the DMG will sponsor the article processing charges (APCs). The procedure is simple: once your paper is accepted, please pay the APCs and send us the receipt together with a confirmation letter from your advisor that you are a PhD student. And some additionally important information for everyone: Copernicus will directly ask your university/institution, when you submit your paper, for the charges; many institutions will have a contract by which the APCs are paid.

A forthcoming special issue of the *EJM* will be entitled "Mineralogy of the Built Environment" and will be edited by Carlos Rodriguez-Navarro, Gilberto Artioli, Maria Chiara Dalconi, and Kerstin Elert. Submissions commenced on 1 April 2021 and will remain open until 1 April 2022. The study of materials used in the built environment has long attracted significant research efforts and has only grown in popularity over the last few decades. Mineralogy has been pivotal in these studies, from the analysis of the different mineral components of natural stone and earthen structures, the composition of man-made plasters, mortars, cements, and ceramics (bricks), to the weathering and conservation of the aforementioned materials. Studies should focus on both traditional and novel materials used in the protection and conservation of built heritage, including, but not limited to, lime- , silica- , oxalate- , and phosphate-based materials (e.g., nanolimes and alkoxysilanes). We seek studies that have a focus on the following:

- The analysis of natural and man-made building materials. In particular, studies on the analysis of minerals/phases of different building materials, the phase evolution in cementitious materials (e.g., during processing and setting of lime mortars, gypsum plaster, or cement/concrete), and ceramics (e.g., phase evolution during firing of bricks).
- Mineralogical changes that occur during physical and chemical weathering, as well as during biodeterioration. In particular, the mechanisms that lead to degradation and that involve a phase transformation (e.g., dissolution and precipitation), and/or neoformation (e.g., salt weathering), and clay-related damage (i.e., swelling and shrinking).
- The mineralogical analysis of inorganic conservation materials, their applications, and an evaluation of their effectiveness.

Another new special issue about glass/melt inclusions in igneous and metamorphic rocks is in preparation: the editors will be Elisabetta Rampone, Sylvio Ferreiro, and Marie Edmonds. If you are interested in contributing, please contact the editors or François Holtz for further details.

Gerhard Franz (Berlin)

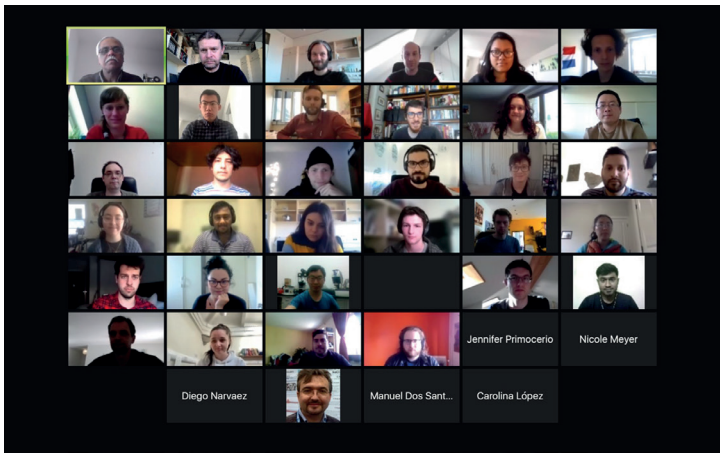
JOINT DMG–MINERALOGICAL SOCIETY OF AMERICA VIRTUAL SHORT COURSE REPORT

Application of Diffusion Studies to the Determination of Timescales in Geochemistry and Petrology

Short course held 19–23 April 2021 at the Institute for Geology, Mineralogy and Geophysics of the Ruhr University Bochum

RUHR UNIVERSITÄT BOCHUM RUB

Dr Sumit Chakraborty and Dr Ralf Dohmen of the Institut für Geologie, Mineralogie und Geophysik, Ruhr-Universität Bochum (RUB) (Germany) ran the workshop Application of Diffusion Studies to the Determination of Timescales in Geochemistry and Petrology. This workshop was a great success and ended 23 April after a week of inclusive lectures and practical sessions. Despite being postponed from October 2020 and held virtually on Zoom (due to the COVID-19 pandemic), the organizers still managed to delicately deliver the art of diffusion modeling from top to bottom to a group of 53 participants from 18 countries, including North America, Europe, Asia, South America, and Africa, the participants being at various stages in their careers.



Some of the participants at the joint MSA–DMG shortcourse on diffusion modeling, held on Zoom.

Diffusion chronometry and geospeedometry have been applied to a wide range of igneous and metamorphic systems to obtain timescales which further shed light on the pace of petrological processes. Within the six-hour window of the course each day, the short course started from basic concepts and the mathematics of diffusion and gradually moved to more advanced topics and areas of active research, including multicomponent diffusion and moving boundary conditions. The lecturers also kindly shared their tips and tricks alongside common mistakes they have encountered on diffusion modeling. "Your model is only as good as how well you understand your petrological system" was one of the most critical take-home quotes from Sumit's lecture. Although easily overlooked, the petrographical and geological contexts are the key sources of information when setting up a model.

Interwoven between lectures were five well-designed practical units that allowed participants to apply the learned concepts and numerical tools to model natural diffusion profiles on their computer. The participants were divided into five groups to facilitate discussion and collaboration; one of the following was responsible for each group: Jennifer Primocerio, Thilo Bissbort, Sampriti Basak, Priyadarshi Chowdhury, Ralf Dohmen. Other than Ralf, all are early career scientists associated with the Bochum group. The practical units started from modeling diffusion profiles using analytical solutions and then finite-difference models in Excel spreadsheets. Then we moved on to create models with composition-dependent diffusivities and learned how to code that in Matlab. The workshop ended on Friday with a big Zoom photo and the lecturers generously providing time for one-on-one discussions.

Although the online setup this year precluded social events – happy hours, networking, and laboratory tours – the workshop still provided an informative and solid introduction for scientists who were interested in applying diffusion chronometry to their research. Special thanks go to the DMG, the MSA, the organization team, and all the teachers from the RUB group for making such a splendid event available during the COVID-19 pandemic.

Kuan-Yu Lin (University of Delaware, USA)

OBITUARY

Ekkehart Tillmanns
29 January 1941 (Münster) – 30 December 2020 (Vienna)

Shortly before reaching the age of 80, Ekkehart Tillmanns passed away unexpectedly at the end of 2020 surrounded by his family in Vienna (Austria).

In the same year, he had been awarded the Abraham-Gottlob-Werner-Medal in Gold by the German Mineralogical Society as the latest significant recognition of his internationally visible work in the field of mineralogical science. His work had, of course, been previously recognized: he had been awarded the Distinguished Grantee Award 1998 of the International Centre for Diffraction Data (ICDD, Pennsylvania, USA), and the Erwin Schrödinger Prize of the Austrian Academy of Sciences in 2002; he was also elected as Foreign Member of the Russian Academy of Sciences (Moscow) in 1999 and was made a Member of the German Academy of Sciences Leopoldina in 2000.

Born in Münster, Ekkehart Tillmanns chose mineralogy as his field of study, and he actively participated in this until the end of his life when he was at the Institute of Mineralogy and Crystallography at the University of Vienna. His path led him first to the University of Tübingen (Germany) in 1961, where he obtained his intermediate diploma in mineralogy in 1964, and then to the University of Göttingen (Germany). There he met the Viennese mineralogist and geologist Josef Zemann, who headed the Institute of Mineralogy and Crystallography and supervised his diploma thesis (completed in 1966). The close link between mineralogy and crystallography characterised his scientific work from then on. At the time, however, he could not have foreseen that 25 years later he would succeed his diploma supervisor as Chair of Mineralogy and Crystallography at the University of Vienna and that he would be able to represent his geoscientific field together with Prof. Zemann in the Leopoldina.

The following two years at the Mineralogical Institute of the Ruhr University in Bochum, which had only recently been founded in 1963, were of formative influence: he began his doctoral work in 1966 and received his Doctor rerum naturalium in 1968. In the working group of his doctoral supervisor Otto Wilhelm Flörke – after whom he later named a new mineral "Flörkeit" from the group of zeolites found by him and his coworkers – he was able to habilitate in 1973 with the thesis "Zur Kristallchemie der Verbindungen im System Bariumoxid-Titandioxid" ["On the Crystal Chemistry of Compounds in the Barium Oxide–Titanium Dioxide System"] and, thus, set the course for a successful university teaching career. In the years 1968–1970, he gained access to modern methods of X-ray crystal structure determination and crystal chemistry as a visiting assistant professor at the Department of Geological Sciences at the University of Illinois in Chicago (USA). The excellent application of crystal structure and chemistry in his work soon earned him high recognition in the scientific community.

With the effective tool of X-ray crystal structure analysis, he was the first to experimentally determine extensive and precise data on the atomic arrangement of a wide range of inorganic and organic solids. He not only used these data in his scientific publications to understand the properties of the substances but he also made them available for quantitative use in all interdisciplinary research projects via relevant international databases.

His path then led him to a professorship in mineralogy and crystallography at the Institute for Geosciences at the University of Mainz (1974–1985) and then another professorship in general mineralogy/crystallography at the Mineralogical Institute of the University of Würzburg (1985–1991), and finally to the Chair of Mineralogy and Crystallography at the University of Vienna (1991–2009). Looking at the results presented in his more than 185 original papers in scientific journals, the following focal points of his work can be identified: 1) the crystal chemistry of minerals and inorganic compounds; 2) the methodical development of the use of X-ray interference; 3) the growth of acentric crystals from aqueous solutions, including the measurement of their physical properties.

Among the substances he studied, he made a special contribution to the group of zeolites, whose fields of application range from catalysts to wastewater purifiers, ion exchangers for water softening, desiccants in dishwashers, and animal feed additives. Because the atomic frameworks are very flexible, there are many opportunities for the structural researcher to specifically modify their properties, i.e., to customise the zeolites.

In addition to his successful work as a researcher and university lecturer, he had been committed to promoting the exchange of scientific ideas in his field, namely in positions of responsibility for the quality of the content of the *Zeitschrift für Kristallographie – Crystalline Materials* (Co-Editor until 2000), the *European Journal of Mineralogy* (Associate Editor until 2002, Chief Editor 2002–2010) as well as the journals *Mineralogy and Petrology* (Co-Editor until 2003) and *Physics and Chemistry of Minerals* (Advisory Board).

Ekkehart Tillmanns was also an active member of national and international mineralogical societies, and he played a formative role in their development. Above all, the German Mineralogical Society (DMG) should be mentioned here, where he was a member of the advisory board (1985–1987) and, later, a representative of the DMG on the board of the Working Group on Crystallography (1988–1991). In the framework of the Austrian Mineralogical Society (ÖMG), where he was a member of the board (1992–1997), he rendered outstanding services to the continuation of the close ties between the DMG and the ÖMG. In recognition of these services, he was elected by the ÖMG as an Honorary Member (2011).

Because of his scientific competence and willingness to constructively contribute to the further development of the field, he was repeatedly entrusted with tasks of international standing. The chairmanship of the Austrian National Committee for Crystallography and – of particular importance – his work with the International Mineralogical Association (IMA) should be mentioned. As IMA Vice-President (2006–2010), IMA President (2010–2012) and as IMA Retired President (2012–2014), he was able to influence the work of this worldwide organisation for eight years, including chairing the major IMA meeting in Budapest in 2010. In his honour, a mineral of the composition $(Ag_3Hg)(V,As)O_4$ from the French Alps was named "Tillmannsite" in 2003.

His IMA functions were, on the one hand, an expression of an extraordinary vote of confidence by the international community of mineralogists and, on the other hand, also a challenging opportunity to help shape the development of the IMA through his own initiatives. In doing so, he succeeded in effectively representing the interests of the Austrian and German professional community at the same time. Furthermore, he paved the way for a large number of students to enter the geosciences: they now gratefully and successfully continue his work. To his wife Uta Tillmanns-Niedereder and the rest of his family we offer our special sympathy. Ekkehart Tillmanns was a knowledgeable and kind colleague. He will be painfully missed.

Peter Paufler (Dresden), **Dirk C. Meyer** (Freiberg)