



## OBITUARY – KARL HANS WEDEPOHL

Karl Hans Wedepohl, one of Germany's leading geochemists, passed away 19 May 2016 at the age of 91.

K.H. Wedepohl began studying mineralogy at Göttingen University (Germany) in 1946 and earned his doctorate degree in 1951 with a thesis on the geochemistry of zinc. In 1956, he earned his habilitated doctorate on the geochemistry of lead. Periods of research at the US Geological Survey and at Scripps Institution of Oceanography in La Jolla (California, USA) formed the basis of his early classic paper, "The Distribution of the Elements in Some Major Units of the Earth's Crust" published jointly with K.K. Turekian (GSA Bulletin, 1961). In 1964, he was appointed to the first geochemistry chair in Germany at the newly established Geochemical Institute at the University of Göttingen.



His early work on the geochemical composition of average shale and the upper continental crust, on the Permian "Kupferschiefer", and on deep-sea clays was based, in the tradition of V.M. Goldschmidt's work in Göttingen, on an excellent analytical chemistry. Wedepohl tried to better constrain the abundance of numerous elements in different geological compartments and to put them into a broader crystal chemical context. This effort led to the first edition of the Handbook of Geochemistry, in which 107 authors (with Wedepohl as Executive Editor) compiled their collective knowledge on all the chemical elements in more than 5,000 pages (Springer-Verlag, with Volume 1 published in 1969). Against this background, Wedepohl was amongst the first geochemists who taught the environmental geochemistry of potentially toxic trace metals.

In the early 1970s, Wedepohl concentrated his studies on the major and trace element distribution of Neogene continental basalt volcanism in the nearby Northern Hessian Depression (Germany). He encouraged his students to not only fully characterize the volcanic rocks petrographically but also to develop and improve on the analytical techniques used to determine their trace elements. By the end of the 1970s, the database he established for hundreds of individual basaltic and nephelinitic rocks was comparable in extent and element coverage to that of the Hawaiian province. It became clear to him that understanding the geochemical signatures of volcanic rocks needs more information on the chemical constitution and evolution of their respective mantle reservoirs, including their metasomatic alteration. Consequently, he initiated geochemical studies of a large number of peridotite xenoliths from Northern Hessian Depression basaltic rocks, along with fresh mantle slices from the Ivrea-Verbano Zone of the Southern Alpine Belt. His work on the trace element signatures of primitive, depleted, and metasomatized peridotites included the most extensive database of subcontinental mantle material at the time.

Wedepohl followed the concept of crust formation by time-integrated growth from the upper mantle volume above the ~700 km mantle discontinuity. He believed that chemical reintegration of the current bulk crust into the depleted mantle should give the primitive Earth upper mantle composition. However, for this kind of model, the geochemistry of one significant geologic compartment was still rather poorly known by the mid-1980s: the continental lower crust. Until his retirement in 1993, this topic drove his scientific efforts, culminating in the publication of his classic late-career paper, "The composition of the continental crust" (Geochimica et Cosmochimica Acta, 1995, pp1217–1232), which has been cited over 3,000 times.

K.H. Wedepohl substantially influenced the development of geochemistry in Germany was active in numerous national and international scientific committees and panels.

After becoming emeritus professor, he started a new area of scientific research by investigating the origins of historical glass, which in 2003 led to the publication of the book *Glas in Antike und Mittelalter: Geschichte eines Werkstoffs* [Glass in Antiquity and the Middle Ages: The History of a Material]. And several articles on historical glass followed. Sadly, he did not live to see the publication of his last article "Glass from Haithabu".

**Hans Brumsack, Jochen Hoefs, Kurt Mengel**

## REPORTS FROM SFMC-SPONSORED MEETINGS

### Association Française de Cristallographie 2016

A meeting of the French Crystallography Association (AFC) was held 4–7 July 2016 in Marseille (France). The session "Minerals, Nanoparticles and Environment" was sponsored by the Société Française de Minéralogie et de Cristallographie (SFMC) and chaired by Armand Masion and Olivier Grauby. The introduction by SFMC president Bertrand Devouard was followed by an invited presentation from Blanche Collin (Commissariat à l'Énergie Atomique, France) and additional presentations from experienced speakers and from junior scientists (e.g. Maureen Le Bars, PhD candidate at Aix Marseille University). The presentations at this well attended session proved lively and fruitful discussions, making the session a success. Definitely an experience to be renewed at the next AFC meeting.



Blanche Collin, CEA-Cadarache, invited speaker (ON THE LEFT) and Maureen Le Bars, PhD candidate (ON THE RIGHT)

### International Cement Microscopy Association Annual Meeting

The 38<sup>th</sup> International Conference on Cement Microscopy, co-sponsored by École des Mines de Douai, took place 10–13 April 2016 in Lyon (France) with around 90 delegates from 20 countries in attendance. It was a great success. Over 30 technical presentations and two panel discussions were given on a diversity of topics relating to cement and concrete and they illustrated well the value of microscopy techniques. Topics included clinker phase composition and clinker manufacturing processes, properties of mortars and concrete that contain supplementary cementitious materials or fillers, alkali activated blended cementitious systems, hydration of sulfo-aluminate cements and belite cements, pure phase studies, influence of admixtures, quantitative analyses and complimentary techniques, and historical aspects (durability and restoration).

The final day of the conference consisted of a visit and tour of the Lafarge-Holcim Research Centre, L'Isle d'Abeau (France). Additional technical presentations were given by Lafarge-Holcim personnel on aspects of their current research, followed by a buffet lunch in their showroom where various products and technologies were on display. After lunch, there was a tour of the research centre's laboratories and a visit outside to Lafarge-Holcim's fascinating display of concrete types.

The SFMC offered a grant to PhD student Angélique Rousselet (Civil and Engineering Department, École des Mines de Douai) to attend. Cement and mineralogy have long been intimately linked. It is worth noting that several illustrious past members of the SFMC are well remembered even now for their research into cement and concrete: Georges Friedel, after whom Friedel's salt was named; and Henry Le Chatelier, who was the first to investigate Portland cement clinker under the optical microscope. More information about ICMA can be found online at [www.cemmicro.org](http://www.cemmicro.org)



PhD student Angélique Rousselet