



Dr. Kurt Scheersmidt and Prof. Wolfgang Neumann

## Personal reflections

As Professor Wolfgang Neumann approaches his 65<sup>th</sup> birthday and retirement looms, we should reflect on his long and successful career. His life and career have been influenced by three social systems, mostly constraining, but yielding enormous experiences, and as times change, the stages of his life looks like a causal loop.

Wolfgang Neumann was born on October 25<sup>th</sup>, 1944 in Großwöhlen (Sudeten). Neither the time nor the place of the circumstances was favorable: the Second World War turned against the aggressors, the front came closer, and expulsion became a mass phenomenon. The main impressions Wolfgang gives when he tells of his childhood – and Wolfgang is an excellent story teller! - the misery and misfortune of being a refugee in 1946 with his parents Alma (maiden name Rehnel) and Adolf, and their difficulty of being responsible for five people. The first chance for safe haven was Neustrelitz (Mecklenburg), but there was no possibility for his father to find work as a building fitter. A more promising place was found in 1950 coming to the Berg- und Rosenstadt (“town of mining and roses”) Sangerhausen. There his father could work as a blaster in pot-ash mining. Could this have sparked Wolfgang’s interest in mineralogy and crystallography? Wolfgang was also influenced by two other events. Like most people in mining, his father received as partial wage payment a poor quality liquor called *Deputatschnaps* (also known as *Kumpeltod*) that was often traded for food, which was far better in reducing unhappiness and tragedy at the time. Not far from Sangerhausen, Martin Luther was born and died in Eisleben. Luther was the basis for new experiences of Wolfgang’s catholic family tradition, and for Wolfgang’s first career as an altar boy. Luther is also well-known for his 95 Theses in Wittenberg and thus the inventor of scientific poster sessions, which are fundamental for contemporary scientific presentation.

Wolfgang's education in Sangerhausen started in 1951 in primary school, continued in the extended secondary school (Erweiterte Oberschule *Geschwister Scholl*), and finished in 1963 with his maturity exam. Afterwards, he went to Berlin to study mineralogy and crystallography at Humboldt University. There he obtained his Diploma in Mineralogy in 1968 with the work entitled "Hochvakuumaufdampfung von Cadmiumselenid auf kubische Trägerkristalle." His work was supervised by the famous crystallographer Will Kleber, demonstrating both his experimental ability and crystallographic affinity. Wolfgang's fellowship at the Institute of Physical Chemistry at the Academy of Sciences was interrupted by his military service in Neustrelitz. A curious coincidence, because it was there that his father didn't find any work! - He had been a Research Fellow at the Institute of Solid State Physics and Electron Microscopy at the Academy of Sciences in Halle/Saale from 1970-1991. There he was awarded his Ph.D. in 1983 with the thesis "Transmissionselektronenmikroskopische Untersuchungen des Systems Silicium/Spinell" under the supervision of Heinz Bethge and Johannes Heydenreich. New experiences were important at this time, in particular because the experimental handling of the electron microscope had to be supported by theoretical contrast simulations. These simulations were an extremely challenging job, especially when employing the Russian computer BESM6. Originally developed for missile control, the BESM6 had hardly any periphery, and there was always trouble with its punch cards. A further experience: In 1970 Wolfgang married Ingrid Müller and had two children. He was now a family man with new responsibilities.

After Germany's reunification, the aforementioned institute in Halle was transformed into the Max Planck Institute of Microstructure Physics, where Wolfgang was a member of the scientific staff from 1992-1995. In addition, he taught at the Chemistry Department of Martin Luther University in Halle. From the Martin Luther University he also received his "Habilitation" degree in Applied Physics in 1993 for the thesis "Zur Korrelation von Kristallsymmetrie und Feinstruktur von Elektronenbeugungsdiagrammen." These investigations, inspired and performed together with our colleague and friend Jiri Komrska from the Institute of Physical Engineering of the Technical University in Brno (Czech Republic), are one of Wolfgang's most important endeavors. It may be considered a straightforward extension of von Laues' shape analysis in electron and X-ray diffraction of particles with arbitrary numbers and face and edge arrangements. The only drop of bitterness: the famous results are valid only for kinematical diffraction. Solutions for the very important dynamical theory do not yet exist. Two further activities are connected with his time in Halle: (i) he wrote some of the basic chapters in the Bethge-Heydenreich monography of the institute's activity in solid state physics and electron microscopy, a state-of-the-art compendium at the time; (ii) he was one of the most active lecturers and members of the Scientific Committee of the International Center of Advanced Materials and Electron Microscopy since its foundation at the institute in Halle in 1975. The most memorable remark from this time is Wolfgang's quip, "Give me five arbitrary slides and five minutes to think and I will lecture as long as you like".

Wolfgang's scientific career reached a new level in 1996 when he became full Professor of Crystallography at Humboldt University in Berlin. Another curious note: the German revolution of 1989 was the presupposition to get this position, but the always acting administrative difficulties slowed down the process hardly before the closing time. The positive end of the story, it is the position of his adored teacher, Will Kleber. Wolfgang Neumann's research activities in solid state physics focus on crystallographic problems and electron microscope investigations in materials science. The relatively short time of little more than 10 years in this position shows many excellent results and the establishment of a well-functioning electron microscope laboratory as well as a convincing number of diplomas and Ph.D.s supervised by him.

In addition to his university position, Wolfgang is currently the Director of the International Center of Advanced Materials and Electron Microscopy since its relocation to Berlin. He is also the Chairman of the National Committee of the German Society of Crystallography and a very active longtime member of the Electron Microscope Society. In addition, he is Editor-in-Chief of *Crystal Research and Technology* as described in the preface of the current special issue containing a collection of original papers dedicated to Professor Wolfgang Neumann on the occasion of his 65<sup>th</sup> birthday. Like a mirror, it reflects his scientific preferences and the deep sympathy of friends, colleagues, and former students to him and his work. We all wish him many more years of good health, continued engagement in his field of science, and providing advice and ideas for all who would like to be connected to him.

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