

Wilfried Wurth

1957-2019

On May 8, 2019, Prof. Wilfried Wurth died unexpectedly at the age of 62 during a business trip to Sweden. This was a shock for his family and to many colleagues and friends all around the world, especially at DESY and at the Universität Hamburg. Wilfried Wurth studied physics at the Technical University of Munich. For his diploma thesis and PhD he joined Prof. Dietrich Menzel's Institute for Chemical Physics of Surfaces at the TUM. After two years of post-doctoral research at the IBM Almaden Research Center in San Jose, USA, he returned to TUM, did his habilitation and worked as a senior researcher and lecturer. Wilfried Wurth did experiments at synchrotron radiation sources in Germany, Italy, the US and Japan, but also calculations mainly with the x-alpha method during and after his stay at Almaden. He has done pioneering work exploring the use of the Auger Resonant Raman Effect for unravelling ultrafast electron transfer dynamics in layers of atoms and molecules on surfaces. During the last years of his Munich time he designed and constructed a source for size-selected clusters and extended his X-ray based investigations to nano objects, a branch of science that he continued after his move to Hamburg.

Attracted by the free-electron lasers (FEL) under construction or in an advanced planning stage at DESY, respectively, Wilfried Wurth accepted the offer to become full professor for experimental physics at the Universität Hamburg in the year 2000. He moved into offices and laboratories on the DESY campus and collaborated intensively with the Hamburger Synchrotronstrahlungslabor HASYLAB.

From the beginning, Wilfried Wurth was heavily engaged in realising the world's first VUV/soft X-ray FEL named FLASH starting user operation in 2005, and in building beamlines and novel instruments for the best possible science with this revolutionary facility. He has been one of the most prominent researchers at FLASH and was also spokesperson of the BMBF priority programme FLASH. This first priority programme in the field of condensed matter was created to bundle research at the free-electron laser within the framework of collaborative project funding, which allowed university groups to actively participate in the development of novel instrumentation. His contributions to advisory bodies such as the ELETTRA SAC and various review panels on synchrotron and FEL radiation sources were highly appreciated. He also chaired for many years the Komitee für Forschung mit Synchrotronstrahlung (KFS) in Germany.

Wilfried Wurth's own research focused on the investigation of ultrafast processes, such as real-time observations of chemical reactions at surfaces and the dynamics of electrons in solids and at interfaces. For example, his group succeeded in conducting breakthrough experiments on dynamic processes in condensed matter. Much of his scientific legacy is reflected in his review paper entitled "10 years of pioneering X-ray science at the Free-Electron Laser FLASH at DESY", which became online available shortly before he passed away.

Wilfried Wurth was very instrumental in setting up the Center



DESY mourns the loss of Wilfried Wurth: He was one of the pioneers of free-electron laser research. Picture: DESY, Gesine Born

for Free-Electron Laser Science CFEL, a joint enterprise of DESY, the Max-Planck Society and the Universität Hamburg with the goal to develop novel approaches for the investigation of structure and dynamics of matter. Since 2007 Wilfried Wurth led the Advanced Study Group of the University at CFEL, which bundled the activities of the various university groups involved. He was one of the leaders of the international consortium for rapid realisation of the Soft X-ray Material beamline (SXR) at LCLS, which was essential for the early scientific success of LCLS. All together, these CFEL activities facilitated German and European scientists to be successful in the peer review proposal selection process and to gain hands-on experience with X-ray FELs early on, which is very important for early success of the European XFEL.

In 2014 Wilfried Wurth was appointed Lead Scientist at DESY for taking the scientific lead at FLASH by keeping his commitments of a Professor at the Universität Hamburg. In this new position he particularly aimed to maintain the status of FLASH as pioneering X-ray light source and to make sure that FLASH will continue to be one of the world's leading facilities for research at free-electron lasers.

Throughout all his professional life Wilfried Wurth regarded strong links to the University, teaching students and guiding PhD students and post-doctoral fellows as most important and highly motivating.

We will very much miss him at DESY. He was a great, visionary scientist and academic teacher, and a wonderful personality. Leading by example, he had enormous impact on photon science research and technical developments at DESY, on the education of students at the physics department, and on the synchrotron radiation community at large.

DESY and the University of Hamburg are organising a memorial symposium for Wilfried Wurth at DESY on 20 September 2019.

*Text: Jochen Schneider
long-time director of
research with photons*

