

André Authier (1932–2023)

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It was with great sadness that we heard that Professor André Authier had passed away on 7 March 2023, at the age of 90.

Keywords: European Crystallographic Association; International Union of Crystallography; dynamical diffraction; crystal defects; X-ray topography.



Most scientists will remember foremost André's huge contribution to crystallography, which was at an international level. He was a founder of the European Crystallographic Association, of which he became the first President in 1972, in 1975 he became Chair of the IUCr's Commission on Crystal Growth and Characterization of Materials, and in 1978 he became Chair of the IUCr's Commission on Crystallographic Teaching. He was then elected as a member of the IUCr's Executive Committee in 1984 and became IUCr President in 1990. After these achievements he did not stop: he was Editor of *Acta Crystallographica Section A* from 1993 to 2011 and also the Editor of Volume D (*Physical Properties of Crystals*) of *International Tables for Crystallography*. An active member and a leader of various international and French committees, he was also involved in organizing many different conferences, including as Chair of the Programme Committee for the 15th IUCr Congress in Bordeaux in 1990.

André first studied physics at the prestigious Ecole Normale Supérieure Ulm from 1951. After that he moved to the USA and, in 1955, became a visiting scientist at MIT. He defended his Doctorate of Sciences at Sorbonne University in 1961 under the supervision of Professor Hubert Curien in the old laboratory of crystallography (which was founded in 1809). After his thesis André had various responsibilities at Sorbonne University, both in research and teaching. When Professor Curien left the laboratory to take on responsibilities for research at a national level, he asked André to lead the group on the study of defects in crystals. André himself became a Professor of the lab in 1965.

A full description of his work and activities would run to many pages. Here I note that his contribution to the dynamical theory of X-ray diffraction, his studies of the influence of defects on quasi-perfect crystals, from both experimental aspects and the theoretical viewpoint, allowed him to build a research group that was visited by many impressive scientists, including S. Takagi, N. Kato and P. P. Ewald. André was also a specialist in X-ray topography. He was the first to make a direct observation of the propagation of

X-ray fields in a crystal in the Bragg reflection condition and was one of the first contributors to the theory of X-ray diffraction by deformed crystals. He analysed and explained the imaging of defects in X-ray topography, and applied this approach to the study of crystal defects, growth defects in synthetic crystals as well as in natural minerals, ferroelectric domains and electrical defects in semiconductors.

André received many honours during his life: he was an honorary member of the German Science Academy (Leopoldina), and chevalier then officier de la légion d'honneur in France, along with many other awards and titles, national and international.

After his retirement in 1996, he worked on the history of crystallography (his book *Early Days of X-ray Crystallography* was published by the IUCr in association with Oxford University Press in 2013) and also finished his book

Dynamical Theory of X-ray Diffraction, which is considered to be the definitive reference work for the field (*IUCr Monographs on Crystallography*, No. 11, 2001). I have personal recollections about this latter book: when I had the privilege of being hired as a member of his group in 1968, I learned about dynamical theory through a copy of his manuscript (in French at that time). In fact, André was so keen to describe all aspects of diffraction in his monograph that he revised the manuscript throughout his professional life. A revised edition was published in 2003.

The staff at the IUCr, with whom he worked for many years as an encouraging and supporting President and a conscientious Editor, remember him with great respect but also as a good friend: he regularly sent photos of the beautiful gardens at his home in Limousin. He is survived by his wife Irena and his two daughters, Isabelle and Sophie.