
January 2012

Centennial Anniversary of XRD

This year marks the 100th anniversary of the discovery of X-ray diffraction and its use as a probe of the structure of matter. Sixteen years after Wilhelm Conrad Röntgen announced in 1895 his discovery of "X" rays that can penetrate the body and photograph its bones, [Max von Laue](#), a professor of physics at the University of Munich in Germany, worked on a theory of the interference of light in plane parallel plates.

In 1911, von Laue suggested to one of his research assistants, Walter Friedrich, and a doctoral student, Paul Knipping, that they try out X-rays on crystals. His reasoning was that X-rays have a wavelength similar to the interatomic distances in crystals, and as a result, the crystal should act as a diffraction grating.

By April 1912, von Laue, Friedrich and Knipping had performed their pioneering experiment on copper sulfate. They found that if the interatomic distances in the crystal are known, then the wavelength of the X-rays can be measured, and alternatively, if the wavelength is known, then X-ray diffraction experiments can be used to determine the interplanar spacings of a crystal. The three were awarded [Nobel Prizes in Physics](#) for their discoveries.

Hats off to all of you for advancing the study and application of X-ray analysis these past 100 years. Happy birthday, XRD!

(Reprinted from a general email newsletter provided by Bruker-AXS, manufacturers of X-ray diffracton equipment.)

