

## Father of MRI and Nobel Laureate Richard Ernst Dies at 87



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Richard R. Ernst, a chemist who won a Nobel Prize for devising precise techniques to analyse the chemical properties of atoms, helping create the foundation of magnetic resonance imaging (MRI), which has had far-reaching applications in science and medicine, died June 4 at the age of 87 in his hometown in Switzerland.

Born in 1933 in Winterthur, northeastern Switzerland, Ernst finished his studies at the federal technology institute ETH Zurich – where he spent his entire career – in 1962 with a dissertation on nuclear magnetic resonance (NMR) in the discipline of physical chemistry.

He received numerous honours, including the Nobel Prize for Chemistry (1991), the Wolf Prize for Chemistry (1991), the Horwitz Prize (1991) and the Marcel Benoist Prize (1986).

Ernst was awarded the Nobel Prize for his contributions to the development of high-resolution NMR spectroscopy, which paved the way for MRI. In particular, he helped improve the sensitivity of this technique, which was first tested in the 1940s to generate images of body organs.

## Ernst refined nuclear magnetic resonance technology, giving rise to the development of MRI.

His work would lay the foundation for MRI technology developed through the 1970s. Like NMR, MRI also uses a strong magnetic field and radio waves to identify the frequencies of atoms within the body. Rather than creating a graph, MRI identifies abundances of hydrogen, which is readily found in fat and water, to create an inner map of the human body that can indicate the presence of cancers and brain injuries. Ernst was the sole recipient of the Nobel Prize in Chemistry in 1991.

The 2009 documentary [Science + Dharma = Social Responsibility](#), which explores Ernst's passion for useful applications of research and gives insight into who he was as a person, including a look at his Tibetan art collection. He had gained an appreciation for Tibetan art and Buddhism while traveling in Asia, ETH Zurich says.

Always humble, Ernst's [Nobel autobiography](#) mentions coworkers and mentors he had throughout the years, crediting them for all of the ways they helped his work to develop and shine.

Survivors include his wife of 58 years, Magdalena Kielholz, and their three children.

Source: [Washington Post](#)

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