

# DAN SHECHTMAN



Dan Shechtman is an Israeli scientist best known for his groundbreaking discovery of quasicrystals, which earned him the 2011 Nobel Prize in Chemistry. His work challenged long-standing assumptions in crystallography, demonstrating that atoms in certain materials could be arranged in non-repeating patterns, a concept previously thought impossible.

## ACADEMIC AND PROFESSIONAL CAREER

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Shechtman is a Distinguished Professor at the Technion – Israel Institute of Technology and has held research positions at Iowa State University and the U.S. Department of Energy's Ames Laboratory. His contributions to materials science have had a lasting impact on both fundamental research and applied technologies.

He received his bachelor's (1966), master's (1968), and doctoral (1972) degrees in materials engineering from the Technion–Israel Institute of Technology. After a postdoctoral fellowship at Wright-Patterson Air Force Base (1972–75), he joined Technion, becoming a professor in 1984. He also held positions at Johns Hopkins University, the University of Maryland, and Iowa State University.

In 1982, while on sabbatical at the National Bureau of Standards, Shechtman discovered a metallic alloy with fivefold symmetry—previously thought impossible in crystals. His findings challenged century-old scientific principles, leading to initial skepticism and professional backlash. He was even asked to leave his research group. However, in 1984, he published his results, and later that year, physicists Paul Steinhardt and Dov Levine coined the term quasicrystal. Widespread acceptance came in 1987 when larger quasicrystals were synthesized and verified via X-ray diffraction.

Beyond his scientific achievements, Shechtman is a strong advocate for education, innovation, and entrepreneurship, actively promoting technological advancements in Israel and worldwide.

## AWARDS AND HONORS

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- 1986 Physics Award of the Friedenberg Fund for the Advancement of Science and Education
- 1988 International Award for New Materials of the American Physical Society
- 1988 New England Academic Award of the Technion
- 1990 Rothschild Prize in Engineering
- 1993 Weizmann Science Award
- 1996 Elected member of the Israel Academy of Sciences
- 1997 Elected Honorary Member of MRSI (Materials Research Society of India)
- 1998 Elected Honorary Member of ISIS-Symmetry (International Society for Interdisciplinary sciences)
- 1998 Elected Honorary Member of the Israel Society for Microscopy
- 1998 Israel Prize in Physics
- 1999 Elected Honorary Member of the Israel Crystallographic Association
- 1999 Wolf Prize in Physics
- 2000 Elected Honorary Member of the French Physical Society
- 2000 Elected member of the American National Academy of Engineering.
- 2000 Gregori Aminoff Prize of the Royal Swedish Academy of Sciences.
- 2000 Muriel & David Jacknow Technion Award for Excellence in Teaching