Bar-Ilan University bestows an honorary doctorate on Prof. Dan Shechtman, 2011 Nobel Prize Laureate in Chemistry, for his groundbreaking discovery, which has changed the conception of solid matter. His findings of "quasicrystals" – revealing that atoms in a crystal can be packed in asymmetrical patterns – has opened up a new research field and positioned Israel at the scientific forefront.

Although his family owned a well-known Tel Aviv printing press, Dan Shechtman's childhood dream was to be a mechanical engineer. In 1962, he enrolled at the Technion in Haifa, where he studied for a BSc in that field before shifting his focus and obtaining an MSc and PhD in materials engineering. In the early 1970's, Shechtman was a fellow at the Aerospace Research Laboratories at Wright Patterson AFB in Ohio, later returning to Israel to join the Technion's materials engineering faculty. While on a sabbatical at Johns Hopkins University in the 1980s, he was the first to discover materials bearing icosahedral symmetry in a non-repeating pattern.

Shechtman's breakthrough finding – which has redefined crystals and opened up a new research field that studies the very nature of matter – was initially met with skepticism and opposition. With bold determination, he continued to publicize his discovery and publish scientific articles until he succeeded in convincing the academic world and garnered the recognition he deserved – the 2011 Nobel Prize in Chemistry.

"There have been many significant events in my personal life – my marriage to Tzipora (today an education professor at Haifa University), and the birth of four children and ten grandchildren. However, professionally, I attach special importance to my discovery of quasi-periodic crystals, and the public recognition – most notably, the Nobel Prize – which transformed my life."

Through his stellar research and academic achievements, the laureate is enhancing Israel's global reputation as a "start-up nation." In fact, over the past 27 years, Shechtman's technological entrepreneurship course at the Technion has inspired Israeli students to develop their creative ideas for launching start-ups. Alongside his academic work, he travels throughout the world, meeting with policy-makers and youth to advocate for improved science education and training in technological entrepreneurship, which, he maintains, are "key to a country's prosperity and survival."

Shechtman, who also teaches at the University of Iowa, believes that "engineering education contributes to a nation's welfare and its peaceful relations with other nations. In order to avoid conflicts, it's important that citizens have a reasonable quality of life, and technological and engineering initiatives help promote not only economic prosperity, but also world peace."

Identifying with Bar-Ilan University values, especially those relating to interpersonal relationships, Shechtman says "Love your neighbor as you love yourself" is the golden rule. "In my mind, values of education teach you how to be a responsible, empathic, cultured person, and a broad-minded professional."