



Robert Langer

Groundbreakers in the field of Nanotechnology worldwide, these scientists have created new, revolutionary materials and transcendental techniques for fighting diseases, such as those related to the brain and cancer, and for producing artificial tissues and organs. Their work also stands out for its contribution to the protection of the environment and energy saving via the use of new sources of clean energy that may be produced at a low cost.

All these technological innovations and scientific discoveries are of special importance in the fight against poverty, such as the inexpensive purification of drinking water in the planet's more underprivileged areas. The possibility of using reduced-cost, low-energy consumption sources of light in this fight is likewise worthy of mention.

Robert Langer was born in Albany (USA) in 1948. He is considered the father of intelligent drug delivery on account of developing novel, biomimetic materials in the form of polymers, nanoparticles or chips which permit the controlled delivery of drugs throughout the human body. This allows safe transport and administration of the precise, controlled dosage of drugs, acting directly on malignant cells and allowing prolonged release over time, thus notably increasing their efficacy. His research has allowed various types of cancer, such as cancer of the prostate and brain tumours, to be successfully treated.

Langer is currently a Professor at the Massachusetts Institute of Technology (MIT), where he directs one of the most internationally renowned biomedical research laboratory in the world. Although he received his bachelor's degree in Chemical Engineering, he carried out postdoctoral research in Medicine, which marked the course of his future research, situated on the interface between Materials Science and Biotechnology.

He has also broken ground in tissue engineering, achieving the reconstruction and controlled growth of tissue and organs through the use of novel biodegradable materials that serve as support structures. Acknowledged by the scientific community as one of the most innovative interdisciplinary researchers, Robert Langer has received the United States National Science Medal, as well as numerous awards and honours, outstanding among which are the Gairdner Foundation International Award (Canada, 1996), the Dickson Prize (USA, 2002), the Nagai Prize (Japan, 2002), the John Fritz Medal (USA, 2003), the Harvey Award (Israel, 2003), the Dan David Award (Israel, 2005) and the Max Planck Research Award (Germany, 2008) and the Millennium Technology Prize (Finland, 2008), considered as the Technology 'Nobel prize'. Member of the US National Academies of Sciences and Engineering, he is author of over 1,000 articles, published in the most prestigious scientific journals worldwide, and holds 600 registered patents.