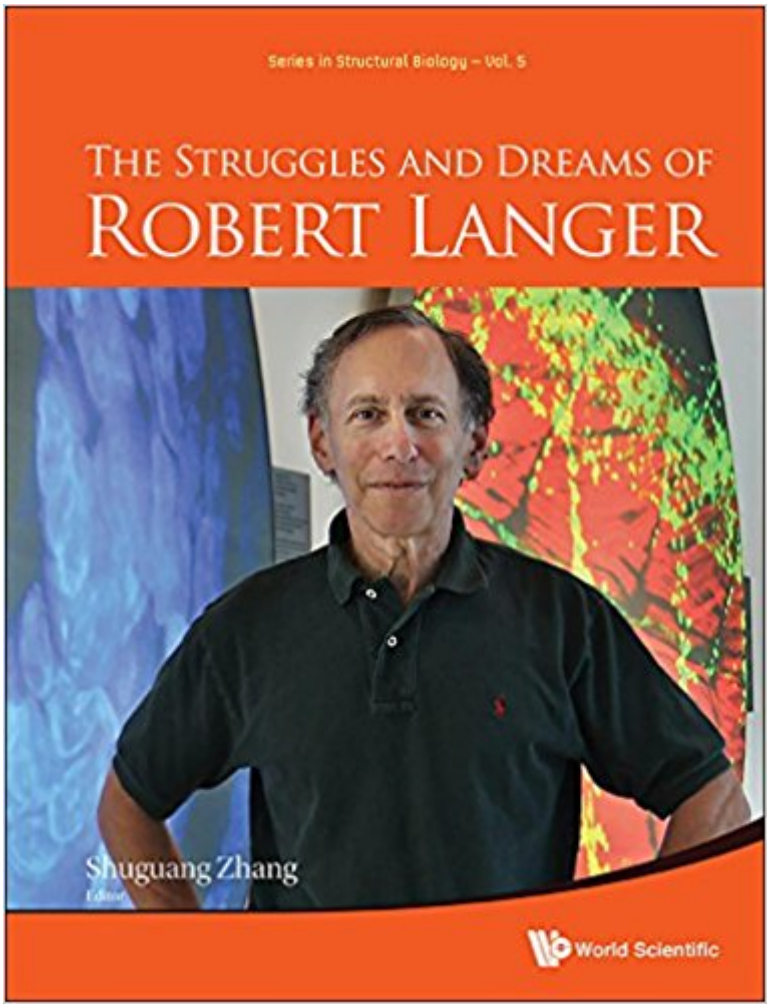
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The Struggles And Dreams Of Robert Langer (Series In Structural Biology)



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Synopsis

This book provides a glimpse into the life and work of Robert Langer, an amazing scientist, inventor and entrepreneur. Growing up in Albany, New York, Langer developed a passion for mathematics. While he was pretty good at science, he was very good at math. He went on to receive his BA in chemical engineering from Cornell University and his Doctorate of Science from the Massachusetts Institute of Technology. As a graduate student at MIT, he was involved in teaching underprivileged high school dropouts, his goal: to make math and science interesting. Langer's research laboratory at MIT is the largest biomedical engineering lab in the world. He has authored more than 1300 papers and holds more than 1080 patents. His patents have been licensed or sublicensed to more than 250 companies. A selection of 53 key papers and 50 patents are included in this book. Langer has pioneered many new technologies, including controlled release system and is regarded as the founder of tissue engineering in the field of regenerative medicine. However, his success did not come easily. He struggled in the late 1970s and early 1980s because scientists, especially established scientists, did not believe in his research. To obtain his first patent, Langer scoured existing literature and found a paper published by five famous chemists and chemical engineers that said his results were surprising and went against conventional thinking. He managed to get the patent after the five researchers confirmed that they really wrote the paper. The introductory chapter of the book gives an account of Langer's struggles as well as triumphs as he pursued research in biotechnology and tissue engineering in an effort to "make the world a better place and transform human healthcare." The book will appeal to both students and scientists. Readership: General public; historians; scientists; educators; undergraduates and graduates; biographers.

Book Information

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Customer Reviews

Robert S Langer is the David H Koch Institute Professor (there are 13 Institute Professors at MIT; being an Institute Professor is the highest honor that can be awarded to a faculty member). He works at the interface between biotechnology and material sciences. He pioneered the development and synthesis of polymers for controlled delivery of drugs. These delivery systems include microspheres, nanospheres, and implants, for treating cancer, heart disease, diabetes, and mental health disorders such as schizophrenia, narcotic addiction and alcoholism. Hundreds of millions of individuals every year use controlled drug delivery systems. Dr Langer has written nearly 1,380 articles. He also has 1,260 issued and pending patents. Dr Langer's patents have been licensed or sublicensed to over 350 pharmaceutical, chemical, biotechnology and medical device companies. He is the most cited engineer in history (h-index 239). Dr Langer has received over 220 major awards. He is one of 4 living individuals to have received both the United States National Medal of Science (2006) and the United States National Medal of Technology and Innovation (2011). He also received the 2002 Charles Stark Draper Prize, considered the equivalent of the Nobel Prize for engineers, the 2008 Millennium Prize, the world's largest technology prize, the 2012 Priestley Medal, the highest award of the American Chemical Society, the 2013 Wolf Prize in Chemistry, the 2014 Breakthrough Prize in Life Sciences and the 2014 Kyoto Prize. He is also the only engineer to receive the Gairdner Foundation International Award; 84 recipients of this award have subsequently received a Nobel Prize. In 2015, Dr Langer received the Queen Elizabeth Prize for Engineering. Among numerous other awards Langer has received are the Dickson Prize for Science (2002), Heinz Award for Technology, Economy and Employment (2003), the Harvey Prize (2003), the John Fritz Award (2003) (given previously to inventors such as Thomas Edison and Orville Wright), the General Motors Kettering Prize for Cancer Research (2004), the Dan David Prize in Materials Science (2005), the Albany Medical Center Prize in Medicine and Biomedical Research (2005), the largest prize in the US for medical research, induction into the National Inventors Hall of Fame (2006), the Max Planck Research Award (2008), the Prince of Asturias Award for Technical and Scientific Research (2008), the Warren Alpert Foundation Prize (2011), the Terumo International Prize (2012) and the Benjamin Franklin Medal in Life Science (2016). In 1998, he received the Lemelson-MIT prize, the world's largest prize for invention for being "one of history's most prolific

inventors in medicine." In 1989 Dr Langer was elected to the National Academy of Medicine, and in 1992 he was elected to both the National Academy of Engineering and to the National Academy of Sciences, and in 2012 he was elected to the National Academy of Inventors. Dr Langer has received 29 honorary degrees.

This is a wonderful book about one of the most cited scientists and engineers in history, Robert Langer. His scientific discoveries and inventions made an enormous economic impact not only to MIT, Cambridge, Massachusetts, US but also to the rest of the world. Langer wrote a short and lucid autobiography to recount his ordinary childhood, and later extraordinary scientific achievements, mostly through his insatiable curiosity, creativity, taking unconventional path, persistence, strong passion for science, care about education and respect students and other people. Langer not only unleash his own imagination, but he also inspired countless students, postdocs, visitors and collaborators around the world. This book selects his most important scientific papers and lists his inventions. In the appendix, there are several pages of photos taken from his office walls, full of awards from around the world, not only from US, Europe, Japan but also Israel and Iran. He is a true humanist, standing above all politics in order to make amazing scientific and technological contributions that greatly benefit mankind!

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