James R. Heath

California Institute of Technology, Pasadena, U.S.A.

Prof. Dr. James Heath will talk about the different aspect of nanoscale science that his groups are studying. One part of the group works in the area of solid-state quantum physics, materials science, and basic surface science, with a slight focus on energy conversion applications. The other part of the group works on fundamental biology and translational medicine - with a clear focus on oncology. One thing that draws the Heath´s research projects together is that they all focus on the fundamental scientific bottlenecks that, if solved, can provide keys toward solving much larger problems. Those problems can be in energy conversion technologies, translational medicine, or basic oncology studies.

Heath graduated with a degree in chemistry from Baylor University, Texas. He completed his Ph.D. in physics and chemistry from Rice University in 1988. From 1988 to 1991, he was a Miller Research Fellow at the Department of Chemistry, University of California, Berkeley. Before he joined the faculty at the University of California, Los Angeles in 1994 and became professor of chemistry in 1997, he worked as a research staff member at IBM T.J. Watson Research Laboratory in Yorktown, New York. He founded the California NanoSystems Institute in 2000 and served as its director until be became the Elizabeth W. Gilloon Professor of Chemistry at the California Institute of Technology.

Heath is known for publishing an architecture demonstration of molecular computers, or moletronics. When Heath was a graduate student at Rice University, he ran the experimental apparatus that generated the first C_{60} molecules and, ultimately, won the Nobel Prize in Chemistry for the three senior members of the collaboration. Heath has received several awards and honors for his research. He was awarded the 2000 Feynman Prize in Nanotechnology. He became a fellow of American Physical Society in 1999. In 2009, Heath was named one of the seven most powerful innovators of the world by Forbes magazine.