

ENI AWARD 2014

New Frontiers of Hydrocarbons - Downstream Prize

Amir H. Hoveyda

Winner

Development of new reactions to transform unactivated alkenes into complex molecular framework

Biography

Amir Hoveyda holds the Patricia and Joseph T. '49 Millennium Professor of Chemistry at Boston College in Chestnut Hill, MA. In addition, he is a Distinguished Visiting Professor of Chemistry at the Israel Institute of Technology (Technion).

Professor Hoveyda's academic career began in 1986, when he received his Ph.D. from Yale University. He then worked as a postdoctoral fellow at Harvard University. From November 1987 to May 1988, he served at the Pfizer Central Research, Cancer Group, being then proclaimed Assistant Professor at the Boston College in June 1990. He was promoted to Full Professor in 1994 and was appointed to his present position in 1998.

Today, his research interests are mainly related to enantioselective catalysis, and he is particularly known for his outstanding work on developing catalysts for efficient and stereoselective olefin metathesis. Professor Hoveyda's research is further focused on copper-catalyzed allylic alkylations, conjugate additions and protyl-boron additions through the use of ligands and catalysts that have been developed in his laboratories. In recent years, he has made significant contributions in the design of exceptionally efficient N-heterocyclic carbenes as ligands and (metal-free) catalysts for a wide range of enantioselective process, including those that generate C-C, C-B or C-Si bonds.

He and his research group discover, design and develop new catalysts for chemical synthesis that are easily prepared, stable to air and moisture and can be recycled. They introduce efficient new chiral catalysts that can be used to synthesize important organic compounds, often in highly enantiomeric purity, that are crucial to the preparation of biologically and medicinally active agents. Professor Hoveyda's research group is focused on transformations that are truly important (such as conjugate additions and olefin metathesis), but cannot be catalyzed efficiently by any existing methods. His catalysts for catalytic olefin metathesis have found numerous applications in the pharmaceutical industry and, more recently, in the chemical industry for conversion of renewable materials to high value products on very large scale.

During the years, his outstanding scientific career was highlighted by various recognitions. He received the R. B. Flint Graduate Fellowship Award from Yale University in 1984 followed by the National Research Service Award, by the National Institutes of Health, in 1985.

He received a National Young Investigator Award by the National Science Foundation and an Eli Lilly Grantee Award in 1992. In 1993 he received a Pfizer Research Award in Synthetic Organic Chemistry, and in 1994 an Alfred P. Sloan Research Fellowship.

Other recognitions include: the Camille Dreyfus Teacher-Scholar Award in 1994, the Johnson & Johnson Focused Giving Award in 1995, the American Chemical Society Cope Scholar Award in 1998 and the Boston College Distinguished Senior Faculty Research Award in 2000. He also won the Novartis Research Award in Synthetic Organic Chemistry, in 2001, and the ExxonMobil Excellence in Catalysis Award in 2002. In 2005, he won the prestigious National Institutes of Health MERIT Award and in 2007 the Tishler Prize, of Harvard University. In 2010 he was named the Yamada-Koga Prize winner, and in 2014 he was the recipient of the American Chemical Society Award for Creative Work in Organic Synthesis. He is a principal co-founder of XiMo, AG.