

Biomimetic Catalysis in Green Organic Transformations



Jan E. Bäckvall

Full Professor of Organic Chemistry

Department of Organic Chemistry
Stockholm University
Sweden

He graduated from the Royal Institute of Technology, Stockholm in 1971. He received his Ph. D. from the same place in 1975. During 1975 – 1976 he spent one year as a postdoc with K. B. Sharpless at Massachusetts Institute of Technology. In 1976, he became Assistant Professor and in 1977 Associate Professor, both at the Royal Institute of Technology, Stockholm. In 1986, he moved to Uppsala University as a Full Professor. In 1997 he moved to his current position as Professor at Stockholm University. Prof. Bäckvall is a Member of the Royal Swedish Academy of Sciences, Finnish Academy of Science and Letters, and Academia Europaea. In 2008-2016 he was a member of the Nobel Committee for Chemistry. He is a member of a number of Editorial Boards for a number of scientific journals.

He is renowned for his contribution to organopalladium chemistry and catalytic oxidation reactions where he has done mechanistic work and developed new reactions. He has also pioneered the development of efficient systems for dynamic kinetic resolution of alcohols and amines based on combined metal and enzyme catalysis. More recently the enantioselectivity of enzymes was improved by directed evolution in his group. The Bäckvall group has also developed a variety of useful aerobic biomimetic oxidation reactions. In these reactions electron-transfer mediators are employed to facilitate low-energy electron transfer like that occurring in natural systems. Recent applications of the latter topic involve palladium-catalyzed oxidative carbocyclizations. The past few years oxidative carbocyclizations catalyzed by a new generation of heterogeneous nanopalladium catalysts have been developed by the Bäckvall group

His awards include the Arrhenius medal (1986), the Celsius Medal in Gold (2002), The “August-Wilhelm-von-Hofmann Lectureship Award” (2003), the Björkén Prize (2003), the Award for Excellent Research Environments from the Swedish Research Council (2003), the Ulla and Stig Holmquist’s Prize in Organic Chemistry (2005), ERC-Advanced Grant (2010), the George A. Olah Lectureship Award in Chemistry, University of Southern California, Los Angeles, USA, the Prelog Medal in Gold and Prelog Lecture, ETH, Zürich, Switzerland, and the Yamada-Koga Prize, Japan. He has published more than 550 papers and given more than 180 plenaries and main lectures at international conferences