

Seminarios itinerantes

Amir Hoveyda

*Department of Chemistry, Boston College (USA) &
Institute de Science et d'Ingénierie Supramoléculaires, University of Strasbourg
(France)*

17 al 24 de febrero de 2020

New Catalysts and Strategies in Stereoselective Olefin Metathesis (Talk 1)

The Concept of Delayed Catalysis in Enantioselective Catalysts (Talk 2)

Sulfonate NHC–Cu Complexes: Uniquely Effective Catalysts in
Chemical Synthesis (Talk 3)

Lunes, 17 de febrero, Universidad de Alcalá (Talk 3)

12:00 h, aula de grados del Edificio de Farmacia (juanc.flores@uah.es)

Martes, 18 de febrero, Universidad de Sevilla-IIQ (Talk 2)

12:00 h, IIQ, salón de actos de CicCartuja2 (jesus.campos@iiq.csic.es)

Miércoles, 19 de febrero, Universidad de Castilla La Mancha, Ciudad Real (Talk 1)

11:00 h, salón de actos de la Facultad de Ciencias y Tecnologías Químicas
(Antonio.Antinolo@uclm.es)

Jueves, 20 de febrero, Universidad Autónoma de Madrid, (Talk 2)

12:00 h, Facultad de Ciencias de la Universidad Autónoma de Madrid
(javier.adrio@uam.es)

Viernes, 21 de febrero, Universidad de Valladolid (Talk 2)

11:30 h, sala de conferencias del Edificio QUIFIMA; (albeniz@qi.uva.es)

Lunes, 24 de febrero, Universidad del País Vasco, San Sebastián (Talk 2)

10:00 h, Salón de actos. Facultad de Química (enrique.gomez@ehu.es)

Talk 1: New Catalysts and Strategies in Stereoselective Olefin Metathesis

Several key advances of the past decade in catalytic olefin metathesis have been transformative. In this Lecture, the origins of the inception of various types of catalysts that can be used in kinetically controlled *Z*- or *E*-selective cross-metathesis and macrocyclic ring-closing metathesis reactions will be presented. The influence of the recently introduced catalytic protocols on the design of synthesis routes leading to complex organic molecules, and the impact of a better understanding of the mechanistic nuances towards development of more efficient catalytic processes, will also be discussed.

Talk 2: The Concept of Delayed Catalysis in Enantioselective Catalysts

Efficient synthesis of enantiomerically enriched amines often demands oxidation-state adjustments, protection/deprotection processes, and purification procedures that increase cost and waste, and limit applicability. When diastereomers can be formed, one isomer is attainable. In this Lecture we will discuss how nitriles, commonly viewed as insufficiently reactive, can be transformed directly to multifunctional unprotected homoallylic amines by enantioselective addition of a carbon-based nucleophile and diastereodivergent reduction of the resulting ketimine. Successful implementation requires that competing copper-based catalysts be present simultaneously, and that the slower-forming and less-reactive one engages first. This challenge was addressed by incorporation of a nonproductive side-cycle, fueled selectively by inexpensive additives, to delay the function of the more active catalyst.

Talk 3: Sulfonate NHC–Cu Complexes: Uniquely Effective Catalysts in Chemical Synthesis

Since their discovery in 2007, Cu-based complexes with a sulfonate N-heterocyclic carbene ligand have been used to catalyze a wide range of enantioselective C–C, C–B, C–H, and C–Si bond forming transformations. In this Lecture we will discuss the impetus for the development of this emerging ligand class. Another key aspect of this review entails mechanistic analysis of notable structural attributes of sulfonate NHC–Cu catalysts, especially those responsible for the unique ability to facilitate transformations with uniquely high efficiency as well as regio- and enantioselectivity.



Amir H. Hoveyda is currently Patricia and Joseph T. '49 Vanderslice Millennium Professor of Chemistry at Boston College and Director of the Laboratories of Catalytic Chemical Synthesis at the University of Strasbourg

Education: B. A., 1981, Columbia University. Ph. D., 1986, Yale University, Thesis Advisor: Professor Stuart L. Schreiber. Postdoctoral Fellow, 1986–1987 and 1988–1990, Harvard University, Research Advisor: Professor David A. Evans

Employment: Pfizer Central Research, Cancer Group, November 1987–May 1988

Assistant Professor, Boston College, June 1990–August 1994
Professor, Boston College, September 1994–August 1998

Patricia and Joseph T. '49 Vanderslice Millennium Professor of Chemistry, Boston College, September 1998–present

Chairperson of Chemistry Department, Boston College, July 2006–January 2017

Distinguished Visiting Professor, Technion-Israel Institute of Technology, Haifa, Israel, January 2014–present

Director of the Laboratories for Catalytic Chemical Synthesis, Institute de Science et d'Ingénierie Supramoléculaires, University of Strasbourg, Strasbourg, France, January 2019–

Selected honors: National Science Foundation *National Young Investigator Award*, 1992

Alfred P. Sloan *Research Fellowship*, 1994

Camille Dreyfus *Teacher-Scholar Award*, 1994

American Chemical Society *Cope Scholar Award*, 1998

Boston College *Distinguished Teaching Award*, 2002

National Institutes of Health *MERIT Award*, 2005

Yamada-Koga Prize, 2010

American Chemical Society *Award for Creative Work in Organic Synthesis*, 2014

Eni Prize, 2014

American Chemical Society *H. C. Brown Award for Creative Research in Synthetic Methods*, 2020