Nanotek-2013

OMICS Group Conferences
Accelerating Scientific Discovery

3rd International Conference on
Nanotek & Expo

December 2-4, 2013 Las Vegas, USA

Molecular transformation using nanotek catalysts: Nanoporous metal skelton catalysts for green organic synthesis

Yoshinori Yamamoto

Tohoku University, Japan

Abstract

Molecular transformations using gold, palladium and copper nanoporous skeleton catalysts and the reactivity difference between those catalysts and the corresponding well-known homogeneous molecular catalysts will be discussed. For example, Pd nanoporous skeleton catalysts (PdNPore) can be fabricated through dealloying Ni and P from the corresponding Pd-containing alloy PdxNiyPz. AuNPore (gold nanoporous catalyst) can be fabricated through dealloying Ag from AuxAgy alloy. PdNPore-catalysed Suzuki-coupling, AuNPore-catalyzed hydrolysis of silanes, and CuNPore-catalyzed click reaction will be presented. Selective semi-hydrogenation of alkynes has been achieved with AuNPore catalyst. Atomic origins of the high catalytic activity of AuNPore have been clarified using HRTEM, STEM, and others.

Biography

YY has completed his Ph.D. at the age of 27 years from Tohoku University, Japan and postdoctoral studies from Purdue University, Chemistry Department. He was the director of WPI-AIMR (2007- 2012), Vice President of Tohoku University (2006-2007), and Professor Emeritus at Tohoku University (from 2012), and now he is Professor at DLUT (from 2012). He has published more than 670 papers in reputed journals and was the executive board of editors for Tetrahedron Publications (1995-2012). He is a recipient of Humboldt research award (2002, Germany), A. C. Cope Scholar Award (2007, ACS), and Centenary Prize (2009, RSC).