Abstract
Catalysis is at the center of green chemistry efforts, especially when it involves readily available feedstock such as water, alcohols, and amines. An approach with major practical implications is the selective functionalization of E-H (E = O, N, C, Si, B) bonds since syntheses can be simplified and less waste generated than with traditional methods. Oxidative addition of such bonds has been investigated with some success, and our new approach involves metal-ligand cooperation, specifically, hydrogen transfer from the ligand to the metal and vice versa, which allows transformations under mild conditions.

Biography
Professor Iluc studied chemistry at University Politehnica of Bucharest. In 2002, he started his doctoral career at the University of Chicago, where he worked under the guidance of Professor Gregory Hillhouse. His research focused on metal-ligand multiple bonds in nickel complexes supported by chelating bisphosphine ligands. During 2008-2011, Iluc was a post-doctoral fellow at the California Institute of Technology; there he worked with Professor Robert Grubbs and focused on C-H activation reactions catalyzed by iridium complexes. He joined the Chemistry and Biochemistry Department at University of Notre Dame in summer 2011.