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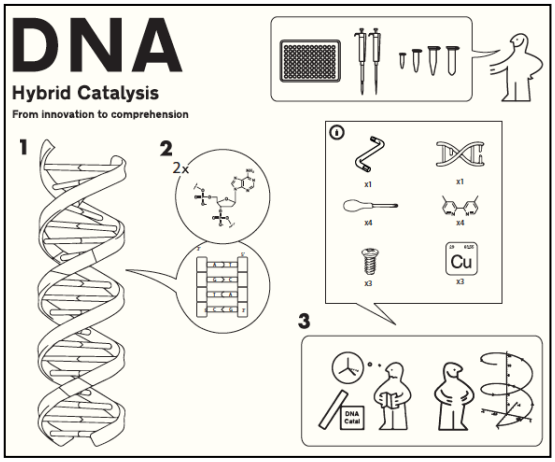
Innovative DNA-based asymmetric catalysis

ABSTRACT: DNA-based artificial metalloenzymes have recently drawn considerable attention because of their unique features that comprise a chemically stable chiral double helix associated with many programmable secondary structures. Since the pioneering work of Roelfes and Feringa.[1] The field of DNA-based asymmetric catalysis has been thriving resulting in the development of a handful of highly selective synthetic transformations by several groups[2] including ours.[3] The concept of DNA-based asymmetric catalysis lies in embedding an achiral transition metal catalyst within a DNA double helix that provides the necessary chiral microenvironment to induce enantioselectivity. The most recent efforts to unveil new reactivities have been accompanied with the willingness to understand the mechanisms by which the chirality is transferred. I'll present some of the group's most recent results.



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BIO: I received my PhD from the University of Strasbourg under the guidance of late Dr. C. Mioskowski. After various postdoctoral stints in industry (Rhodia Chirex, Boston, USA, in collaboration with Professor S. L. Buchwald, MIT) and in academia with Professor A. C. Spivey (Imperial College London) and Professor K. C. Nicolaou (The Scripps Research Institute), I started my academic career in France first as a CNRS researcher and later as a CNRS Director. In 2015, I moved to Queen Mary University of London where my group is mainly interested in the development of new synthetic methods and their application in natural product synthesis.

Outputs: 80 publications, recipient of the 2015 CNRS Bronze medal and the 2014 Thieme Chemistry Journal Award. Fellow of the Royal Chemical Society and an elected member of the Organic Chemistry Division Bureau of the French Chemical Society.