



Diverse Recipes of DNA Self-Assembly



Prof. Bryan Wei
Tsinghua University

Date : 21 November 2024 (Thursday)
Time : 10:00am
Venue : Room 702C, William M W Mong Engineering Building, CUHK

Abstract

Hybridization of complementary DNA segments have been utilized in DNA self-assembly to create all kinds of DNA nanostructures. A few self-assembly methods and a large collection of assembly building blocks have been introduced in the field. Phenomenal progresses have been achieved in upgrading size and complexity of programmable DNA nanostructures. In our development of applying molecular building blocks of different geometries and sizes, addressable structures in compact helices and wireframe architectures have been demonstrated. Watson-Crick base pairing is just one of the many types of binding forces that can be utilized in DNA self-assembly. Besides, other guest molecules such as proteins can co-assembly in molecular self-assembly systems. In general, diverse recipes of DNA self-assembly can lead to new possibilities in DNA nanotechnology.

Biography

Bryan Wei received his BS in Biochemistry from Peking University and PhD in Chemical Engineering from Hong Kong University of Science and Technology. Before joining Tsinghua, he was a postdoctoral fellow at the Wyss Institute for Biologically Inspired Engineering, Harvard. Through the PhD and postdoctoral trainings, Dr. Wei has gained significant expertise in DNA nanotechnology and become one of the leading scientists of the field. Currently as a faculty member at School of Life Sciences, Tsinghua University, his research goal is to further develop DNA nanotechnology and apply useful molecular designs to address meaningful questions in life sciences.

*** ALL ARE WELCOME ***

For enquiries, please contact Ms. Joyce Chan, Department of Biomedical Engineering at 3943 8278