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Self-Assembly of Complex DNA Nanostructures and Applications

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Abstract

A key challenge in nanotechnology is to design and fabricate nanostructures/nanodevices. Such systems can serve as platforms for basic science research (structural biology, molecular biology, for instance) at nanoscale, and for practical applications. Bottom-up structural DNA nanotechnology has attracted significant attentions due to its programmability and its precise control of matter at nanoscale. I will present our recent progress in making massive/complex DNA nanostructures and dynamic DNA devices. DNA nanostructures has also shown increasing capabilities for basic science research, and for practical applications. I will discuss our works on single-molecule biosensors, drug delivery, and fabrication of functional nanoscale materials by using DNA self-assembly.

For details of our lab, visit ke-lab.gatech.edu.