Self-Assembling 2D and 3D Nanostructures for Nano-Photonic and Nano-Electronic IC's and Devices

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TECHNOLOGY DESCRIPTION

Researchers at UC San Diego's bioengineering department have developed a bottom-up nano-fabrication process using E-fields and arrangements of nano-pore structures to control the self assembly of higher order structures from functionalized DNA, RNA, oligonucleotides, polypepetides, and other self-assembling molecules. Additionally, two and three dimensional structures and devices may be further realized from these first building blocks.

The approach of this invention overcomes the traditional problem encountered with classical synthetic chemistry techniques by preventing the inter/intra molecular linking that inhibits formation of linear DNA structures. By preventing this linking, higher order structures may be realized from multiple functionalized self-assembling components.

APPLICATIONS

This invention will enable the creation of high-quality linear photonic transfer and electronic transfer structures for use in nano-photonic and nano-electronic IC's and devices.

STATE OF DEVELOPMENT

Patent pending, licensing rights available.

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- DNA Double-Write/Double Binding Identity For Micro/Nano Lithography and Self-Assembly Nanofabrication
- Microarray for High Throughput Detection of Enzymatic Activity

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INVENTORS

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OTHER INFORMATION

CATEGORIZED AS

- **Nanotechnology**
  - NanoBio

RELATED CASES

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