Electrically Fueled Active Supramolecular Materials
Tech ID: 33452 / UC Case 2022-710-0

BRIEF DESCRIPTION

Invention of a new platform for creating active supramolecular materials using electrical energy as the fuel.

APPLICATIONS

Creation of life-like dynamic materials
Potential application in bioelectronics devices
Development of efficient energy-source for supramolecular materials

ADVANTAGES

Fast assembly/disassembly (seconds to minutes)
Directional assembly
High dynamics and precise spatiotemporal control

Problems Solved:

» Lack of an energy-effective method for creating active supramolecular materials
» Inefficiency and imprecision in the assembly of supramolecular materials

FULL DESCRIPTION

This invention pertains to the use of electrically fueled dissipative assembly as a new platform for creating active supramolecular materials. By applying an electrical current to a solution containing redox-sensitive building blocks, an electrochemical oxidation fuels self-assembly of active materials. The approach provides an opportunity to fast integrate active materials into electronic devices for bioelectronics applications.

PATENT STATUS

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Additional Patent Pending

INVENTORS

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OTHER INFORMATION

KEYWORDS

Supramolecular materials, Electrical energy, Electric potential, Dissipative self-assembly, Active materials, Bioelectronics, Electricity

CATEGORIZED AS

» Energy
» Other
» Materials & Chemicals
» Chemicals
» Other
ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Dendritic Peptide Bolaamphiphiles for siRNA Delivery
- Biodegradable Polymeric Vectors For Delivery Of Various RNAs
- Dynamic polymers based on siloxane exchange