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

CATEGORIZED AS
- Energy
- Materials & Chemicals
- Other
RELATED CASES

2022-710-0

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