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## 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

Country	Type	Number	Dated	Case
Patent Cooperation Treaty	Published Application	WO 2023/004171	01/26/2023	2022-710

Additional Patent Pending

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### 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

## 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

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