

# Guided Template Based Electrokinetic Microassembly (TEA)

Tech ID: 32478 / UC Case 2020-661-0

## BRIEF DESCRIPTION

Researchers at the University of California, Irvine have developed a guided electrokinetic assembly technique that utilizes dielectrophoretic and electroosmotic forces for micro- and nanomanufacturing. This technique provides a new way for assembling microelectronics and living cells for tissue engineering applications.

## SUGGESTED USES

- Assembly of living cells and organisms for tissue engineering applications
- Carbon nanotube assembly
- Micropart assembly
- Nano- and micromanufacturing

## FEATURES/BENEFITS

- Spontaneous and quick assembly of both micro and nano parts
- Less expensive than many pick-and-place methods

## TECHNOLOGY DESCRIPTION

Microdevices are used for a variety of applications ranging from tissue engineering to microelectronics to drug discovery. Currently, their assembly relies on slow serial steps of production such as pick-and-place or self-assembly operations. However, these methods can be expensive, time consuming, and may not work for both micro- and nanocomponents. The current microdevice assembly technology can be expensive and slow.

The researchers at the University of California, Irvine have developed a method for guided assembly, which uses an array of patterned microelectrodes to dielectrophoretically and electroosmotically assemble microscopically in aqueous solution. It combines the speed of self-assembly with the precision of directed assembly techniques in a parallel manner.

## STATE OF DEVELOPMENT

Device prototype in progress.

## PATENT STATUS

## CONTACT

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## INVENTORS

» Kulinsky, Lawrence

## OTHER INFORMATION

## CATEGORIZED AS

- » **Nanotechnology**
  - » Electronics
  - » NanoBio
  - » Tools and Devices
- » **Engineering**
  - » Robotics and Automation

## RELATED CASES

2020-661-0

Country	Type	Number	Dated	Case
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2020-661

- ▶ Dissolvable Calcium Alginate Microfibers via Immersed Microfluidic Spinning
- ▶ Polymer Based High Surface Area Multi-Layered Three-Dimensional Structures
- ▶ Stepwise Fabrication of Conductive Carbon Nanotube Bridges via Dielectrophoresis

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