



TECHNOLOGY

A Process for 3-Dimensional Micro Mechanisms

OVERVIEW

Many current technologies for producing non-planar microstructures such as LIGA, deep reactive ion etching and laser etching result in simple extrusions of 2-dimensional planar surfaces. Some prior art methods that do generate 3-dimensional micro-devices, such as component bonding and hinged structure fabrication, require manual assembly and thus are not well suited for low-cost mass produced micromechanisms. Techniques such as micro-stereo lithography and focused ion beam deposition are not parallel processes and thus are not cost effective technologies.

Through a simple process coined 3DMEMS, researchers at the University of Maryland, College Park can fabricate mechanically robust multi-level devices with partially and fully enclosed components. Although simple, the process can produce complicated structures such as compliant revolute joints and pistons in a parallel fabrication flow. All devices produced are as thin as 2 microns and as thick as 500 microns, with minimum mechanism element features of 2 microns, and with 4 microns between mechanism elements. Mechanisms with integrated actuators capable of moving the mechanism output element in a 500 micron cubed workspace may be constructed.

See U.S. Patent No. 6,664,126

For more information regarding this technology please contact the Office of Technology Commercialization at the University of Maryland Office of Technology Commercialization, 301 405-3947 or via e-mail at otc@umd.edu.

CONTACT INFO

UM Ventures
0134 Lee Building
7809 Regents Drive
College Park, MD 20742
Email: umdtechtransfer@umd.edu
Phone: (301) 405-3947 | Fax: (301) 314-9502

Additional Information

INSTITUTION

University of Maryland, College Park

PATENT STATUS

U.S. Patent 6,664,126

LICENSE STATUS

Contact OTC for licensing information

CATEGORIES

- Industrial Processing

EXTERNAL RESOURCES

- [US Patent 6,664,126](#)

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