



Advanced Materials and Nanomanufacturing Technology R&D Company

Strategic Opportunity Overview

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Opportunity

MJK Partners has been retained by Management and the Board of MicroContinuum, Inc. (MCI) to explore strategic opportunities for the company, including investment, merger/combination, or sale. This is a unique opportunity for a strategic buyer to acquire a highly regarded provider of outsourced R&D services for government and industry with deep expertise in roll-to-roll manufacturing and micro & nanoimprinting.

This document provides an overview of the opportunity. More public information can be found at: <https://mjkpartners.com/opportunities/microcontinuum/>

Additional information about the details of the company's operations, people, products and technology is available once an NDA is executed.

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Overview



- MicroContinuum, Inc. (MCI) is a contract technology research & development company with deep expertise in advanced roll-to-roll manufacturing and micro & nanoimprinting
- MCI has done work for a number of US Government Agencies (participated in US Government grant programs – DOE, NREL, EERE, APRA-e) as well as for leading corporate clients
- Specializing in developing solutions to challenging problems and producing prototype materials and/or manufacturing processes and equipment
- Extensive IP portfolio combined with unparalleled know-how and real-world expertise



Stats & Facts



- Founded in 2000
- Self-funded, no institutional capital
- Grant, corporate and project funded
- Over \$10M in total revenue
- ~ \$850-\$1M/yr. break-even
- Headcount 3-4
- Staff scales with contractors/consultants for projects
- Spin-outs/JV's:
 - LightWave Power, Inc. (\$4.5M VC funded)
 - Optical Tape Systems Inc. (OTSI) \$6.5M => Sun Microsystems => Oracle



Markets & Opportunities



Displays

- smart phones
- eBooks
- tablets



OLED lighting



Photovoltaics & Energy Harvesting



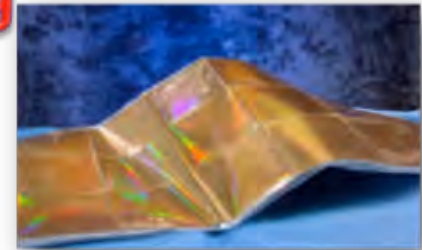
**Roll-2-Roll
Nanomaterials**



Medical Devices & Sensors



Flexible Electronics



Light & Radiation Control



Customers & Projects

- Oracle – digital optical tape
- Qualcomm – novel optical films for Mirasol displays
- Amazon/Lab 126 – edge-lit display backlight films
- Google – diffractive optical elements on curved surfaces
- ARPA-e – waste heat energy harvesting (RedWave Energy)
- DOE – light-extracting conductive substrates for OLED Lighting
- NREL – flexible PV efficiency enhancements using nano-patterned films
- Oculus – optical diffusing films
- US Navy/Idaho National Lab – IR signature control (cloaking film)
- Draper Labs – Zman biomimetic (gecko) adhesive, microfluidics
- Triton – motheye anti-reflection coating on compound lenses
- Holographic and diffractive optical elements on flexible films

The Oracle logo consists of the word "ORACLE" in a bold, red, sans-serif font.The Qualcomm logo features the word "QUALCOMM" in a bold, black, sans-serif font.The Amazon Lab126 logo includes the word "amazon" in its signature black font, with the "Lab126" logo below it, which consists of a small orange circle with a white dot inside, followed by the text "Lab126".The Google logo is the standard multi-colored "Google" text.The Draper logo features the word "DRAPER" in a bold, black, sans-serif font, with the letter "A" in red.The ARPA-e logo includes the text "arpa·e" in a stylized, grey font, with a circular emblem containing a gear-like pattern to the right. Below the text is the tagline "CHANGING WHAT'S POSSIBLE".The U.S. Department of Energy logo features a circular seal on the left and the text "U.S. DEPARTMENT OF ENERGY" in a bold, green, sans-serif font.The NREL logo includes a blue circular emblem with a gear-like pattern on the left and the text "NREL" in a bold, blue, sans-serif font. Below "NREL" is the text "NATIONAL RENEWABLE ENERGY LABORATORY" in a smaller, blue, sans-serif font.

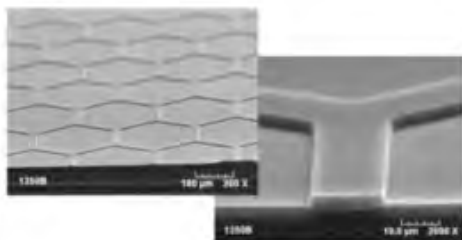
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Applications for MCI Capabilities

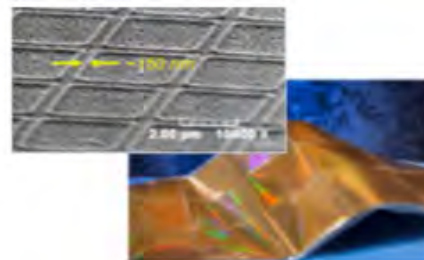
Transparent Conductors

Low-cost patterned films for electronic devices and OLED lighting.



Nanoantenna

Fabrication of nano-scale antennas and terahertz electronics for energy harvesting and THz-wave detection.



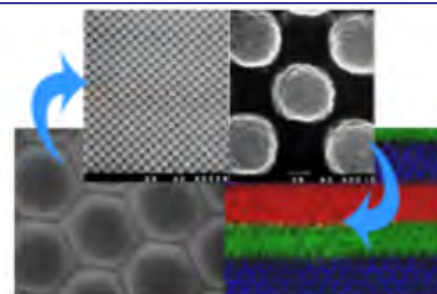
Flexible Electronics

Thin-film transistors and circuit components on plastic films for rollable displays, electronics and sensor networks.



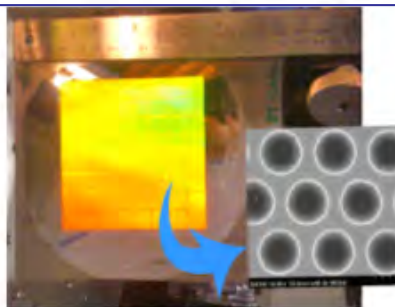
In-Line R2R Processing

Growth and harvesting of arrays of custom-shaped particles for chemical, biological and sensor/detection applications.



Photovoltaics

Use of nanopatterned substrates in solar cells for improved efficiency and reduced costs.



Optical Data Storage

Roll-to-roll nanoforming and thin-film vacuum coating to produce extreme capacity archival data storage media.



Target Acquirers

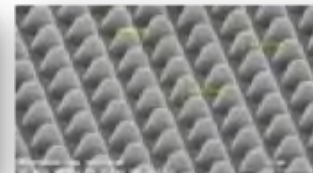
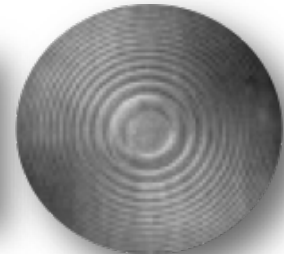
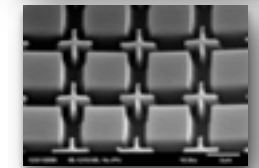
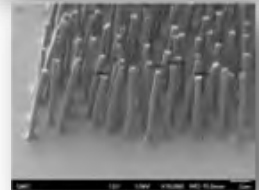
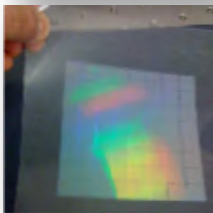
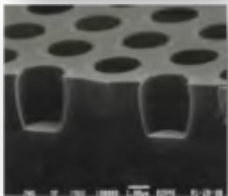
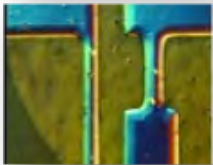
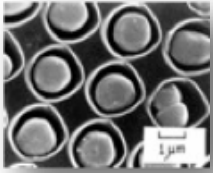
- Corporate Research & Manufacturing
- Contract R&D Labs



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Selected Technical Capabilities

- Roll-to-roll and batch micro & nanoimprinting
- Metal & non-metal patterning on plastic, foils, paper, glass
- Patterning on textured and/or curved surfaces
- Direct room-temperature imprinting into polymer films
- Forming in-situ flexible photoresist masks
- Complex patterned multi-layer films
- Precise transfer of complex patterns between substrates
- Low cost plastic imprint tools
- Forming, filling and sealing microvessels
- Roll-to-roll and batch vacuum coating
- Roll-to-roll pilot scale imprinting
- Microfluidic channels with nanoporous surfaces



SEE [TECHNOLOGY & IP SUPPLEMENT](#) FOR MORE DETAILS



Facilities & Equipment



R2R sputter coater

- Multiple custom designed & built R2R pilot machines for nanomanufacturing and vacuum processing
- Fully-equipped prototype nanomanufacturing lab
- Fully-stocked materials & supplies



GEN-3 R2R nanoimprinter



GEN-1 R2R nanoimprinter
with HEPA hood



UV & thermal processing area



Microscopy & testing



Intellectual Property

- 14 granted US patents
- 7 foreign patents
- 13 pending or published US applications

US Patent	Title
8535041	ADDRESSABLE FLEXIBLE PATTERNS
9724849	FLUID APPLICATION METHOD FOR IMPROVED ROLL-TO-ROLL PATTERN FORMATION
9039401	FORMATION OF PATTERN REPLICATING TOOLS
8940117	METHODS AND SYSTEMS FOR FORMING FLEXIBLE MULTILAYER STRUCTURES
9079349	METHODS FOR FORMING PATTERNS ON CURVED SURFACES
7369483	PRE-FORMATTED OPTICAL DATA STORAGE MEDIUM
7674103 7833389 8062495 9395623	REPLICATION TOOLS AND RELATED FABRICATION METHODS AND APPARATUS
9307648	ROLL-TO-ROLL PATTERNING OF TRANSPARENT AND METALLIC LAYERS
8435373	SYSTEMS AND METHODS FOR ROLL-TO-ROLL PATTERNING
8845912	TOOLS AND METHODS FOR FORMING SEMI-TRANSPARENT PATTERNING MASKS
9589797	TOOLS AND METHODS FOR PRODUCING NANOANTENNA ELECTRONIC DEVICES



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