Agenda Item 1

Featured Start-Up
Potomac Photonics

UNIVERSITY SYSTEM of MARYLAND

BOARD OF REGENTS

SUMMARY OF ITEM FOR ACTION
INFORMATION OR DISCUSSION

TOPIC: Featured Start-Up – Potomac Photonics, Mike Adelstein, President and CEO (information item)

COMMITTEE: Economic Development and Technology Commercialization

DATE OF COMMITTEE MEETING: June 8, 2017

SUMMARY: The featured start-up, Potomac Photonics, has its high-tech facility located at the bwtech@UMBC Research and Technology Park and has participated in the MIPS program. The company has been recognized by both commercial and government agencies for innovation in areas such as medical devices, biotech, electronics, aerospace, and alternative energy applications.

As a leader in microfabrication, Potomac utilizes a variety of leading edge manufacturing technologies, such as lasers, 3D Printers, and hot embossing, enabling the company to micromachine most materials such as polymers, metals, ceramics, and glass with feature sizes that cannot be achieved using conventional processes. Also, Potomac offers contract manufacturing services that range from prototyping to production to more effectively assist its clients in taking products from conception through inception and ultimately market release. Potomac Photonics is ISO 9001:2008 and ISO 13485:2012 certified.

ALTERNATIVE(S): This item is for information purposes.

FISCAL IMPACT: This item is for information purposes.

CHANCELLOR'S RECOMMENDATION: This item is for information purposes.

COMMITTEE RECOMMENDATION: DATE:

BOARD ACTION: DATE:

SUBMITTED BY: Tom Sadowski (410) 576-5742 / Suresh Balakrishnan (301) 445-2783

POTOMAC PHOTONICS

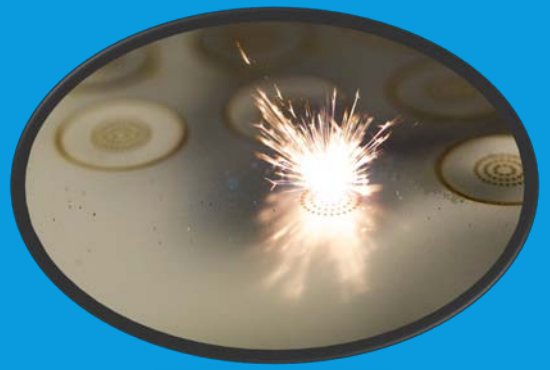
ADVANCED MICRO MANUFACTURING TECHNOLOGIES

Mike Adelstein

USM Board of Regents Committee

POTOMAC PHOTONICS

Potomac Photonics focuses on developing and implementing advanced micro manufacturing technologies for prototyping and production projects.



ECOSYSTEM OF INNOVATION

ECOSYSTEM OF INNOVATION

- Manufacturing Center of Excellence
  - Technology Development
  - Shared Infrastructure and Facilities
  - Education and Workforce Development
  - Outreach

ADVANCED MANUFACTURING SERVICES FOR ORGANIZATIONS LIKE:

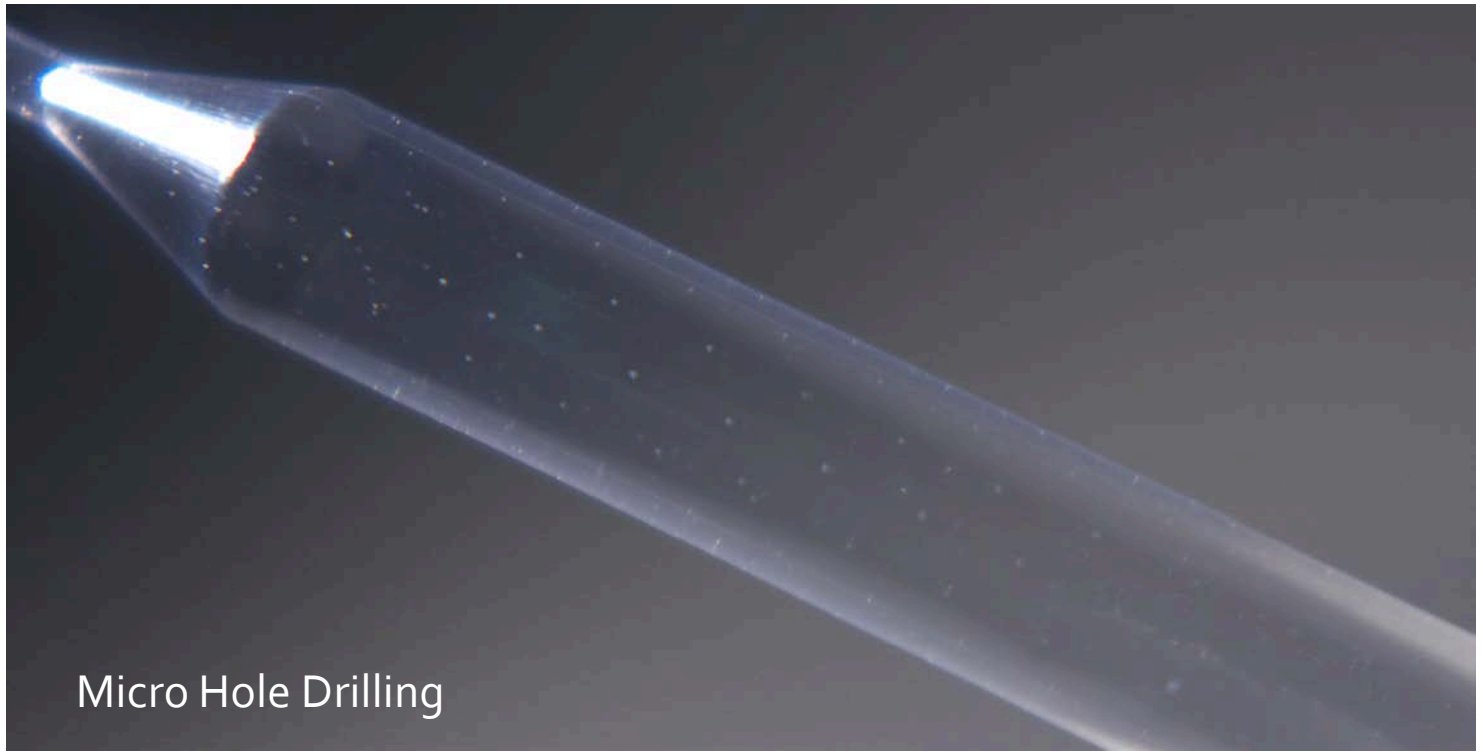
Baxter

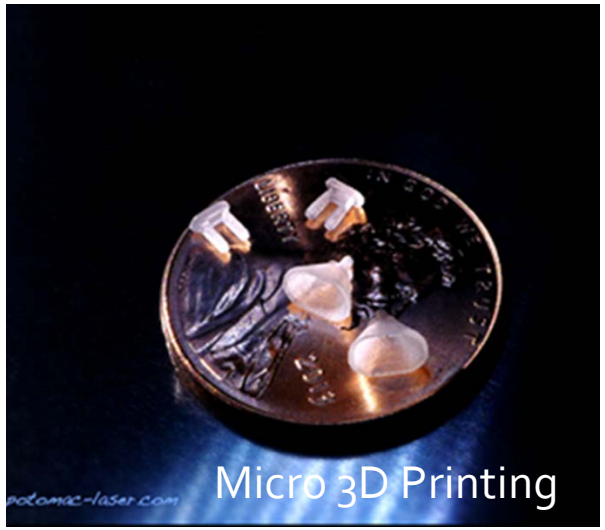
NASA

GM

NIST

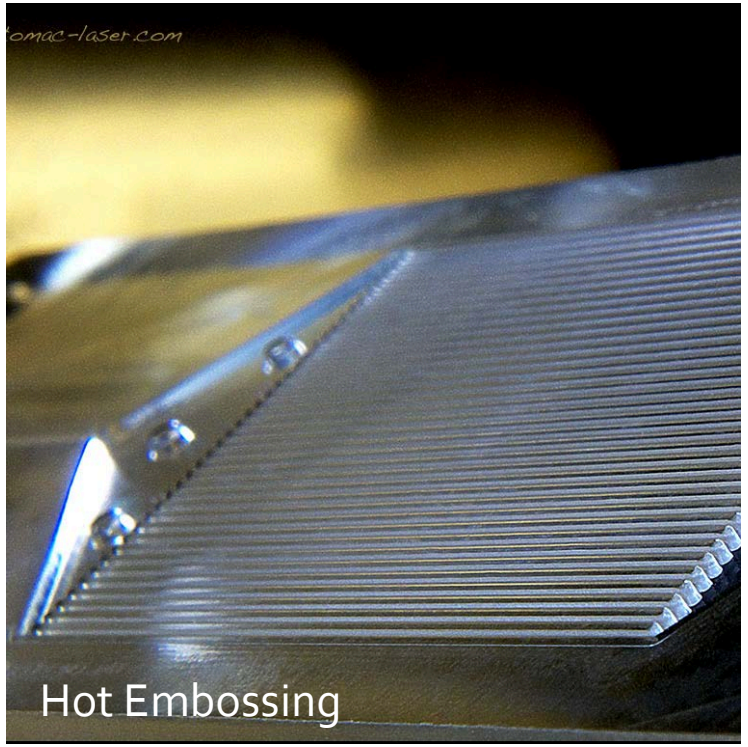
TECHNOLOGIES

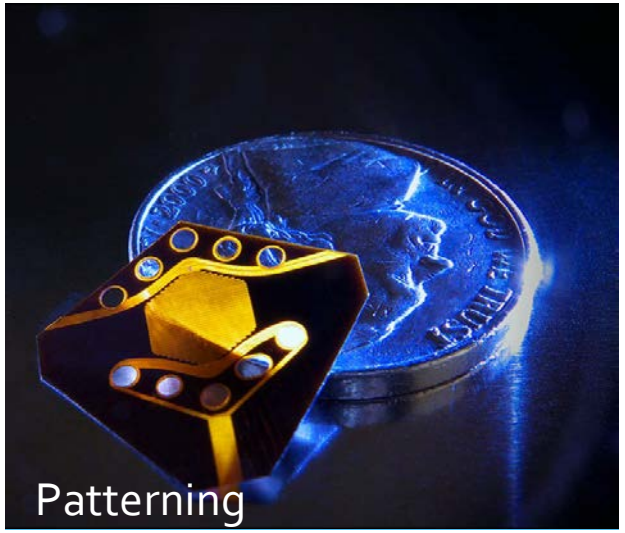

Micro Hole Drilling

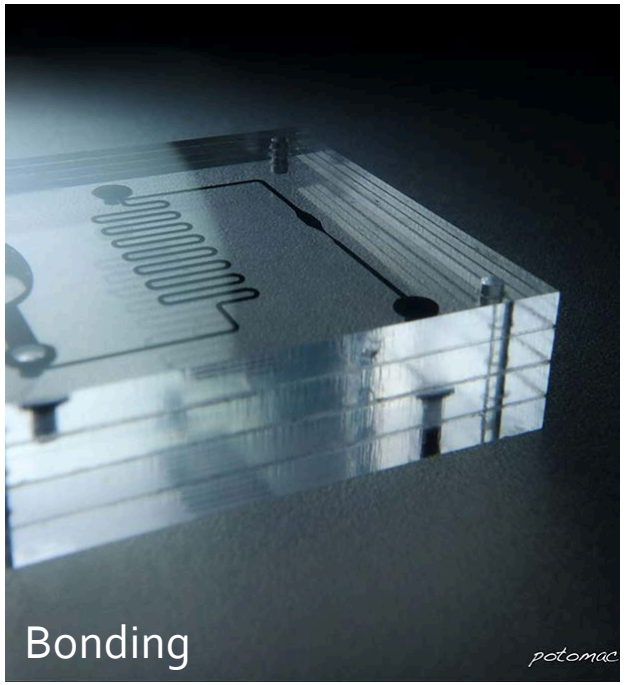

Micro 3D Printing

Laser Marking

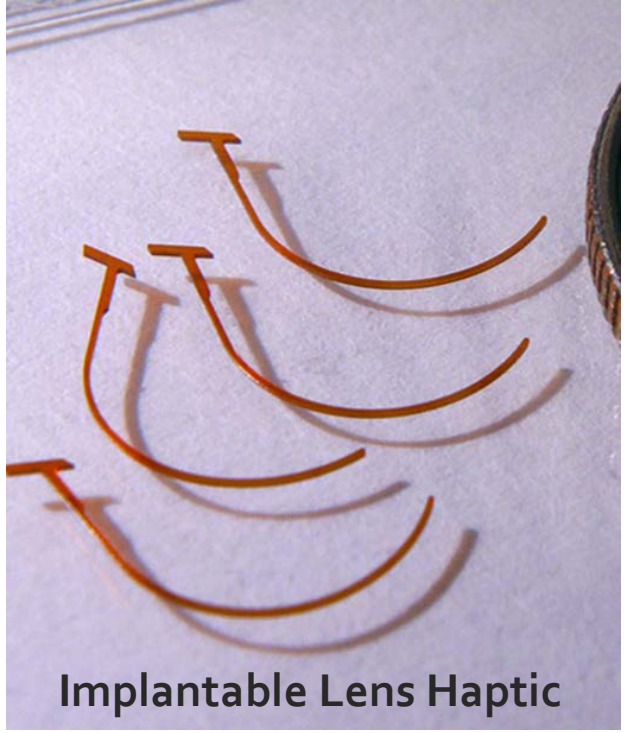
TECHNOLOGIES



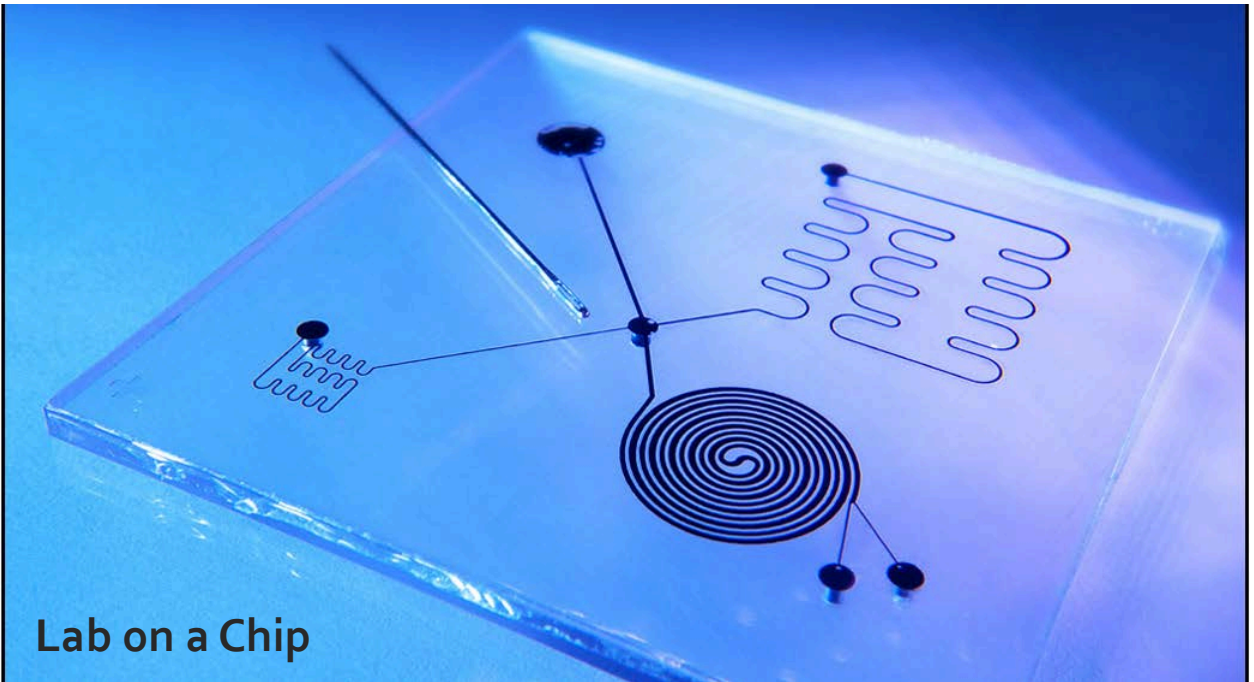




Cancer Treatment



Implantable Lens Haptic

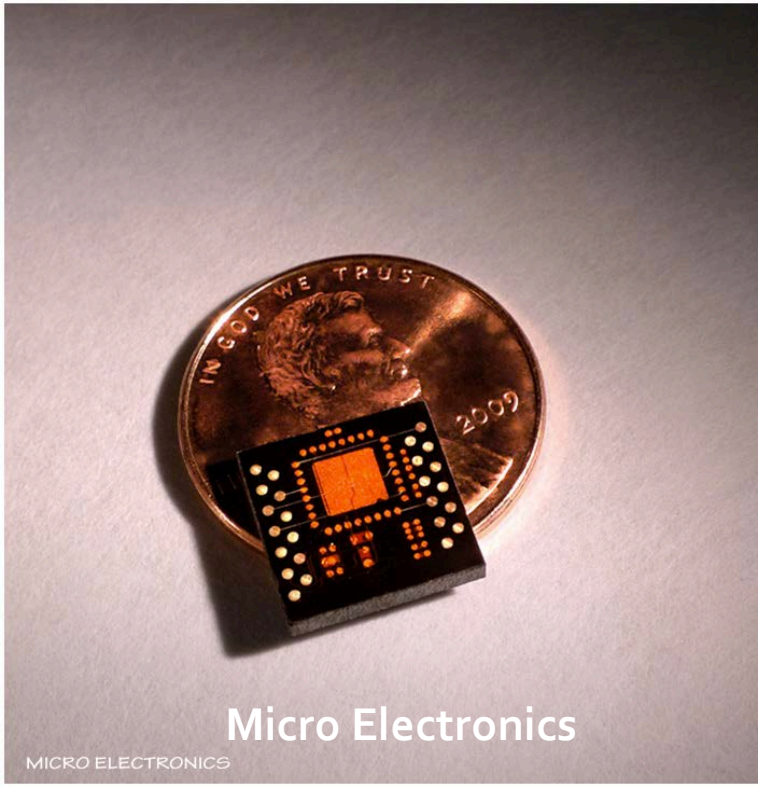


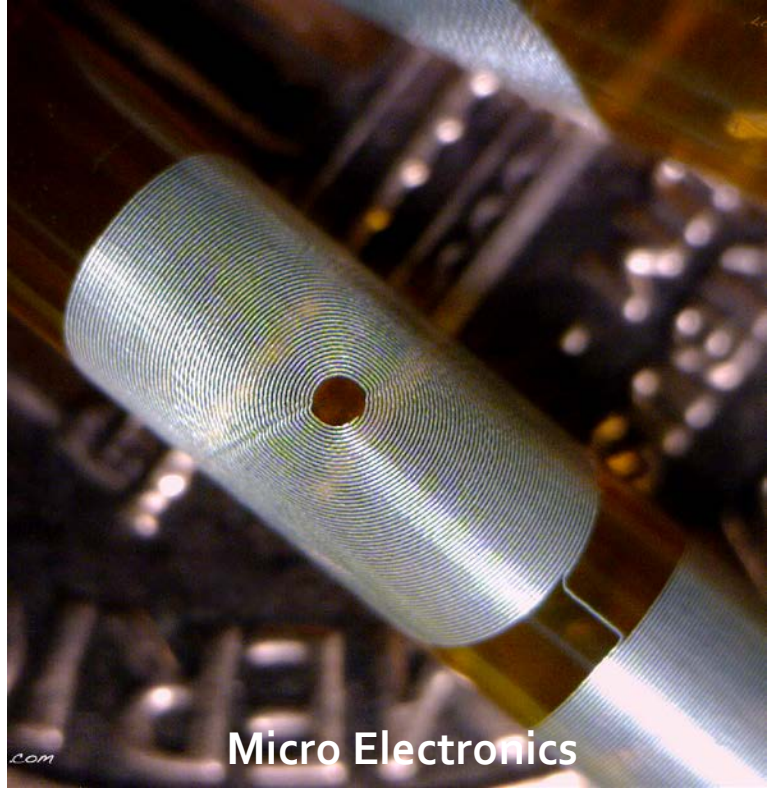
Lab on a Chip

APPLICATIONS

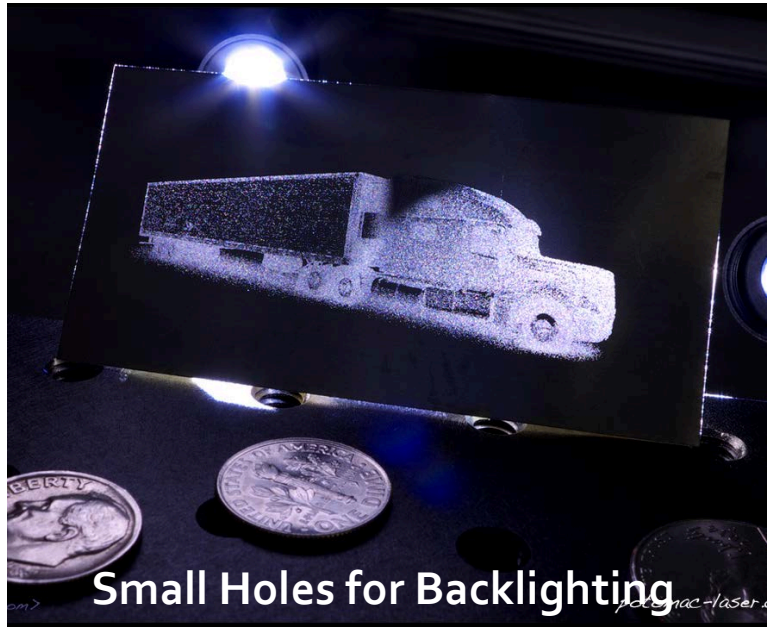
Potomac utilizes our advanced micro manufacturing technology to fabricate devices in many industries such as:

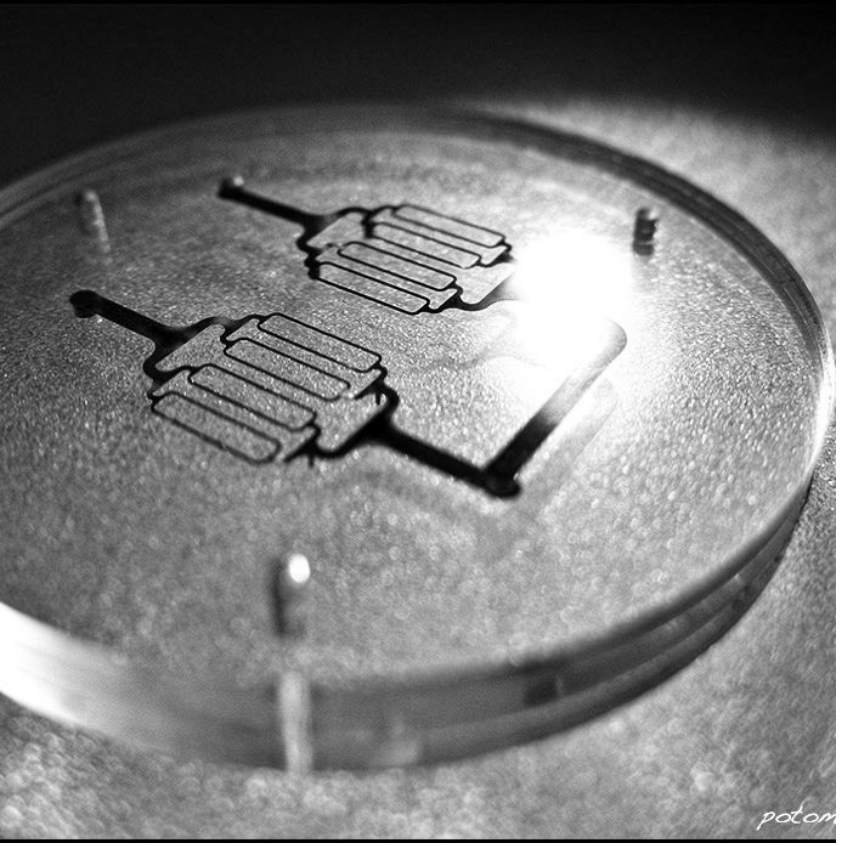
- *Medical*
- *Biotech*
- *Electronics*
- *Aerospace*
- *Automotive*
- *Alternative Energy*

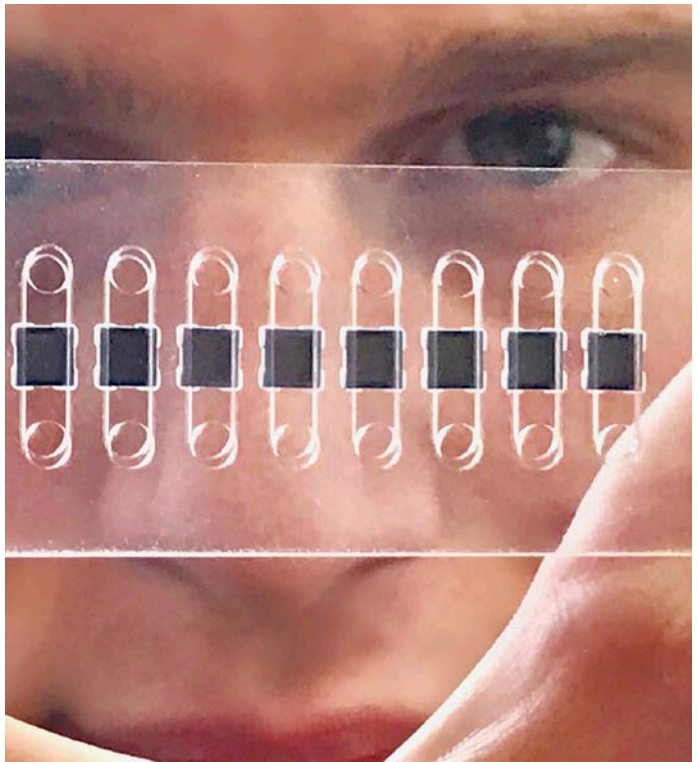




APPLICATIONS



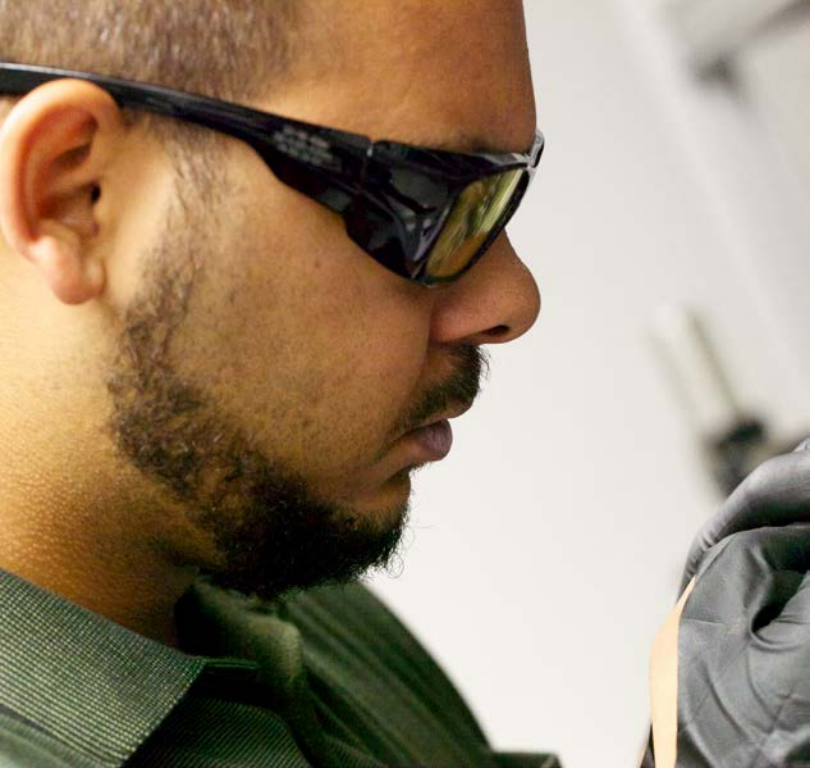




MIPS

MICROFLUIDIC DEVICE FABRICATION

Maryland Industrial Partnerships



COMMITMENT TO EDUCATION

EDUCATION MANUFACTURING INTUITIVE

UMBC

University of Maryland

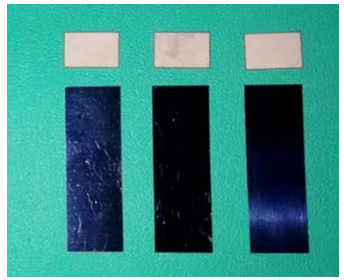
Cal

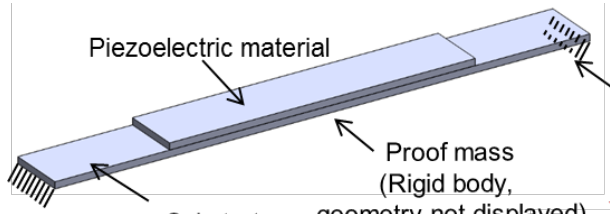
Massachusetts Institute of Technology

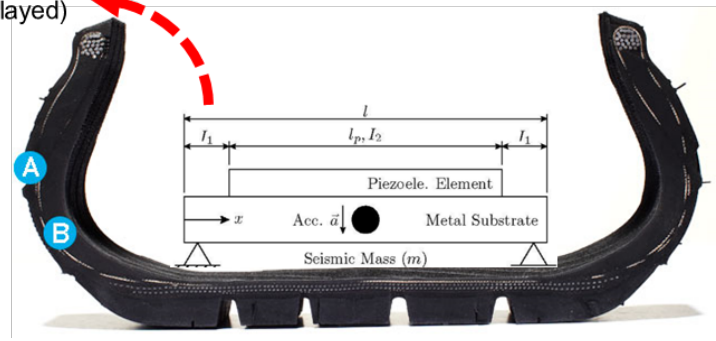
Stanford

UMBC

- An example of one of the many project that we have partnered with faculty and students at UMBC.
- Piezoelectric energy harvester (PEH) generates electricity using the vibrations inside the rotating tire to power a Tire Pressure Monitoring Sensor (TPMS)
- This type of energy harvester will attach to the inner surface of tire
- PEH will replace with conventional batteries which benefits from a longer lifetime and being more environmental friendly
- We laser cut precision metal parts for this device with an extremely fast lead-time and at no charge.



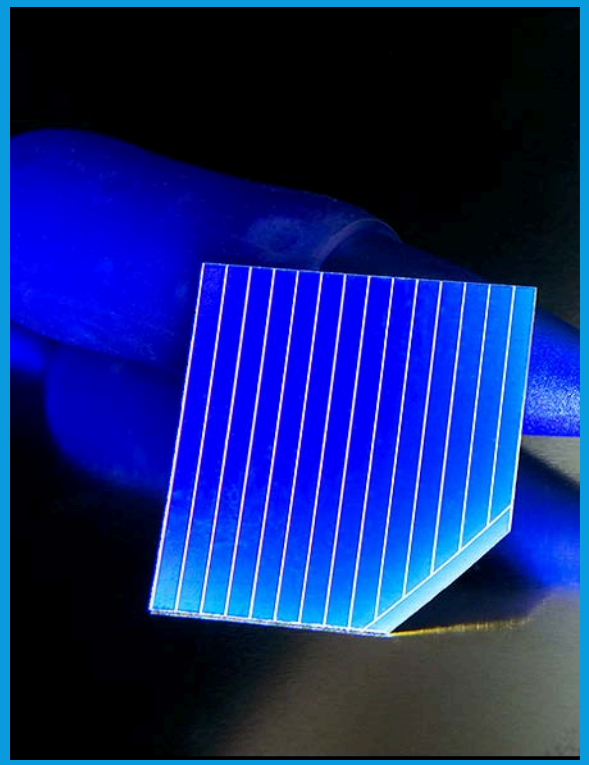




UMBC

- *Since our move to bwtech/UMBC we have successfully:*
  - *Increased our revenues*
  - *Added new employees (many from the USM) including our Director of R&D.*
  - *Developed new manufacturing technologies*
  - *Added a second shift (production runs 7 days week / 20 hours / day)*
  - *Formed partnerships with faculty and students in the University System of Maryland*
  - *Participated in the MIPS program*
  - *Established the Potomac Photonics Scholarship at UMBC*

FUTURE



Potomac will continue to develop advanced manufacturing technologies that will enable our customers to bring new micro products to the market.

We cherish our partnership with UMBC and all the schools in the USM