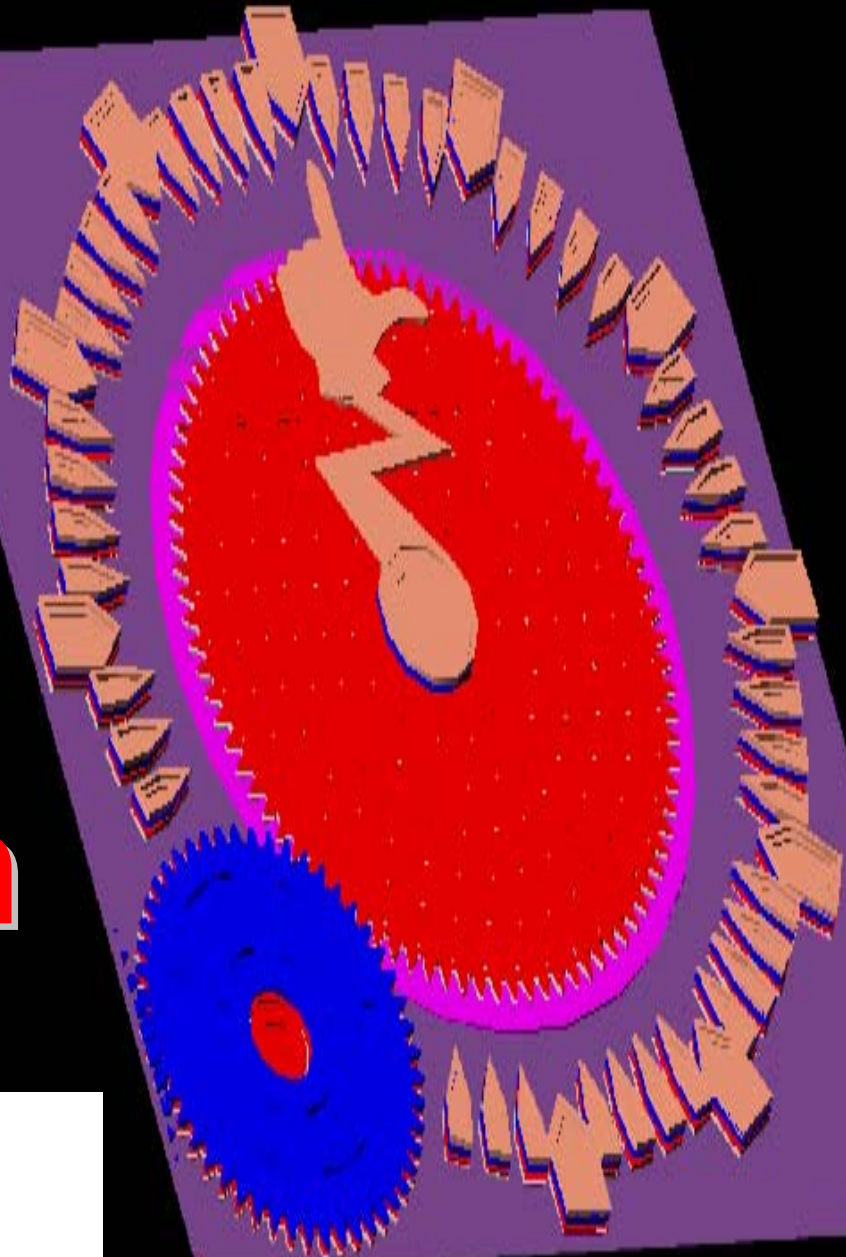


small **T**ime

MEMS @ Texas Tech

TEXAS TECH
UNIVERSITY™
NANO TECH CENTER



MEMS Research @ TTU

MEMS Design and Fabrication

MEMS Testing, Characterization & Control

MEMS Education

MEMS Organization

MEMS Integration and Application

MEMS Design, Simulation and Fabrication

Ideas

Devices

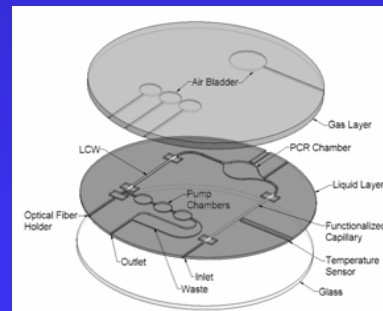
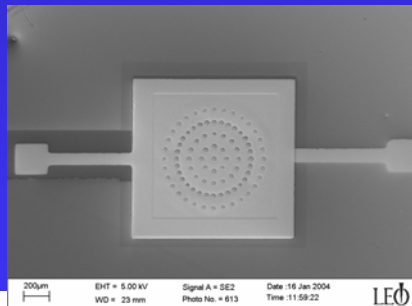
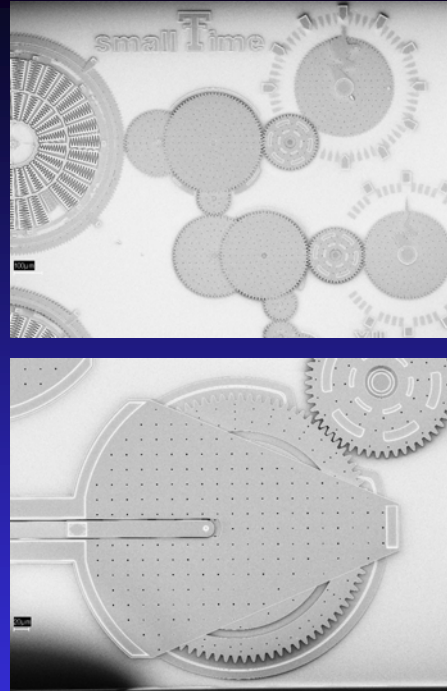
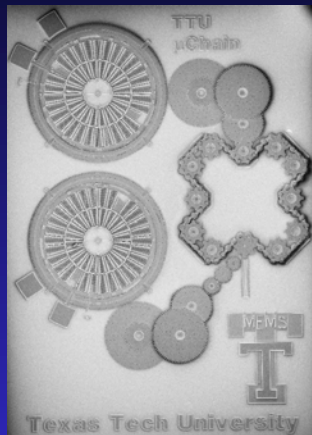
AutoCAD (TTU)

**ANSYS (FEM)
Simulation**

Illustrator

**SUMMIT V
Sandia
National Labs**

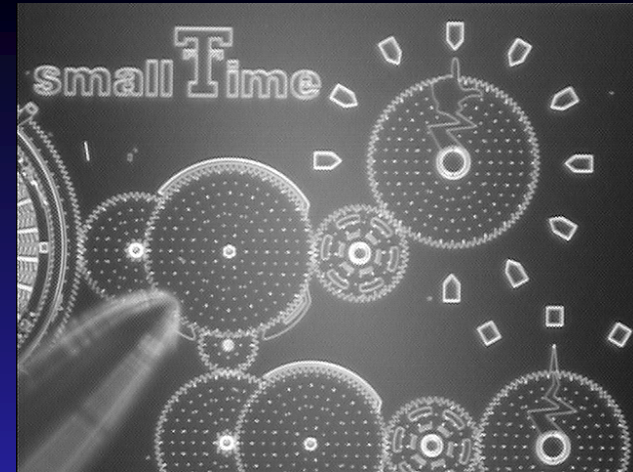
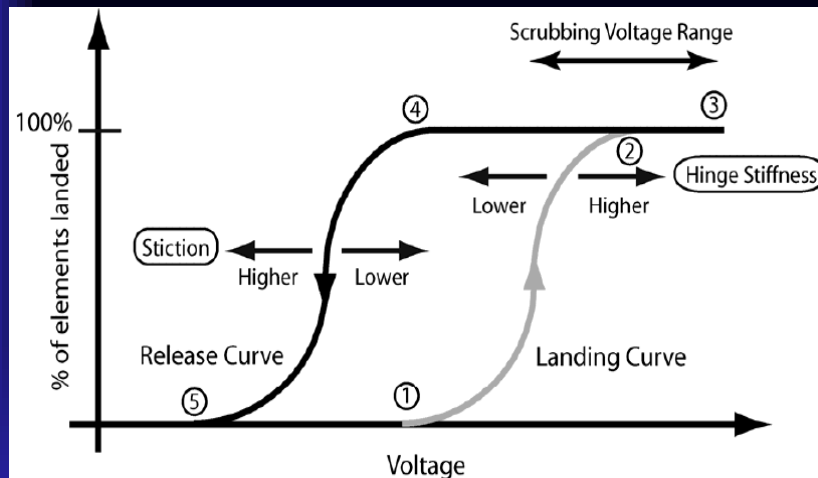
**TTU Nano
Tech Center**



NANO TECH CENTER



MEMS Testing and Characterization



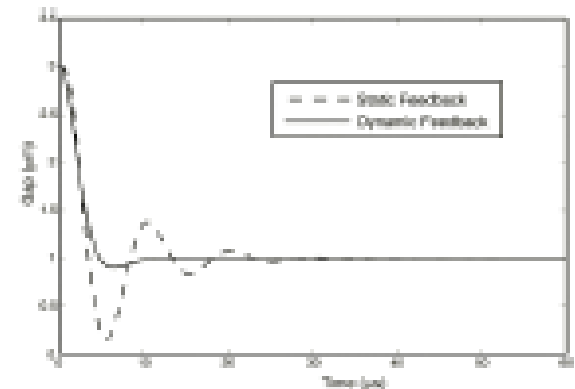
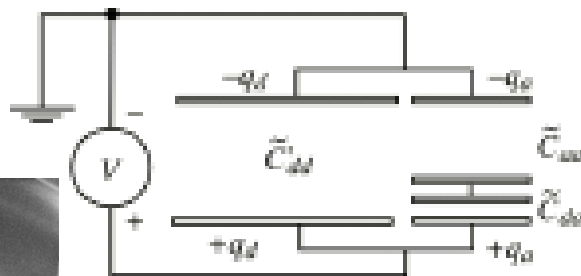
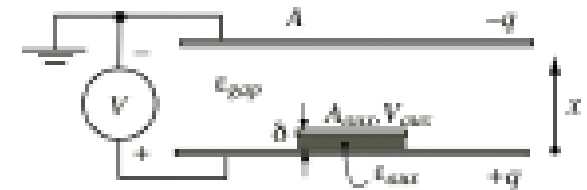
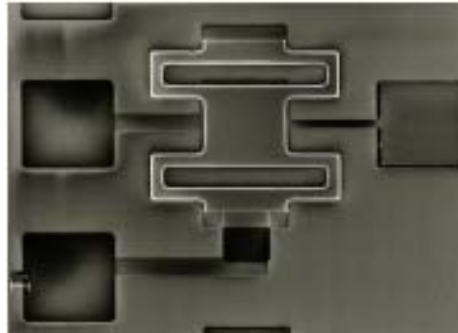
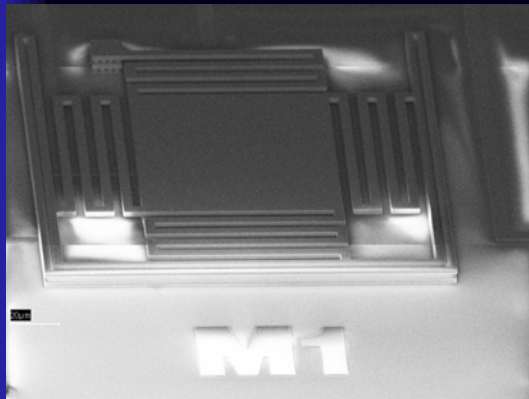
Packaging issues

Stiction
Friction
Accelerated wear
Coatings

Testing

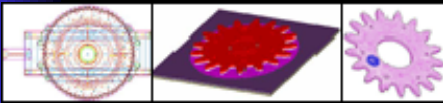
Custom Drivers
Microscope probe stations
Interferometric Microscope
Electron Microscope
Atomic Force Microscopes

MEMS Control



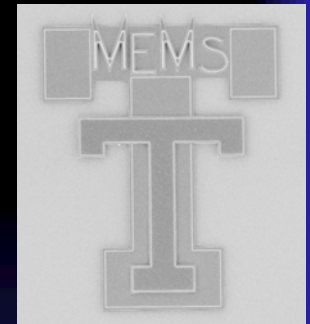
Integrated Sensing & Control

**Adaptive Optics
Non-contact digital micromirrors**

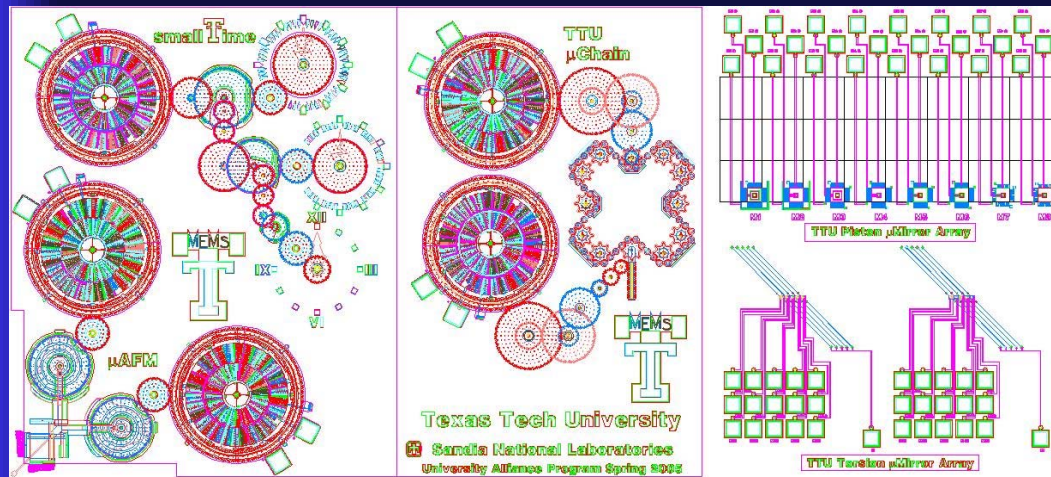


MEMS Education

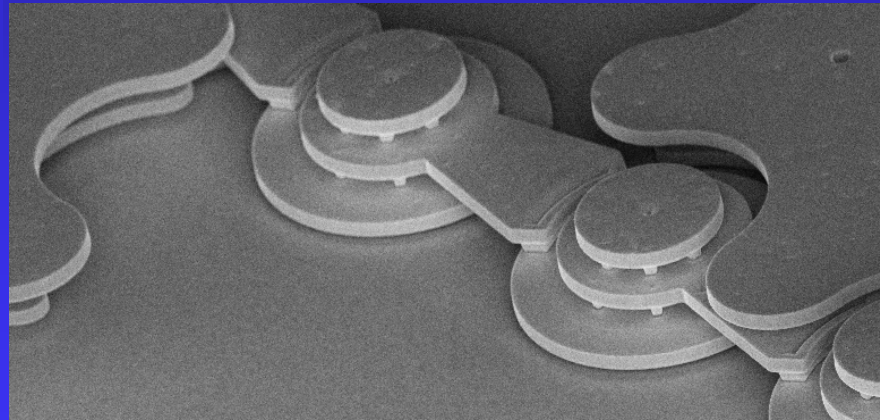
Three Course MEMS Curriculum



Sandia National Labs SUMMIT V Process University Alliance Program



Layer	Thickness	
MMPoly4	[2.25]	
SacOx4	[2.0]	Dimple
MMPoly3	[2.25]	
SacOx3	[2.0]	Dimple
MMPoly2	[1.5]	
SacOx2	[0.3]	
MMPoly1	[1.0]	
SacOx1	[2.0]	Dimple
MMPoly0	[0.3]	
Silicon Nitride	[0.8]	
SiO ₂	[0.63]	
		Substrate 6" <100> n-type

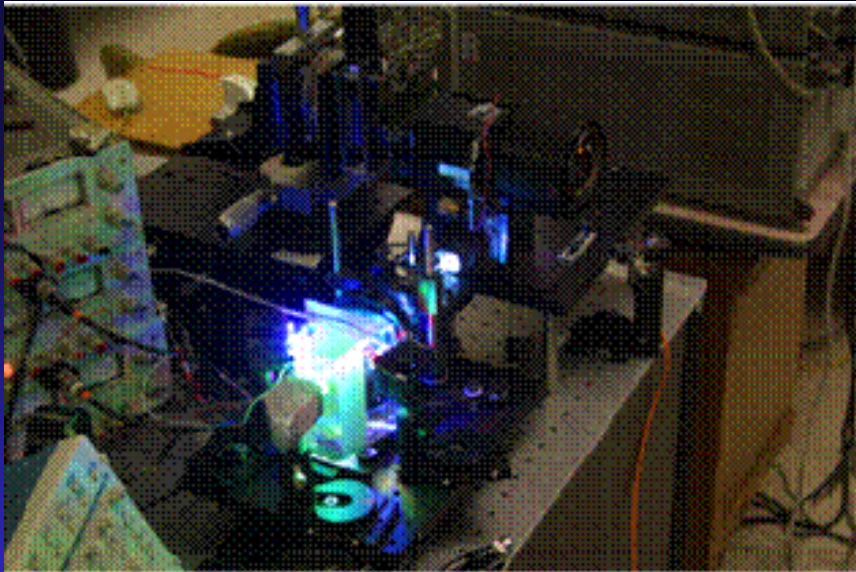


The 18mm² Classroom,
T. Dallas, J. Berg, & R. Gale
Hilton Head 2006

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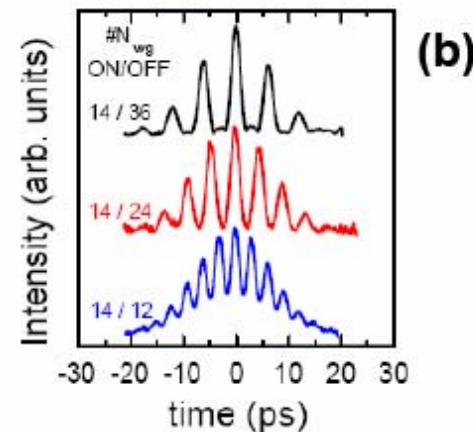
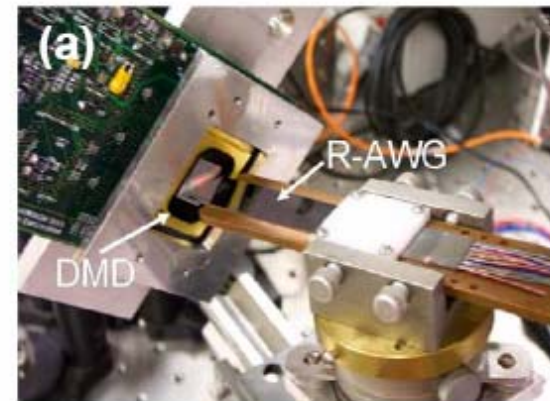


MEMS Integration

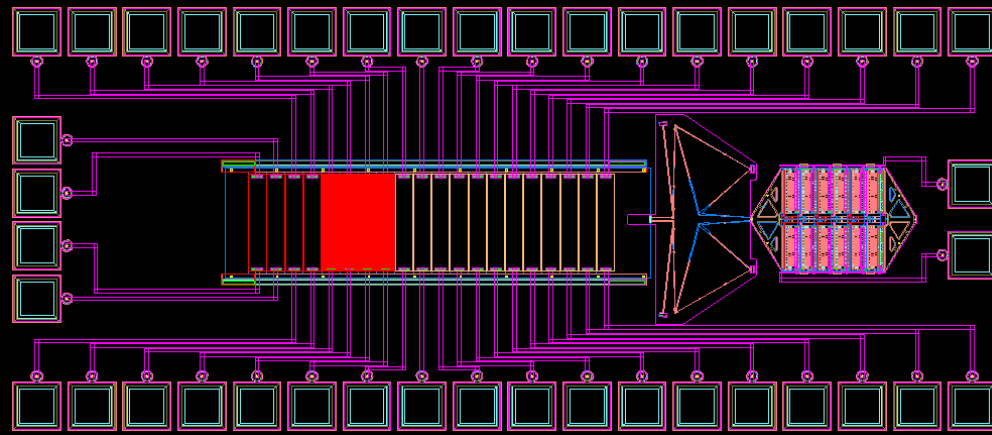


**LED Illuminators for
DMD-based video
projection systems**

**Generation of
arbitrary sequences
of ultrafast pulses**

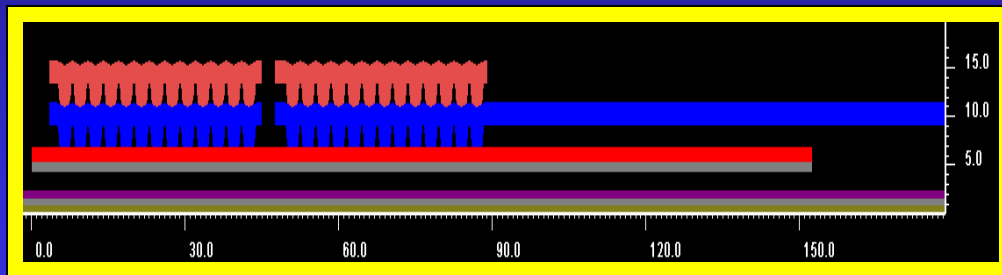


MEMS Applications

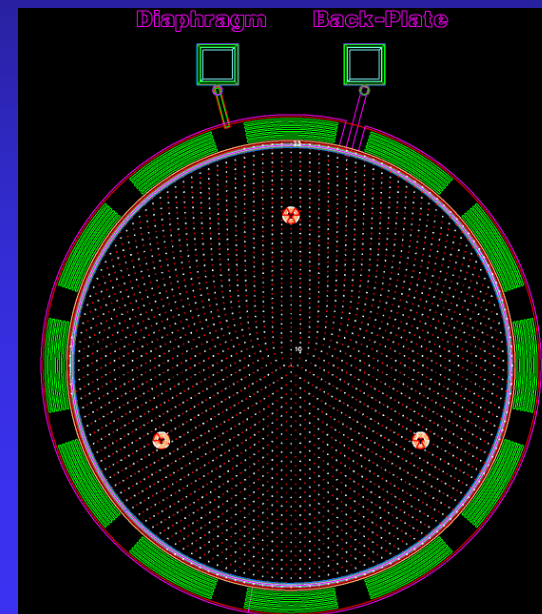


**IR detector with
integrated shutter**

MEMS Microphone



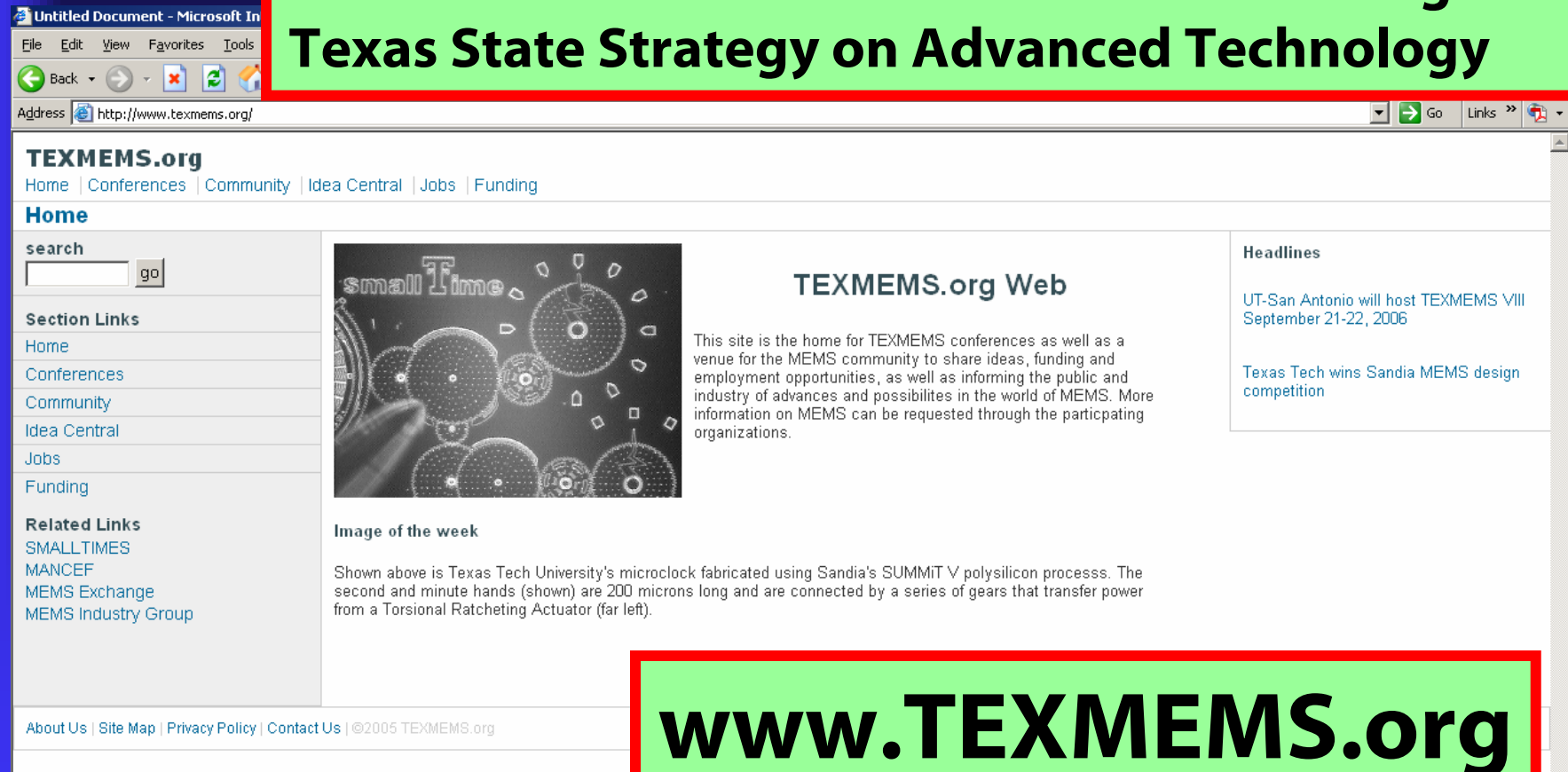
Biochemical sensors



MEMS Organization

TEXMEMS IV – Texas Tech University – July 2002

**T. Dallas – Co-Chair MEMS Technical Working Group,
Texas State Strategy on Advanced Technology**



www.TEXMEMS.org

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