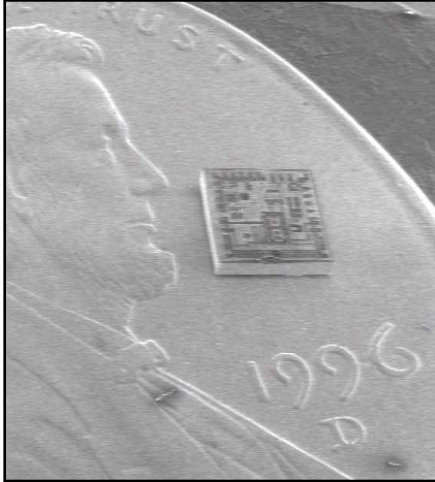


# *New Course Offering for Technology Juniors and Seniors – Spring Semester 2005*

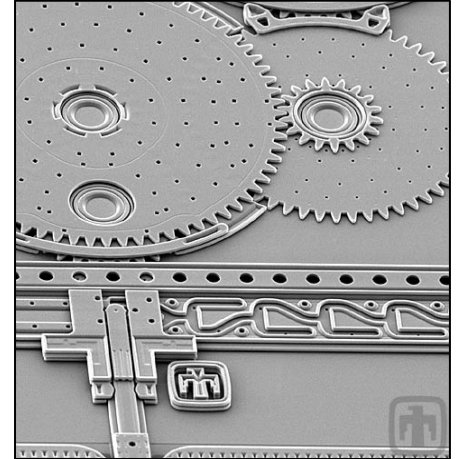
## **MICRO & NANOMANUFACTURING (IT 490)**



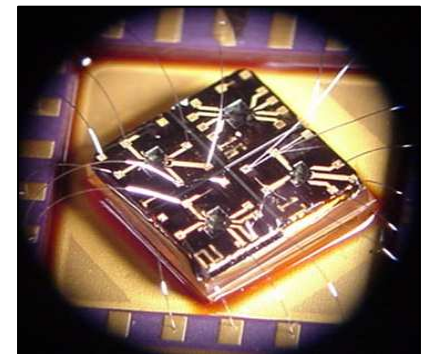
**Lab-on-a-chip**



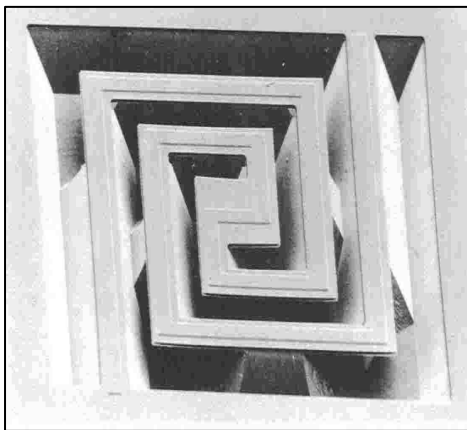
**Mechanical Actuator**



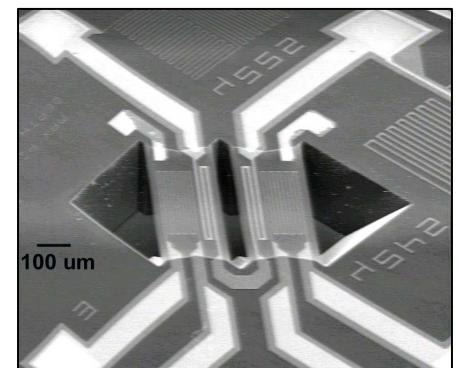
**Integrated Circuit**



**Gas Sensor**



**Microfluidic Channels**



This elective course introduces technologists to the next generation of manufacturing processes based on the micro and nano scales. The development of MEMS/NEMS products relies heavily on pioneering ways to manipulate matter at these scales to fabricate useful products. The main theme of the course is the development of hybrid processes that bridges the gaps between the scales. All students who wish to expand their horizons, and provide industries of the future with mind-blowing solutions to current and future engineering challenges require a basic knowledge of materials and manufacturing processes prior to entering the new course offering.

The course will provide knowledge on microscale manufacturing using lasers, miniature cutting tools, chemical processes such as etching, molding, casting, and non-conventional processing methods.

In the field of nanoscale processing, students will learn how to manipulate atoms using scanning tunneling and atomic force probe methods, understand how molecules can be deposited and manipulated using soft lithographic techniques, and gain confidence in developing hybrid micro and nanoscale processes using a number of case studies and solving open-ended problems concerned with manufacturing at the mixed scales.

**For further details of this new course offering for Spring 2005, contact Dr. Mark Jackson in the Department of Mechanical Engineering Technology – E-mail: [jacksonm@purdue.edu](mailto:jacksonm@purdue.edu), or Telephone: 765 494 0365. Office: Room 140 – Knoy Hall of Technology.**