



**Pressure Sensor Model Workshop
University of New Mexico
Manufacturing Training and Technology Center (MTTC)
October 16, 2010, 10 am to 3 pm**

Workshop Description

This workshop covers the applications, design, and operation of MEMS pressure sensors. Participants will construct a macro-size model of a MEMS pressure sensor using a paint can for the substrate and sensor's reference chamber, a balloon for the sensor's diaphragm, and a mixture of graphite and rubber cement for the sensing circuit. After learning about the Wheatstone bridge as a sensing circuit, participants will apply this knowledge to an analysis of their pressure sensor model. Workshop discussions will include where and how this material and the related activities can be incorporated into an existing curriculum.

Audience: High School and Community College Instructors

Participant Preparation (download educational materials from scme-nm.org):

- Participants need to read the following educational materials prior to the workshop:
 - o MEMS Applications Primary Knowledge (PK)
 - o Sensors, Transducers, and Actuators PK
 - o Wheatstone Bridge Learning Module (Hard copy provided at workshop)
- Participants have full access to these and all of SCME's educational materials via scme-nm.org.

Participant Workshop Materials (SCME Provided)

- Wheatstone Bridge Learning Module
- All materials necessary to build a macro model of a MEMS pressure sensor

Participants are encouraged to bring cameras.

Discussion Led Format for presentations – Ask questions!

Workshop Schedule - Note: Schedule is subject to change as required by SCME/MTTC.

Saturday, October 16: 10 am to 3 pm

10:00-10:30

- Welcome and Introductions
- Overview of Workshop and Expectations
 - o Pre workshop survey

10:30-12:00

- MEMS Applications
- Pressure Sensor Model Introduction
- Pressure Sensor Model construction

12:00 – 13:00 Lunch at MTTC (provided by SCME)

13:00-15:00

- Wheatstone Bridge analysis
- Pressure Sensor Model analysis
- Dissemination and Wrap-up

