

## Mechanics of Materials: Introduction to Strain Gages & Strain Gage Application Tutorial

Sponsored by the SEM Technical Committee on Strain Gages

Organized by: Vince Wnuk, *HPI - Hitec Products, Inc.*

Sunday, June 6, 2010, 1:00 - 5:00 PM

### **Part I: Introduction to Mechanics of Materials**

*Instructor: M.E. Tuttle, University of Washington*

The emphasis of this tutorial will be on mechanics of materials as it relates to the use of strain gages. Topics will include stress/strain relationships, limitations of Hooke's Law, and how they relate to strain gage measurements.

### **Part II: Strain Gage Characteristics**

*Instructor: R.L. Showalter, Vishay Micro-Measurements*

This tutorial will discuss basic strain gage characteristics including gage factor, temperature effects, transverse sensitivity, etc. This information will be especially helpful in understanding how the strain gage responds to the strain field, and to other factors such as temperature change in the test environment.

### **Part III: High Temperature Strain Gage Characteristics**

*Instructor: V. Wnuk, HPI Hitec Products, Inc.*

This tutorial will present case studies to illustrate how high temperature free filament strain gages can be used to solve measurement problems. Examples will include objectives, "design" of the measurement process, and results, and the presentation will be organized to illustrate a logical progression from problem to solution.

**This tutorial is included with the conference registration fee.**