

## About Your Instructors

**Myer Ezrin, Ph.D.**

Dr. Ezrin has a Ph.D. in Chemistry from Yale University 1954, and worked for Dupont, Monsanto and Springborn Laboratories before joining UCONN-IMS as Director of the IMS Associates Program in 1980. He has 55 years of industry/academia experience (29 in industry and 26 in academia serving industry). He retired in 2006 after a distinguished career in plastics analysis and plastics failure analysis. He is author of "Plastics Failure Guide - Cause and Prevention", Hanser, 1996. He has consulted and testified in patent infringement and product liability litigation. In 1999 he was elected Fellow of the Society of Plastics Engineers.

**Arthur J. McEvily, D. Eng. Sc., Professor Emeritus, University of Connecticut**

Dr. McEvily received his BS, MS, and D.Eng.Sc. degrees from Columbia University. From 1949 to 1961 he was an Aeronautical Research Scientist at NACA-NASA. From 1961 to 1967 he was a Research Scientist at Ford Motor Co. Since 1967 he has been at the University of Connecticut. At UConn he served as first Head of the Metallurgy Dept. and has been a longtime IMS member. His primary research has dealt with the fatigue and fracture of metals.

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Return Services Requested

# *Introduction to Materials Failure Analysis*



## *A Short Course for Engineers, Scientists, Designers and Quality Assurance Managers*

Tuesday, June 12 through  
Thursday, June 14, 2007  
9:00 a.m. - 5:00 p.m.

Sponsored by:

Institute of Materials Science &  
IMS Associates Program  
University of Connecticut  
Storrs, Connecticut

For many years the Institute of Materials Science has offered separate short courses on failure analysis of metals and ceramics; and plastics failure. This year we combine these courses into "Introduction to Materials Failure Analysis". The science and technology of metals, ceramics and plastics failures share common features in areas such as fracture, fatigue and environmental effects. It is not unusual to have to deal with metals, ceramics and plastics in a single product. This step toward a more universal approach to materials failure benefits participants.

The potential personal injury, property damage, financial and legal consequences of materials failure can be very high-including death, litigation for hundreds of millions of dollars, and bankruptcy. Designers and engineers walk a virtual tightrope in their efforts to produce competitive profitable products with the required properties. Examples of failures include a metal bracket that snaps without warning causing an engine to rip from an airplane in mid-flight and polycarbonate motorcycle brake handles that break on application.

This course takes some of the mystery out of why materials fail by demonstrating the role of the major factors that govern failure or success: material, design, processing, and service conditions. The course bridges the gap between theoretical and basic aspects of polymers, metals, ceramics and failures in practice. Prevention is emphasized throughout the course. Case studies of wide-ranging types of failure of different materials and applications illustrate the underlying principles. Product performance can be improved by knowing the principles involved and appropriate methods of failure analysis.

#### Who Should Attend

This course will be useful to people with experience in materials as well as to students and beginners in the fields. A technical background in materials is not required. Plastics resin manufacturers and processors, as well as metals and ceramics suppliers and engineers, and users of related products will benefit from it. Attendees are welcome to bring examples of failures in their experience. They will be discussed as time permits.

#### Course Location and Schedule

The course will be offered on the Storrs campus of the University of Connecticut, School of Business Building, Room 202, June 12 through 14, 2007 from 9 AM to 5 PM each day.

#### Registration

The registration fee of \$900 includes workshop attendance, two textbooks (*Plastics Failure Guide - Cause and Prevention* and *Metal Failures: Mechanisms, Analysis, Prevention*), set of course notes, lunch and coffee breaks each day. Registration for this course closes May 26, 2007.

#### Discounts Available

Participants from firms employing 30 people or fewer receive a \$200 discount per participant. Companies employing more than 30 people can receive a \$200 discount per participant by sending more than two participants to the course.

#### Refund and Cancellation Policy

The registration fee is refundable, less \$35, prior to the first day of the course only if you notify Student Services: 877-892-6264 or 860-486-4905. Participants who do not attend and fail to cancel are subject to the full fee. Participant substitutions may be made. The Institute of Materials Science reserves the right to change instructors and cancel or reschedule the course in the event of insufficient enrollment or unforeseen circumstances.

#### Further Information

Questions regarding the course should be directed to Mark Dudley at 860-486-2256 (voice), 860-486-4745 (fax) or mark.dudley@uconn.edu. You may register online or by phone, mail or fax (see registration form).

#### IMS Associates Program

The IMS Associates Program assists industry with short term projects in research and development. The Program also assists with manufacturing projects where comparable expertise or facilities are not readily available from the private sector. For more information see: [www.ims.uconn.edu](http://www.ims.uconn.edu)

## Course Highlights

- Fundamental aspects of metals, ceramics and plastics materials as they relate to failure
- Types of failures
- The role of material, design, processing and service conditions in failure
- Failure analysis methods
- Fracture mechanics
- Ductile and brittle fractures
- Creep
- Corrosion
- Environmental stress cracking
- Case studies

Schedule #1009

## Introduction to Materials Failure Analysis

June 12 - 14, 2007

Registration Form

Name \_\_\_\_\_

Title \_\_\_\_\_

Company \_\_\_\_\_

Business Address \_\_\_\_\_

Phone \_\_\_\_\_

Fax \_\_\_\_\_

E-mail \_\_\_\_\_

Please let us know if you require special services or arrangements due to a disability.

#### Registration Fee

- \$900 Registration Fee
- \$700 Registration Fee for firm with 30 or fewer employees - or -  
If more than two people from a firm of over 30 employees
- \$400 One Registration for IMS Associates Program members (additional registrations \$700)

#### Method of Payment

- Check or Money Order payable to UConn
- Purchase Order # \_\_\_\_\_

Agency Name \_\_\_\_\_

VISA  MasterCard  Discover  Diners Int'l

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Exp. Date \_\_\_\_\_

Cardholder's Signature \_\_\_\_\_

#### 4 Ways to Register

**Online:** [www.ims.uconn.edu/ims/content/view/74/128](http://www.ims.uconn.edu/ims/content/view/74/128)

**Customer Service:** 877-892-6264 or 860-486-4905

**Mail:** University of Connecticut  
Student Services Office  
One Bishop Circle, Unit 4056  
Storrs, CT 06269-4056

**Fax:** Dial 860-486-0272