

**The Peoria Chapter of ASM International
March 3, 2003 at the Mark Twain Hotel - Packard Plaza**

**The Peoria Chapter of ASM International
& American Foundry Society**

Presents

**HIGH TEMPERATURE ADVANCED MATERIALS
FOR LOW-EMISSION, HIGHER EFFICIENCY
GAS TURBINES: ASSURING RELIABILITY**

Dr. William A. Ellingson, Argonne National Laboratory

TECHNICAL CHAIRMAN: Dr. Iqbal Shareef

SPECIAL EVENT: STUDENT NIGHT / MEI

Social Hour - 4:30pm • Dinner - 5:30pm

Technical Talk - 6:00pm

Prepaid Reservations Required by February 24, 2003!! Reservations are \$12.00.

Call at Jeff Jensen (309) 578-8153 jensen_jeff_a@cat.com

Please make all checks payable to Peoria Chapter of ASM

About Our Speaker...



Dr. Ellingson is a senior engineer in the Energy Technology Division of Argonne National laboratory where he has been a member of the scientific staff for over 28 years. He is a fellow of the ASME and also a fellow of the American Ceramic Society. For the past 20 years, the focus of his work has the development of methods and devices for nondestructively characterizing high temperature structural ceramic materials. He holds eight patents and has authored over 100 publications.

ABSTRACT

High gas-firing temperature, high efficiency gas turbines are under development for electric power generation as well as advanced propulsion systems. These turbines are also required to meet low emission targets. The high firing temperatures in the combustion zone as well as the high temperature of the first stage vanes and blades are mandating the insertion of advanced ceramic materials. These ceramic materials include: a)- ceramic matrix composites, both SiC/SiC and oxide/oxide with environmental barrier coatings, b)- monolithic ceramics, mainly Si₃N₄, also with an environmental barrier coating as well as c)-metal alloys with thermal barrier coatings—usually of YSZ. In order to reduce the risk to the engine when inserting these new materials as well as assess the state of the materials due to various degradation processes, various non-contact, nondestructive methods are being developed at Argonne National Laboratory as well as other institutions. It will be the intent of this seminar to present a review of some of these advanced materials, their current state of employment and to review the various non-contact, nondestructive methods with obtained data to demonstrate the applicability.

◆ ◆ CHANGE IN ADDRESS? CALL KELLY LANE (309) 578-1567 ◆ ◆

Trivia Question for FREE Dinner

Last month George Vander Voort talked about the Metallurgy of Meteorites. This trivia question is from his talk.

The Geologist told him,
"You can't study mountains with microscopes."

Who was he and what was he the first person to do?

????????????????

YOUNG MEMBERS SOCIAL EVENT

The Peoria chapter of ASM will be holding its annual Rivermen Hockey Night at the Peoria Civic Center on Saturday, March 29th at 7 pm. The cost per person is \$3, which buys a seat in the upper bowl at mid-ice. Thirty tickets are available on a first-come, first-serve basis. Please call Mike Pollard at 578-6133 if you are interested.

Tech Chair Bio

Dr. Shareef is a professor of Manufacturing Engineering at Bradley. He has BS in Mechanical, MS in Manufacturing, PhD in Mechanical and a year of postdoctoral work in Experimental Stress Analysis. During his tenure at Bradley University for last 17 years, he has taught graduate and undergraduate courses in areas of Manufacturing Processes, Design for Manufacturing, Optimal Design, and Tribology. He has more than 60 publications and is listed in several Who's Who in the Engineering and Education. He was the first in the nation to develop a Certified Manufacturing Engineering (CMfgE) Review course exclusively for Caterpillar Employees in 1989, which is being used to date for national audience through Society of Manufacturing Engineers. He is a Registered Professional Engineer in the state of Illinois and a member of National Council of Engineering Examiners and Surveyors (NCEES). He has written more than 150 PE questions that were accepted for use in various PE exams starting from 1991 to date. Dr. Shareef is the recipient of "Peoria Area Outstanding Engineer of the Year". He is a member of ASM, ASME, SME, TMS, ISA, ISPE, NSPE, Tau Beta Pi, and Sigma Xi.

PREPAY FOR APRIL MEETING

NASA Astronaut, Sandra Magnus will be presenting "Materials in Space – An Astronaut's Perspective." ASM, AFS, SWE and SAE members need to prepay for tickets by March 3. Reservations are \$12. Call Jeff Jensen (309) 578-8153 or jensen_jeff_a@cat.com. Please make all checks payable to "Peoria Chapter of ASM".

MEI CLASSES – LAST CHANCE TO SIGN UP

We will again be offering training to individuals working to expand their knowledge in Metallurgy. The course fee is \$325, which covers the cost of chapter book (12 - 18) and instructor. Please contact Chad Siebenaler (675-2162) to enroll or inquire about one of the following classes. Reservations must be made before February 19th to secure enrollment.

Failure Analysis (Instructor: Ken Burris)
Heat Treat of Steel (Instructor: Mike Johnson)
Aluminum and its Alloys (Instructor: Gerry Gegel)

*Classes consist of 12-18 chapter tests and one final exam (open book).

**Course site is usually based on majority/locale of students.

ASM INTERNATIONAL

**9639 Kinsman Rd.
Materials Park, OH 44073
March 3, 2003, Issue No. 7
Published Monthly**

**PEORIA CHAPTER ASM INTERNATIONAL
2002-2003 OFFICERS**

Chair Ric Woldow
Vice-Chair Matt Kiser
Treasurer Scott Wiseman
Secretary Ron Morgan

EXECUTIVE COMMITTEE COMMITTEE CHAIRS

2002 - 2003	Finance Tim Van Den Avond
Russ Harrell, Bud Harvey	Membership Aaron Barklage
Steve Matthew, Dr. Iqbal Shareef	Publicity - Flyers Kelly Lane
Dick VanPelt	Web Page Emily Rivera
	Arrangements Scott Brown
2003 - 2004	Reception Andrew Wagner / Jeff Jensen
Sam Banerji, Jackie Earle	Student Outreach John Gerecak
Fritz Grensing, Tim Hoeffft	Education Late Blair / Mike Motyl
Erich Michelfelder	Long Range Planning Rich Little
	MEI Chad Siebenaler
2004 - 2005	Sustaining Members Steve Matthew /
Tom Clements, Scott Kozinski	Mike Johnson
Ron Streib, Sheryl Tipton	Young Members Mike Pollard
Tim Van Den Avond	Yearbook Dave Akers
	Auditor Liz Heatwole
	Historian Dick Van Pelt
	Nominating Ron Streib
	Program Ken Burris
	Bradley Student Iqbal Shareef