Thursday, January 19, 2017

**Topic:**
From Cast/Wrought to PM: The Pursuit of High Performance Superalloys for Aircraft Gas Turbines

**Speaker:**
Gernant E. Maurer, PhD, FASM (Bio on page 3)
ASM International Past President

Commercial aircraft gas turbines are amazing machines that can operate at very high temperatures, under tremendous stress, in oxidizing/corrosive environments and for very many years. The materials engineering that makes these high performance, very reliable systems part of our lives is a technological marvel and is the cumulative development of over 50 years. This presentation will trace the technical hurdles that have occurred over time and will include the pursuit of defect-free, fine grained cast/wrought superalloys to the state-of-the-art, ultra-fine grain PM superalloys turbine disks that power commercial aircraft. The success of this development is more about materials processing than the alloy compositions, although they are closely related. The contrast in the processing routes is dramatic. In the C/W case, large ingots, usually no larger than 10,000 lb are triple melted to avoid deleterious solidification events such as severe segregation and melt related defects and then conventionally forged into very uniform structures. In the powder metallurgical case, processes are developed to make uniform, ultraclean, and segregation-free microscopic ingots that are then reconsolidated to avoid defects and to maximize performance. The compacted billets can be used as-HIP (hot isostatically pressed) or extruded and isothermally forged to further enhance properties and reliability.

At the very least, this presentation should give you plenty to think about the next time you are taking off from PHL and the most critical jet engine components are under their maximum stress.

**Technical Chairperson:** Al Singmaster, Al Singmaster Personnel Services

**Meeting Sponsors:** Laboratory Testing, Inc. and LTK Engineering Services

---

**SAUVEUR AWARD NIGHT**
Thursday, January 19, 2017

**Menu:**
Choice of Parmesan Crusted Chicken Breast with Lemon Chardonnay Sauce or Pasta Primavera with Seasonal Vegetables. (all entrees served with Chef’s Selection of Potato and Vegetable, Coffee, Tea and Iced Tea). Dessert: Cheesecake with Raspberry Sauce.

**Social Hour:** 6:00 - 7:00pm, Dinner: 7:00pm

**Prices:** Members and Guests $35 | Retirees $24 | Students and Faculty $15

**Meeting Registration:** PLEASE NOTE**: All reservations must contact Trevor Jones at 215-721-1502 ext 1220 or on our website at http://philadelphia.asminternational.org no later than 1:00 PM on the Tuesday before the meeting to guarantee availability.

---

**MEETING CANCELLATION NOTIFICATION**
In the event of cancellation of a meeting due to inclement weather, we will broadcast the news as part of KYW News radio’s (1060 AM) Storm Center Service. ASM cancellations will be specifically announced when KYW airs community cancellations at :20 and :50 past each hour during the afternoon of the day of the meeting. ASM’s name will be specifically mentioned, so listen for the name rather than an organization number as is used for schools.
CHAIRPERSON’S MESSAGE
JANUARY 2017

Greetings from the ASM Liberty Bell Chapter. I hope everyone had an enjoyable and safe holiday season. I can’t believe 2017 is already here!

As you have already been notified, our meeting this month will take place at the Joseph Ambler Inn on Thursday, January 19th. I hope you are looking forward to checking this new venue out as much as I am. From what I hear, the service is wonderful, the atmosphere is unique and the food is excellent. The upcoming January meeting is the Sauveur Award Night and we are looking forward to hearing from the recipient, Dr. Gernant Maurer, FASM.

Please mark your calendar that next month’s meeting is Continuing Education Night and will be held on Thursday, February 16th at Maggio’s in Southampton.

I hope to see you in a couple of weeks at the Joseph Ambler Inn and wish you a prosperous 2017!

Sincerely,
Nick Cordisco
2016-2017 Chapter Chairperson

2017 UPCOMING EVENTS

<table>
<thead>
<tr>
<th>Date</th>
<th>Day</th>
<th>Topic</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>01-19-17</td>
<td>Thursday</td>
<td>Sauveur Award Night, Speaker: Gernant Maurer - ASM Director</td>
<td>Joseph Ambler Inn, North Wales</td>
</tr>
<tr>
<td>02-16-17</td>
<td>Thursday</td>
<td>Continuing Education Night</td>
<td>Maggio’s, Southampton</td>
</tr>
<tr>
<td>03-20-17</td>
<td>Monday</td>
<td>National Officer’s Night</td>
<td>Union League, Philadelphia</td>
</tr>
<tr>
<td>04-20-17</td>
<td>Thursday</td>
<td>Sustaining Members/Poster Contest</td>
<td>Joseph Ambler Inn, North Wales</td>
</tr>
<tr>
<td>05-18-17</td>
<td>Thursday</td>
<td>Honors &amp; Past Chairpersons Night</td>
<td>A Microbrew Location</td>
</tr>
</tbody>
</table>

This Month’s E-Newsletter is Sponsored by:

REX HEAT TREAT

MetLab Corporation
FREE SHIPPING & 10% OFF
starting at $2,995
starting at $6,995
starting at $5,995

VACUUM PROCESSING
Heat Treating • Brazing • Carburizing • Nitriding

Pressure Technology, Inc.
Aerospace • Automotive • Biomedical • Castings
Electronics • Oil & Gas • Power Generation
Powder Metallurgy • Bonding • Additive Mfg.

www.metlabcorp.com  1-800-828-6866
www.pressuretechnology.com

1-855-WE-HEAT-IT  solaratm.com
Bio - Dr. Gernant E. Maurer, FASM

Dr. Gernant Maurer has been actively involved with superalloy and specialty alloy technology throughout his career at both Special Metals Corporation where he was VP of Technology and Carpenter Technology where he was Director of R&D. He has contributed to and led many successful specialty alloy products, as well as process developments that have been implemented in aerospace markets. His professional activities include a career long involvement with ASM as well as participation in the organization and planning of the prestigious International Symposium on Superalloys which is held every four years in Seven Springs, PA.

Gern’s technical expertise has evolved from the development of numerous new product activities in areas that have applications in aerospace, energy, industrial, consumer, and medical markets. The research efforts that he has directed have taken full advantage of computational modeling to streamline alloy development and process improvements. In many instances he has implemented powder metallurgy solutions to solve challenging problems that face traditional cast-and-wrought processing of highly alloyed specialty materials.

Gern received his B.E.S. from The Johns Hopkins University and his Ph.D. from Rensselaer Polytechnic Institute with the distinction of being a member of Alpha Sigma Mu. He also completed an accelerated executive development program at Northeastern University. He became an ASM Fellow at the age of 39 and has been awarded ASM’s William Hunt Eisenman Awards for his contributions to industry and the practical application of materials science and engineering. An active member of ASM, Dr. Maurer has served and led numerous committees, councils and chapters. He has served twice on the ASM’s Board of Trustees and as President during ASM’s 100th Anniversary. Finally, he has had the pleasure of speaking at over 30 ASM Chapters across North America.

INSTITUTIONAL MEMBERS
DREXEL UNIVERSITY
TEMPLE UNIVERSITY
UNIVERSITY OF PENNSYLVANIA
ROWAN UNIVERSITY
VILLANOVA UNIVERSITY
WILLIAMSON COLLEGE OF THE TRADES

2017 SUSTAINING MEMBERS
A.L. SINGMASTER PERSONNEL SVC.
APOLLO DESIGNS
B & G MANUFACTURING COMPANY, INC.
CONSULTING ENGINEERS & SCIENTISTS, INC.
CORROSION TESTING LABORATORY
 CRAIG CLAUSER ENGINEERING CONSULTING, INC.
DANA CORPORATION
DELAWARE VALLEY UTILITY ADVISORS
DONOVAN HEAT TREATING COMPANY, INC.
ECRI-MSLB
EXELON POWER LABS
FORENSIC SCIENCES INCORPORATED
FREDERICKS COMPANY/TELEVAC DIVISION
HOEGANAES CORPORATION
IPSEN INC.
LABORATORY TESTING INC.
LECO CORP.
LTK ENGINEERING SERVICES
MAGNA-TECH P/M LABORATORIES
METLAB CORP.
PENN STAINLESS PRODUCTS
PRESSURE TECHNOLOGY, INC.
REX HEAT TREAT
ROBERT WOOLER COMPANY
SOLAR ATMOSPHERES INC.
SOLAR MANUFACTURING INC.
STRUCTURE PROBE INC.
STRUERS INC.
SUPERIOR TUBE COMPANY
TINIUS OLSEN TESTING MACHINE CO., INC.
WE AUTOMATION
William Jones, FASM, Receives ASM Distinguished Life Membership Award

William R. Jones, CEO of Solar Atmospheres, was presented with an ASM Distinguished Life Membership Award in October 2016 at ASM’s annual event held this year in Salt Lake City, Utah. ASM Distinguished Life Membership is conferred on those leaders who have devoted their time, knowledge and abilities to the advancement of the materials industries. Bill received this award with the following citation: “For innovations in the field of vacuum furnace technology and applying this technology to enhance metallurgical thermal processes around the world.”

Bill holds a degree in electrical technology from the Pennsylvania State University. His entire career has been associated with the development and application of electromechanical products, and since 1962 with vacuum heat treating furnaces. He holds numerous patents in this field and has long been associated with ASM, Metal Treating Institute, and related technical organizations.


Pictured left to right at the event:
Jamie Jones, VP of Operations at the Souderton Facility (grandson), William Jones, CEO of the Solar Atmospheres Family of Companies, and Roger Jones, Corporate President of Solar Atmospheres (son)
Directions to Joseph Ambler Inn:

From the PA Turnpike (East - West)
Exit at Fort Washington (Exit #339) and follow Rte. 309 North to Stump Road (traffic light — Acura Dealer). Turn Right onto Stump Road, turn Left onto Horsham Road (traffic light) and Right into our driveway.

From the Philadelphia Airport
Take I-95 South and follow signs for I-476 North to the PA Turnpike (I-276). Go EAST and exit at Fort Washington (Exit #339). Follow Rte. 309 North to Stump Road (traffic light — Acura Dealer). Turn Right onto Stump Road, turn Left onto Horsham Road (traffic light) and Right into our driveway.

From New York City, Newark Airport, North & Central New Jersey
Take the New Jersey Turnpike to the PA Turnpike and exit at Willow Grove (Exit #343). Follow Rte. 611 North and turn Left onto Rte. 463 West (Horsham Road). The Inn is 6.5 miles on the Right between Stump Road and Upper State Road. Watch for the signs.

From PA Turnpike/NE Extension (Rte 476) — Lansdale Exit(#31)
Turn Left from the exit ramp onto Sumneytown pike, follow about 5 miles & turn left onto US-202 North. Turn Right onto Horsham Road and Left into our driveway.

From Center City, Philadelphia, the Main Line and City Line Ave
Take the Schuykill Expressway West (I-76) to I-476 North to the PA Turnpike East. Go EAST and exit at Fort Washington (Exit #339). Follow Rte. 309 North to Stump Road (traffic light — Acura Dealer). Turn Right onto Stump Road, turn Left onto Horsham Road (traffic light) and Right into our driveway.

This Month’s E-Newsletter is Sponsored by: