GLOBAL Gas Turbine News

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ASME and IGTI Team Provide Significant Benefits

By: Michael Ireland, *Managing Director, International Gas Turbine Institute*

So, what's an edition of the the *Global Gas Turbine News* doing in the *Mechanical Engineering* magazine? Well, you can't beat a two-for-one offer, especially when the return on the initial investment is so fantastic. At least that's what my wife tells me when she drags me out shopping. The same holds true for ASME and the International Gas Turbine Institute (IGTI). When you become a member of ASME you garner a wealth of benefits for very reasonable dues. This issue of *Mechanical Engineering* is just one example of the advantages of ASME membership. And when you select IGTI as your primary area of technical interest upon joining ASME (or when renewing your membership), you receive additional benefits at no extra cost. This issue of the quarterly *Global Gas Turbine News (GGTN)* is just one of these. So we're pleased to bring both publications together to introduce ASME members to IGTI and let our IGTI participants learn more about ASME.

Most people know IGTI from ASME's Turbo Expo, which began in 1956 and has grown to become the premier technical congress and exposition for gas turbine professionals. We held our first European Conference in Zurich in 1966 and in 1982 began the current practice of alternating Turbo Expo each year between North America and Europe. For Berlin in June, our dedicated volunteers have worked literally thousands of hours to produce a record 925 peer-reviewed technical paper presentations covering the gamut of salient industry issues. We anticipate over 3000 people from over 50 countries will network with 150 exhibitors at our Expo. Additionally, we will offer a keynote session on gas turbines and the environment and will hold facility tours and special events for students and women in the gas turbine field.

In addition to this newsletter and Turbo Expo, IGTI provides access to current and historical technical information and networking through our own website. IGTI volunteers are primary contributors to ASME's Codes and Standards and publications, including *The Journal of Turbomachinery* and *The Journal of Engineering for Gas Turbines and Power.* We provide professional development through conferences, training courses, publications and an online job board. And we offer these products and services either free of charge or at significant discounts for ASME Members. We provide mentoring to early career and future engineers and since 1985 have presented nearly $1 million in scholarships.

In reality, we are the turbomachinery society operating under the ASME mechanical engineering umbrella. Over 8000 ASME members enjoy networking, access to technical information, career development and advancement, and basically the overall goodwill of participating within IGTI. We are proud to be teaming with ASME to meet its vision and mission. So, if you have any interest in turbomachinery at all, when you join ASME or renew your membership, select #22 (IGTI) as your **primary** technical interest. It's like joining two societies for the price of one. And I don't even need my wife to tell me that's a good deal. ✻

Register Today for Turbo Expo 2008 in Berlin

The Most Important Conference for Gas Turbine Professionals!

It's not too late to join more than 2500 gas turbine professionals from over 50 countries for Turbo Expo 2008 – a premier FIVE-day Technical Congress and a three-day, premium exhibition of gas turbine products and services supported by leading companies in the industry. This year Turbo Expo is being held June 9-13 at the Estrel Hotel & Convention Center in Berlin, Germany. Book your hotel and register for Turbo Expo 2008 today at **www.turboexpo.org**. For day-by-day activities see next page.

TURBO EXPO 2008 in Berlin

continued from cover

TURBO EXPO
Gas Turbine Technical Congress & Exposition
Presented by the International Gas Turbine Institute

Monday, June 9: Opening Session – The opening session will feature an awards program and keynote speakers, followed by a buffet lunch. This year's keynote speakers will share their perspectives on *Clean Gas Turbine Technologies for Land, Sea, and Air.*

Monday-Friday, June 9-13: Technical Congress – Expanded to 5 days this year to meet the needs of growing participation, this is where the leading authorities converge to present the state of the art. If it's being considered, studied, tested, developed, or implemented in the global gas turbine community, it's a topic in Berlin.

Tuesday-Thursday, June 10-12: Exposition – Where research meets application, this marketplace of top quality gas turbine products and services offers a unique opportunity to assess new products, proven methods and innovative ideas.

Tuesday, June 10: Women Working in the Gas Turbine Industry Dinner – (Sponsored by Pratt & Whitney) - Women who work in the gas turbine area are invited to join their colleagues for a complimentary networking event that will also feature a talk by Cheryl Lobo, Engineering Director, Compression Systems Module Center, Pratt & Whitney.

Tuesday & Wednesday, June 10 & 11: Expo Hall Receptions – Networking with leading global professionals is a principal benefit of Turbo Expo. Delegates mingle while enjoying complimentary refreshments and learning about the products and services of some of the industry's top companies.

Friday, June 13: Facility Tours – We are excited to announce a series of facility tours scheduled for attendees:

- ALSTOM - Power Service Turbine & Generator workshop
- AneCom AeroTest GmbH - Wildau facility
- Rolls-Royce Deutschland - Dahlewitz facility
- Siemens AG - Heavy Duty Gas Turbine Plant

Facility Tour information is tentative and subject to change.

Sponsors – IGTI salutes the companies that are supporting Turbo Expo 2008 through sponsorship. Please let them know you appreciate their support.

- **Double Platinum - GE**
- **Gold - Siemens**
- **Silver - Anysys and MTU**
- **Bronze - MECOS and Numeca International**
- **Additional - Calnetix, Flowmaster, MAN TURBO, Parker, Pratt & Whitney, Southwest Research Institute, Sulzer Metco**

Don't forget to register for our pre-conference short courses, to be held June 7-8. We look forward to seeing you in Berlin!

CALENDAR OF EVENTS

MAY 28-30, 2008
Hands-on Thermodynamics of Power and Aero Engines Short Course
Penn Stater Conference Center
University Park, PA
Come and share your questions and knowledge in this IGTI first-of-its-kind, interactive course!

JUNE 9-13, 2008
ASME Turbo Expo 2008
Estrel Berlin Hotel & Convention Center
Berlin, Germany
IGTI's flagship event comprises a major gas turbine conference and exhibition.

JULY 20-23, 2008
44th AIAA/ASME/SAE/ASEE Joint Propulsion Conference & Exhibit
Connecticut Convention Center
Hartford, CT USA
The objective for the 2008 conference is to identify and highlight the propulsion systems, components, and technologies required to enable the next generation of aerospace vehicles.

JULY 28-30, 2008
6th International Energy Conversion Engineering Conference (IECEC)
Marriott Cleveland Downtown at Key Center
Cleveland, Ohio USA
Hosted by AIAA, the IECEC provides a forum to present and discuss engineering aspects of energy conversion technology, advanced energy and power systems, devices for terrestrial energy systems and aerospace applications, and the policy, programs, and environmental impact associated with the development and utilization of this technology.

SEPTEMBER 8-11, 2008
ASME Gas Turbine Users Symposium 2008
Co-located with the 37th Turbomachinery Symposium
Houston, Texas, USA
With its focus on gas turbine drivers, the GTUS program will complement the excellent technical content pertaining to rotating equipment offered at the Turbomachinery Symposium.

OCTOBER 15-16, 2008
The 4th International Gas Turbine Conference
Brussels, Belgium
Organized by the European Turbine Network, this conference will bring together engineers, scientists and members of public institutions from Europe, Asia and the US to present the current state-of-art and market trends and direction in gas turbine technologies from a user's perspective.

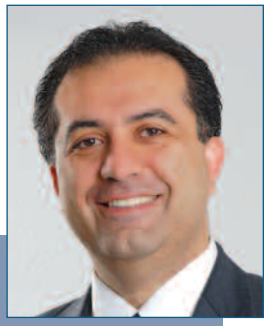
JUNE 8-12, 2009
ASME Turbo Expo 2009
Orlando World Marriott Resort and Convention Center
Orlando, Florida USA
IGTI's flagship event comprises a major gas turbine conference and exhibition. This 2009 event will be held at an all-inclusive resort with golf courses.

JUNE 14-18, 2010
ASME Turbo Expo 2010
Glasgow, Scotland
IGTI's flagship event comprises a major gas turbine conference and exhibition.

AUGUST 7-13, 2010
14th Int'l Heat Transfer Conference (IHTC)
Omni Shoreham Hotel
Washington D.C., USA
The 14th IHTC will provide a technical forum that includes keynote lectures, poster sessions, professional development courses, and a live exhibit of heat transfer equipment, services, and publications.

The Link Between Climate Change and Turbomachines

By: Dr. Reza S. Abhari



Dr. Reza S. Abhari is a professor in the Institute of Energy Technologies in the Department of Mechanical and Process Engineering of the Swiss Federal Institute of Technology (ETH) Zurich, Switzerland. He is the Vice-Chair of the Board of Directors of IGTI, a Fellow of ASME, and a member of the Swiss Academy of Engineering Sciences.

A lot has changed in the last 10 years. The global climate change due to green house emissions, as predicted by a number of scientists and engineers, is evident by receding glaciers and the melting of the polar cap. The recent UN sponsored conference in Bali created a major shift in the global policy. The scientific debate about the existence of human-influenced global warming, now being effectively over, has been replaced by a surge in a number of global political and financial mechanisms that are being created to form the underlying future structures for our societies in the 21st century. At the present time, all major countries of the world are debating on how and in what time frame to reduce their CO_2 emissions. The carbon emission foot-print is replacing the energy intensity as a parameter for policy development. These discussions have taken place during the same period that has witnessed a five fold increase in the price of oil with a significant and continuing future upward pressure. The change in the fuel costs will change the economic life cycle cost of power plants towards a much greater emphasis on component efficiency.

Europe has been the recognized leader in recognizing the impact of the link between the energy supply and the climate change. By limiting the amount of CO_2 emission from its power plants and major high-energy intensity industries (steel, cement, etc.) since 2005, the European Emission Trading Scheme (ETS) cap and trade mechanism has created a financial metric that has facilitated investments in the industrial sector. The Kyoto Protocol and its associated Carbon Emission Reduction (CER) mechanisms have also created a major investment opportunity in countries of the developing world such as China, India and Brazil. These mechanisms have facilitated economic growth in the developing world while minimizing the growth in the green house gas (GHG) emissions.

In the United States, the absence of any federal regulatory framework has resulted in businesses, aware of their corporate responsibility, using voluntary reduction tools to offset their emission. According to Dr. Sascha Lafeld, the Managing Director of FACTOR3C, a major leader in carbon asset development and trading of CERs, "The success of private sector initiatives in the US voluntary carbon market highlights the necessity to push low-carbon strategies and high efficiency technologies forward as we await a federal compliance regime within the next few years. Companies participating in the voluntary market demonstrate considerable foresight in gathering valuable experience today, before lessons will come at greater cost under a government regulated market."

The impeding global regulatory framework for GHG reduction will have a great impact on all sectors of industry, with a profound impact on two sectors; power and transportation. The public electricity and heat generation sector, at 40%, currently represents the largest annual global CO_2 emissions of about 10 Gtons. This sector is primarily powered by steam and gas turbines, with the heat being supplied through nuclear or combustion of coal and gas. Within the transportation sector, aviation will also be particularly affected, as there are currently no feasible large-scale possibilities to replace carbon-based aircraft fuel. The 95,000 gas turbine engines that currently power the world's commercial aircrafts represent about 3% of the emitted CO_2, not accounting for the impact of Nitrogen Oxides as well as the condensation trails. In order to reduce the CO_2 emission of aircraft engines, we would need to improve the efficiency of turbomachinery components. For stationary applications, in addition to the positive impact of turbomachinery efficiencies, the possibility of sequestration and storage of the CO_2 is also being actively explored.

This current need for new products has resulted in a significant expansion of new business opportunities for OEMs and their partner companies. The upward trends in research and new product developments, concurrently in the power generation, oil and gas and the aviation business sectors, has been apparent for some time. As the past Chair of the Turbomachinery Committee of IGTI, I recall the time when the community was focusing on "–ilities" (affordability, serviceability, manufacturability, etc.). That was the time of $20/barrel oil with no real concern for global warming. In less than ten years, the incoming change is apparent. Today due to the shift in the economics of this sector, the impact of improved turbomachinery component efficiency will have a much greater influence on the overall cost of ownership and will create competitive advantages for the successful companies. This realization has spawned a significant increase in the research and development output of the university and corporate centers. The TURBO EXPO conference organized by IGTI, representing the largest gathering of research and development forum in the areas of turbomachinery and gas turbines, has grown by about 30% in the last four years, with over 900 peer-reviewed publications expected in June 2008 in Berlin.

For decades to come, the underlying economic, regulatory and societal shifts relative to global energy and climate change mitigation will continue to challenge mechanical engineers to develop new high-efficiency turbomachinery systems. This challenge provides our technical community with many exciting and career-rewarding opportunities in the development of sustainable energy conversion systems that will help secure a clean environment for succeeding generations. ✻

IGTI Scholarships and Awards are Available... Again

By: Knox Millsaps

The International Gas Turbine Institute (IGTI) is once again providing scholarships and young engineer awards to undergraduate and graduate students studying gas turbines. Travel awards are also available to students and young engineers in the gas turbine industry for the purpose of attending Turbo Expo to present their research results.

The IGTI Board of Directors (BoD) recently approved funding scholarship and other awards. There are several scholarship opportunities for both undergraduate and graduate students and these are available for both U.S. and international students/engineers.

The IGTI Scholarship Program was originally started in 1985. The goal of this program was to make students aware of the tremendous opportunities in the gas turbine field and encourage them to pursue careers in the research and design of gas turbines. This program was terminated in 2001 due to insufficient funds. From 1985 until 2001 IGTI awarded a total of $923,500 to 925 students. Many of these students currently work in the gas turbine and turbomachinery industries.

There are currently three different types of awards being funded by IGTI:

1. ***ASME-IGTI Scholarship.*** This $4,000 scholarship is available to any ASME student members from any country and can be for study at either the undergraduate or graduate level. Students can apply online at www.asme.org under "ASME Scholarships".

2. ***IGTI Scholarship Program***. There will be multiple $2,000 awards, for students at the undergraduate or graduate level. Each accredited University with a gas turbine research or teaching component may nominate one student for the award. Nomination letters from a faculty member, such as the ASME Student Section Advisor or Department Chairman, should be sent to:

   IGTI - Attention: Scholarship Committee
   6525 The Corners Parkway, Ste 115 • Norcross, Georgia 30092 USA
   igti@asme.org

   Nominations for the 2008 cycle are due by December 31, 2008.

3. ***Young Engineers Travel Award***. These are awards for either students or young engineers employed in industry or government to attend the International Gas Turbine Conference and Turbo Expo to present a paper on which they are an author. To apply, the engineer should write an application letter requesting travel funds and send it to the IGTI address above. Typical awards are for $2,000.

IGTI Treasurer, Dr. Lee Langston, who was involved with the original scholarship program and was instrumental in reviving this program stated, "This was an extremely popular program for more than a decade, and I think it will be again. It makes our young engineers aware of the exciting opportunities that await them in this dynamic field."

Michael Ireland, the managing director of IGTI, worked closely with his counterparts in the ASME scholarships office to start this program. Finally, this program was supported by the IGTI Board of Directors, especially the Board Chairman, Dr. Kenneth Hall, who said, "I am thrilled that IGTI is able again to find the resources to fund this program. It means a lot to students to win an award, particularly one associated with ASME and IGTI. We hope that IGTI will continue to be able to fund this program in future years, and even expand the number of the awards."

IGTI will be seeking additional funding for these awards from corporate sponsors. This is a great way to make young engineering students aware of the wide range of exciting career opportunities in the gas turbine industry. If your company is interested in contributing to this worthy cause please contact IGTI at igti@asme.org to make a tax deductible contribution. Become a sponsor today! ✻

IGTI Participates in ISROMAC-12

The Twelfth International Symposium on Transport Phenomena and Dynamics of Rotating Machinery (ISROMAC-12) was held February 17–22, 2008, in the historic Monana Surfrider in Honolulu, Hawaii. ISROMAC is held biannually in Hawaii and has grown in statue over the years and is now one of the world's premier events in the scientific and engineering aspects of rotating machinery. This year's symposium, ISROMAC-12, had over 160 papers in a wide range of technical areas, including turbomachinery fluid mechanics, heat transfer, rotordynamics, and transport phenomena.

The Conference Chairman was Prof. Gérard Bois, from LML ENSAM, Lille, France, who created an excellent technical program. Dr. Bois said of the symposium, "One of the reasons that people so enjoy this event, besides the obvious reason of the excellent locale, is the small size that allows for more discussion and interaction among the participants."

ISROMAC is organized by the Pacific Center of Thermal-Fluids Engineering (PCTFE). IGTI was invited to this year's event. Prof. Jong H. Kim, from KAIST in Korea and EPRI in the USA heads a team that will coordinate ISROMAC with IGTI and was excited about a possible future co-sponsorship by ASME and IGTI. Dr. Kim said, "The support of IGTI for ISROMAC is greatly appreciated. Since many of the ISROMAC authors and attendees are IGTI members, I think it is natural that there will be a close collaboration."

The conference had a keynote address everyday, with a luminary providing in-depth presentation of their field of expertise. Prof. Chris Brennen, from Cal Tech, presented a lecture on, "Cloud Cavitation with Particular Attention to Pumps," Prof. Luis San Andres, from Texas A&M, presented his work on, "Issues on Stability, Forced Nonlinear Response and Control in Gas Bearing Supported Rotors for Oil-Free Microturbomachinery." Dr. Klaus Sieverding, from the von Karman Institute, presented a broad overview of the European research activities in gas turbines as well as some specific results from his research in a talk titled, "European Aero-Thermal Turbine Research." The last topic was presented by Dr. Yves Lecoffre, consultant YLEC on "Cavitation Damage - Recent Developments, Methods and Facilities."

The next symposium, ISROMAC-13, will be held in Hawaii in February 2010. Start making plans to attend.

For more information on the conference and to obtain the proceedings see www.isromac.org or for ISROMAC-11 proceedings contact www.proceedings.com (ISBN: 9781604236774). ✻

Pipeline Compression Using Gas Turbines or Electric Motors - CO_2 Footprint

By: Dr. Klaus Brun, *Southwest Research Institute* and Dr. Rainer Kurz, *Solar Turbines Incorporated*

Local legislation and regulation on CO_2 emissions are starting to affect the decision making process for building new natural gas compression stations in North America. To minimize CO_2 emissions some pipeline companies have decided to install electric motor drivers rather than the more conventional gas turbines to power their centrifugal compressors. Unfortunately, these decisions completely neglect some very fundamental understanding of the CO_2 production process and the concept of CO_2 footprint.

To bring natural gas to power plants and other industrial or private users, it is transported from the gas well through pipelines. Along the pipeline, the gas is pumped through the pipe using gas compressors. This is where an interesting argument starts: These compressors can be driven either by drivers burning natural gas as a fuel (such as gas engines and gas turbines), or they can be driven by electric motors of various configurations.

If one just looks at the compressor station the argument is clear: The electric motor does not generate any carbon dioxide, while the drivers that use natural gas as a fuel do. However, the argument becomes less clear once one considers that the electricity to drive the motor has to be generated somewhere, and has to be transported to the compression site using transmission lines.

In the US over 50% of the electricity (about 300 GW) is produced by coal fired power plants. Many of these plants were built in the 1950s and 1960s and have very low efficiencies. The average efficiency of coal power plants in the US is only about 34%. Furthermore, based on growth forecasts and energy availability, the amount of electricity produced from coal in the US is expected to grow to 450GW by 2030.

A coal fired power plant produces between 2000 to 3000 lbs of CO_2 for each megawatt-hour it generates (depending on the plant efficiency and coal type). Thus, it is relatively easy to determine the CO_2 footprint required for an electric motor driver in a compression station. Including average electric transmission and motor losses, for each driver hp available for compression an electric motor drive "produces" about 2.0-2.5 lbs of CO_2 per hour. For a typical pipeline compression station of about 10,000 hp, that results in more than 400,000 lbs of CO_2 produced per day.

On the other hand, a gas turbine driver in a pipeline compression station utilizes natural gas as a fuel (from the same pipeline). Natural gas is the fossil fuel with the lowest carbon production footprint. This is due to natural gas' high hydrogen to carbon ratio. (Methane, its main ingredient, has only four carbon atoms for each hydrogen atom.) A simple cycle gas turbine (operating at a nominal 35% efficiency) produces about 1 lb of CO_2 per hp per hour. For the same average 10,000 hp pipeline compression station operating with gas turbines as drivers, less than 200,000 lbs of CO_2 is produced, about half of that netted by electric motor drivers.

As an aside, modern, natural gas fired combined cycle gas turbine power plants generate one megawatt-hour of electricity producing less than 600lbs of CO_2, due to their superior thermal efficiency.

Thus, any efforts to utilize electric motors in compression stations rather than gas turbines actually results in a much greater CO_2 net production when most of the electricity comes from coal fired power plants (as is the case in North America, China, and many other developed countries). Clearly, it is important to understand that to determine the correct carbon footprint, the system boundaries have to be drawn much wider than just the compression station itself. ✻

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MISSION STATEMENT

The International Gas Turbine Institute of The American Society of Mechanical Engineers is dedicated to supporting the international exchange and development of information to improve the design, application, manufacture, operation and maintenance, and environmental impact of all types of gas turbines, turbomachinery and related equipment.

PROFESSIONAL DEVELOPMENT

Hands-on Thermodynamics of Power and Aero Engines

New State of the Art Short Course for the Gas Turbine Industry!

May 28-30, 2008 • Penn Stater Conference Center • University Park, PA

Come and share your questions and knowledge in this IGTI first-of-its-kind, interactive course!! This course will allow engineers throughout the world to acquire ready familiarity as to how the gas turbine engine works. The Instructor will illustrate the challenging requirements on materials and flow that demand careful inspection and maintenance.

This short course will be useful to those who, previous to specialization, would like to acquire a broad view of the principles behind gas turbine engines. A solid knowledge base of gas turbine theory and technology will enable participants to perform their job more effectively.

Discover How To:

- ➢ Recognize the first and second laws as related to gas turbine cycles
- ➢ Identify cycles and applications for power generation and flight.
- ➢ Discern the basic configuration of axial machines.
- ➢ Identify how thermofluid principles are employed to manage combustion, flow and heat transfer issues.
- ➢ Translate the equations/models/concepts learned into MathCad models.
- ➢ Apply existing models for property calculation.
- ➢ Use models to project thrust and power generation efficiencies.
- ➢ Recognize the axial, centrifugal and power/gas generator configuration of optically accessible demo.

Run an SR-30 Turbine To:

- ➢ Verify how compressor, turbine, combustion chamber and fuel/lubrication systems operate together in a small turbojet.
- ➢ Record key data for understanding operational principles.

Courses will be held from 8 a.m. – 5 p.m. each day and will follow this schedule:

Day 1 - The theory and principles of cycles for flight and power
Day 2 - Translating models into numerical results
Day 3 - Hands-on instruction and operation of the SR-30 thrust demonstrator

SHORT COURSE INSTRUCTOR

Dr. Horacio Perez-Blanco, Professor of Mechanical Engineering, has taught Gas Turbines and Turbomachinery at Penn State for a number of years. He has undertaken projects dealing with compressor cooling, cogeneration system control and dynamic modeling of gas turbines. His interactive teaching style helps students focus on what is fundamental to the technology, lending a broad understanding not devoid, when necessary, of suitable depth. Dr. Horacio Perez-Blanco is also an ASME Fellow.

WHO SHOULD ATTEND

This short course will be beneficial to those seeking to gain a broad understanding of gas turbine theory and applications.

SHORT COURSE MATERIALS

Participants will receive a set of written materials created by the Instructor, both in MathCad or pdf. The course notes are an excellent reflection of conventional methods to assess and describe performance, and will enhance the participant understanding of the literature.

REGISTRATION

Space is Limited! Register today and save!

Individual ASME Member fee will be $1,495 US and the individual Non Member fee will be $1,625 US (Price includes a Free Membership to ASME for 1st time members) if registered by May 14, 2008. After May 14, 2008, ASME Member fee will be $1,695 and the Non-Member fee will be $1,825.

For more detailed information or to register visit:
http://igti.asme.org/Education/Training/Short_Courses_2.cfm

HOTEL

Penn Stater Hotel Information: Space is limited! In order to guarantee a room, please make sure that you **book your hotel room by April 28, 2008**. The room rates are: $109.00 Single Occupancy or $119 Double Occupancy. For reservations, please call: 1-814-863-5050 or 1-800-233-7505. **Please Reference "Block" Code: HANE08A.** ✻

Turbo Expo 2008

Pre-Conference Short Courses

Saturday & Sunday, June 7-8: Three comprehensive short courses will be held at the Estrel Convention Center on the weekend prior to Turbo Expo.

- *Gas Turbine Aerothermodynamics and Performance Modeling* is an interactive two-day course that includes tutorial sessions in which attendees can work out instructor-facilitated examples of gas turbine aerothermodynamics and performance modeling. This course will be held from 8 a.m.–5 p.m. on both Saturday & Sunday.
- *Gas Turbine Repair & Metallurgy* is for Operations & Maintenance personnel who require an understanding of basic gas turbine metallurgy and repair technology to conduct business with repair shops and make repair vs. replacement parts decisions. This course will be held from 8 a.m.–5 p.m. on Sunday only.
- *Basic Gas Turbine Engine Technology Review and Exam (Newly Revised Third Edition)* is a one-day course that will be divided into two, 2-hour review components and a 4-hour examination. This course will be held from 8 a.m.–5 p.m. on Sunday only.

For more details on these courses, and to register, visit **http://igti.asme.org/Education/Training/Short_Courses_2.cfm** or contact IGTI's Professional Development Manager, Shirley Barton, at bartons@asme.org. ✻

ASME Turbo Expo 2009 Set for Orlando Florida

Connect and reconnect with your gas turbine colleagues from around the world at TURBO EXPO, ASME's premier gas turbine technical congress and exposition, from June 8-12, 2009, in Orlando, Florida, at the World Center Marriott Resort & Convention Center.

Turbo Expo 2009 Highlights Include:

- A FIVE-day Technical Congress, organized to meet the needs of growing participation
- A three-day, premium exposition of gas turbine products and services supported by leading companies in the industry
- A dynamic keynote session featuring prominent industry leaders
- A value-packed registration package that includes proceedings, access to all activities and abundant networking opportunities, including receptions and daily lunches
- In-depth pre-conference workshops providing fundamental study on selected subjects

Leadership

Leading the organization of Turbo Expo 2009 are Executive Conference Chair Barry Nicholls, Conference Chair Dr. Ronald Bunker and Technical Program Chair Dr. Howard Hodson.

Mr. Nicholls is Vice President of Siemens Power Systems Sales, for Siemens Power Generation, Inc., in Orlando, FL. He is responsible for all products and services of the Power Generation and Power Transmission and Distribution business units in the United States and Canada.

Dr. Bunker is Principal Engineer, Energy and Propulsion Technologies, for GE Global Research in Niskayuna, NY. He is an internationally recognized research engineer and has been performing and directing research related to all aspects of turbine hot gas path heat transfer and cooling for the past 22 years. He is an ASME Fellow and a former Chair and Vice Chair of IGTI's Heat Transfer Technical Committee.

Dr. Hodson is a professor of aerothermal technology at Cambridge University's Whittle Laboratory in the United Kingdom. He is a former Chair and Vice Chair of IGTI's Turbomachinery Technical Committee.

Technical Congress

The Turbo Expo 2009 publication schedule is now available:

Abstract Submission - September 8, 2008
Author Notification of Abstract Acceptance - September 29, 2008
Draft Paper Due Date - November 10, 2008
Paper Reviews Complete (Target Date) - December 22, 2008
Author Notification of Paper Acceptance - January 12, 2009
Submission of Final Paper - February 23, 2009
Final Paper Approval by Review Chair - March 23, 2009

Exposition

Initial 2009 space assignments are based on the IGTI Priority Points System. Companies with a priority number should send a representative to their Priority Points Meeting at ASME Turbo Expo 2008 in Berlin, Germany. Companies without an assigned number should contact IGTI. Space for Turbo Expo 2009 will be assigned based on availability after June 16, 2008.

A variety of sponsorships are also available. Sponsors receive recognition:

- **On the official Show Web site**
- **In the Advance and Final Programs**
- **On signage posted during the Show**
- **In announcements made during the Show**

For more details or to sign up, contact IGTI at +1-404-847-0072 x1646 or via e-mail at igtiexpo@asme.org. Sponsorships will be assigned on a first-come, first-served basis. ✻

IGTI Names 2009 Executive Conference Chair

Barry Nicholls, Vice President of Siemens Power Systems Sales, Siemens Power Generation, Inc., has accepted the position of Executive Conference Chair for ASME Turbo Expo 2009. In this role, he will provide strategic input and support for the event's activities and focus.

Nicholls is responsible for all products and services of the Power Generation and Power Transmission and Distribution business units in the United States and Canada. He was formerly responsible for managing strategic marketing efforts for the Siemens Power Generation Group worldwide.

He joined the Power Generation Business Unit of Westinghouse in 1990 from its nuclear business unit, where he began his career in 1975. Nicholls earned a BS in Industrial Engineering and Operations Research from Virginia Tech and an MBA from the University of Pittsburgh. ✻

About our Turbo Expo 2009 Venue:

Photo courtesy of Orlando World Center Marriott Resort

The Orlando World Center Marriott is an all-inclusive resort offering an impressive array of services and facilities, including a championship golf course, award-winning cuisine, and spa services. In addition, the resort is ideal for families – located only minutes away from Orlando attractions such as Walt Disney World®, SeaWorld®, and Universal Orlando®.

Gas Turbine Users Symposium Set for September in Houston

GTUS GAS TURBINE USERS SYMPOSIUM
Presented by the International Gas Turbine Institute

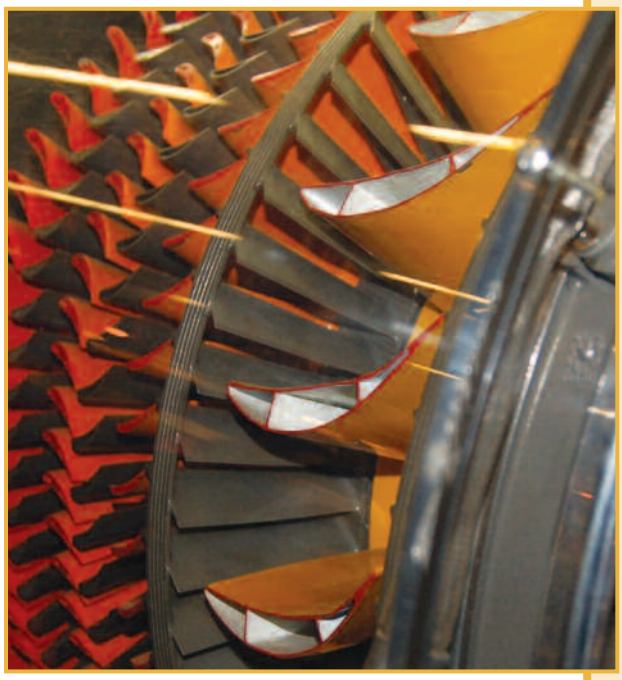
The **Gas Turbine Users Symposium (GTUS)** will be co-located with the Texas A&M Turbomachinery Symposium, **September 8-11, 2008**, at the George R. Brown Convention Center in Houston. Organized by users, for users, GTUS is for all turbomachinery users. For potential registrants familiar with Turbomachinery Symposium technical content on rotating equipment, GTUS offers a complimentary hands-on focus on gas turbine drivers. Mark your calendar now to attend GTUS 2008!

The Gas Turbine Users Symposium—a comprehensive cluster of panel presentations, tutorials and group discussions focused on gas turbine operating challenges—is designed to offer educational and networking opportunities for those who operate, maintain, and make purchasing decisions about gas turbines.

On-the-job experts will offer current and practical ideas to help gas turbine operators and managers meet their day-to-day challenges.

In addition to admission to GTUS sessions, GTUS registration includes free admission to the Turbomachinery Symposium Exhibit Hall, complimentary lunches and evening meals, GTUS conference proceedings, and a networking dinner. GTUS and Turbomachinery Symposium registrants also have the option to upgrade their registration to include the co-located event.

For more information about GTUS 2008, visit: *http://www.asmeconferences.org/gtus08/*.



Call for Sessions

ASME Gas Turbine Users Symposium 2008

Chair: Patrick J. Campbell, GE Oil & Gas

Vice Chair: David Mucz, Alliance Pipeline

September 8-11, 2008

Houston, Texas USA

Co-located with the Texas A&M 37th Turbomachinery Symposium

The ASME International Gas Turbine Institute is now accepting proposals for sessions to be offered during the 5th annual Gas Turbine Users Symposium (GTUS). The conference program will consist of multiple concurrent panel, case study, tutorial and discussion sessions. Proposed sessions should address the specific needs and interests of individuals who operate, troubleshoot and maintain combustion turbines, and for those who provide products and services to users.

Tracks in which sessions are being developed include:

- Gas Turbine Design
- Gas Turbine Operation & Maintenance
- Gas Turbine Advances

Please submit session proposals by email to igtiprogram@asme.org in the following format:

Subject of Email: GTUS 2008 Session Proposal

Include the following in the body of the email:

Primary Contact/Session Organizer, *include:*

- Name
- Job Title
- Company
- Complete Mailing Address
- Phone Number
- Email Address

Session Topic: *Enter Tentative Session Title*

Session Type: *Enter ONE session type, i.e. panel, tutorial, case study, discussion*

Session Description, *include:*

- How this session will address the needs and interests of gas turbine users.
- What type of companies will be asked to provide presenters for the session.
- A list of several potential presentation topics or discussion points.