

ADVANCED ENERGY SYSTEMS DIVISION

EDITOR: Michael Ellis

FALL 2008

CHAIR'S MESSAGE *Dr. B. G. Shiva Prasad*



This is an important period in the history of the nation and the world when energy is not only defining the lives of individuals but also the society as a whole. Engineers and researchers have a unique opportunity to serve the society by identifying and developing practical, efficient and economical energy sources, developing efficient means of transportation, guide lines for efficient consumption and safe economical techniques for storage. The challenge is equal in nature to the challenge faced half a century ago to reach the moon but with a much greater need and a wider scope. Unlike other challenges, energy demand which has precipitated the current crisis will continue unabated as the thirst for energy will not diminish, just as the societal needs for continuous improvement of themselves and their environment will not.

Engineers now know that their profession has no boundary and engineers and researchers irrespective of their fields can transplant their knowledge and talent and use their synergy to solve the present day energy crisis and the future needs.

This throws an important need and challenge for the Advanced Energy systems Division of ASME to provide a forum for exchange and cross transplantation of ideas not only from universities and research labs into industries and vice versa but also from one field to the other, generation of new ideas and dissemination of the same, encouraging engineers to contribute their talents and recognizing the talents of those who contribute to this venture. At this juncture, it is an honor for me to serve the division and its members as its chair. I would first like to thank Dr. Abel Hernandez-Guerrero, the past chair of our division for providing effective leadership and promoting the division activities during

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the period of transition and change in the divisional structure at ASME. It is also time to acknowledge the hard work done by the past chairs and active members of the committees and the division, some of whom are still continuing to take active interest in encouraging & participating in division activities.

The division membership is increasing and the members of the executive and technical committees are working hard along with members of AESD and other divisions who are generously contributing their time and expertise to help enhance the activities of the division. I would like to thank all those who have served as track/session

Continued on Page 2.

AESD DIVISION AWARDS AND KEYNOTE LECTURE

The basic objective of any technical division of a professional organization like ASME is to promote the science and technology of interest to the division. Such venture and objective can excel only by the energy, expertise and effort of its members and non members alike who contribute their time to the division's activities. It is important for the division to recognize significant contributions and acknowledge the contributors in some way. The executive committee has created a separate portfolio for Honors & Awards

and a member is assigned to accomplish that objective.

AES division has instituted several awards at various levels. At the Society level, AES Division in association with the Solar Energy division has instituted the Frank Kreith Energy Award for significant contributions to a secure energy future with particular emphasis on innovations in conservation and/or renewable energy. AES division would like to thank the family of Prof. Frank Kreith again for making a generous donation for instituting this award at a

time when the topic of "Energy" needed some attention. At this moment when Energy issues are dominating the national & world scene, and the world is dependent on finding new economical & safe ways of tapping Energy which is abundant in nature and the universe, there is bound to be more engineers contributing to this venture and hence the AES Division & ASME would welcome such generous proposals for instituting more awards.

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organizers, chairs, reviewers, etc., in various technical sessions and panels organized in conferences in the past. I would particularly like to thank Dr. Sriram Somasundaram, a past chair of our division, who took the responsibility of serving as General Chair for the International Conference on Energy Sustainability held in 2007 as well as 2008 and contributed to its success. With the encouragement provided by Dr. Abel Hernandez-Guerrero and the support from the executive committee members, AESD has started a new tradition of organizing a reception open to current and prospective members and everyone who is interested in serving our division and contributing to the basic needs of the society for advancements in Energy related Science and Technology. In addition to conferences, the division also provides a venue for engineers and researchers to publish their work in archival

journals. The division not only encourages hard work and contribution of engineers, but also acknowledges their contribution to the science and technology of Energy Systems in the form of awards for best student papers and/or best papers (including the Edwert Obert Award) presented at the International Mechanical Engineering Congress and the International Energy Sustainability Conference, Frank Kreith Energy award in association with the Solar Energy Division, and honoring their contribution by inviting them to give keynote and plenary talks at the Conferences.

It is with great pleasure I invite our new members of the Executive Committee, Dr. Mansour Zenouzi & Dr. Antonio Bula, both of whom have been serving our division and contributed to innumerable activities in their capacity as past chairs of the Systems Analysis & Fuel Cells, and Direct Thermal Power & Energy Conversion Systems

Technical Committees. I have no doubt that their addition to our team will give an additional boost to our division's activities.

I would like to encourage and invite engineers and researchers irrespective of their field of specialization to join our division and participate in its activities. All fields of specialization have scope and application for developing systems for energy production and application for the growing societal needs. I also welcome proposals from current and prospective members of the division to start new technical committees or new activities in their field of interest and expertise. Finally it is my pleasure to thank all the members of our executive and technical committees who always are generous in contributing their time, expertise and ideas for carrying out the division's activities.

AESD DIVISION AWARDS AND KEYNOTE LECTURE *Continued From Page 1*

Dr. Ari Rabl, a scientist and educator who has not only worked in the area of energy conservation and environmental impact but made significant contributions for advancing the art of tapping solar energy, has won the 2008 Frank Kreith Energy Award. The AES division in collaboration with SED has started organizing Frank Kreith Energy Award Lecture at the ASME Congress. At the 2008 Congress, the lectures will be delivered by Dr. Yogi Goswami & Dr. Ari Rabl, who are respectively the winners of the 2007 & 2008 awards.

Another society level award instituted by AESD is the Edward Obert Award for an outstanding paper on thermodynamics presented at the Advanced Energy Systems Division's International Mechanical Engineering Congress Symposium on Energy Systems Analysis in the preceding 2 years. The 2007 award was won by Andrea Lazaretto & Andrea Toffolo for their paper on "Locating Causes of Malfunctions in Energy Systems with Evolutionary Algorithms: A Global and a Local Approach".

At the division level, the Systems Analysis & Fuel Cells and the Heat Pump Technical Committees have instituted Best Paper and Best Student Paper Awards, the latter for a paper at least co-authored and presented by a student at the symposia sponsored by the committees at the International

Mechanical Engineering Congress. The 2007 Heat Pump Technical Committee Best Paper Award was won by Timothy C. Ernst and Srinivas Garimella for their paper on "Wearable Engine-Driven Vapor-Compression Cooling System for Elevated Ambients". The 2007 Systems Analysis & Fuel Cells Technical Committee Best Paper Award was won by Francesco Casella, Piero Colonna, and Hans van Putten for their paper on "Dynamic Simulation of a Biomass-Fired Steam Power Plant: A Comparison Between Causal and A-Causal Modular Modelling" and their Best Student Paper Award was won by Cullen Buie (student presenter), Shawn Litster and Juan G. Santiago for their paper on "Physics of pumping Methanol/Water Solutions for Fuel Cell Applications".

The division also gives Best Paper Awards for the papers presented at the ASME International Conference on Energy Sustainability. The following papers presented at the 1st International Conference on Energy Sustainability 2007 held at Long Beach, CA, received the Best Paper Awards:

"Solar Thermochemical Generation of Hydrogen: Development of a Receiver Reactor for the Decomposition of Sulfuric Acid", by Adam P. Noglik, Martin Roeb, Thomas Rzepczyk, Christian Sattler & Robert Pitz-Paál;

"A Material and Energy Flow Analysis of South Carolina: Past, Present, and Future", by James Russell & Wally Peters;

"Thermal Transport from a Rotating Disk during Partially Confined Liquid Jet Impingement", by Muhammad M. Rahman & Jorge C. Lallave;

"Improving the Efficiency of the Advanced Injection Low Pilot Ignited Natural Gas Engine using Organic Rankine Cycles", by Kalyan Kumar Srinivasan, Pedro J. Mago, Gregory J. Zdaniuk, Louay M. Chamra & K. Clark Midkiff.

The awards for the papers presented at the 2nd International Conference on Energy Sustainability held at Jacksonville, Florida in Aug. 2008 will be given at the 3rd International Conference on Energy Sustainability to be held at San Francisco in July 19-23, 2009.

It has been a tradition of the AES Division to honor the contributions of engineers/researchers who serve the divisions' objectives by inviting them to give a keynote talk at the division luncheon at the IMECE. This year the same tradition will be continued at the AESD Reception where the Keynote talk will be delivered by Prof. Gian Paolo Beretta of the University of Bressica, Italy. Dr. Gian Paolo Beretta

who obtained his Doctor of science degree from MIT is an accomplished researcher who has worked and published extensively in the area of thermal fluid sciences and thermodynamics in addition to quantum mechanics. He has also written an authoritative reference text book on the Foundations of Thermodynamics and its Engineering Applications. Further, he has taken a keen interest and worked in the area of energy consumption and production and will be delivering his keynote talk at the AESD Reception on

“World Energy Consumption: An Outlook for the Rest of the Century and the Role of Thermodynamic Research”.

At the 2nd International Conference on Energy Sustainability held at Jacksonville, Florida in Aug. 2008, the key note Lecture on “The Carbon Journey – The Nation’s Need to Reduce Emissions and Increase Energy Security” was delivered by J. Michael Davis, Associate Laboratory Director of the Pacific Northwest National Laboratory. He is well-known nationally

as a spokesperson for hydrogen, renewable energy and energy efficiency policy and technology issues. He is an invited member of the National Academy of Sciences’ Renewable Energy Panel. Michael Davis has served as the U.S. Department of Energy’s Assistant Secretary for Conservation and Renewable Energy and has received the Secretary’s Gold Medal Award.

AESD CONFERENCE ACTIVITIES

Advanced Energy Systems Division sponsors and organizes at least one complete track at the ASME International Mechanical Engineering Congress & Exposition. For the 2008 Congress at Boston, an excellent track on Energy Systems: Analysis, Thermodynamics & Sustainability consisting of symposia on 14 topics spanning various aspects of fundamental and applied sciences as well as the technology related to Energy Systems is organized. Solar Energy Division has also contributed to one symposium on the topic of Alternative Energy & Renewable Energy systems. The track consists mainly of technical sessions and also includes one poster session and has approximately 90 – 100 presentations scheduled. The symposia topics are listed on a separate page at the end. In addition, the division continues its tradition of associating with the Fluids Engineering division in organizing a panel session on the topic of CFD and has organized a panel on ‘CFD/EFD (Experimental Fluid Dynamics) Choice – A dilemma for Industries”.

Consistent with the present day needs on energy related issues, since 2007 AES division in collaboration with the Solar Energy Division has started organizing an International Conference on Energy Sustainability. The 2nd International Conference on Energy Sustainability held in Aug. 2008 at Jacksonville, Florida was collocated with the ASME Summer Conferences of the Heat Transfer, Fluids Engineering Divisions and the Nano Institute. Topics ranged from fundamental sciences like thermodynamics, fluid & thermal sciences to emerging technologies like CHP & CCHP, alternative energy systems, energy for sustainability, policy Issues, etc. There was a significant increase in participation and attendance this year with a total of about 190 papers presented at the conference out of which about 125 papers came under the tracks organized by the Advanced Energy Systems Division. The third International conference on energy sustainability collocated with the ASME Summer Heat Transfer Division Conference and the InterPACK will be held at San Francisco in July 19 – 23, 2009. The detailed topics are listed in the call for papers given in a separate page.

AES division with the approval of the executive committee sponsors several International Conferences. One such was the 6th International Fuel Cell Science & Engineering Conference held in June 2008 at Denver, Colorado. This conference had a large participation by members of the Systems Analysis & Fuel Cells Committee. Many division members also participate in other International Conferences held outside USA. The division has approved sponsoring the ICEPAG 2009 to be held at Newport Beach, California during Feb. 10 – 12, the 7th International Fuel Cell Science & Engineering Conference held June 8-10, 2008 at Newport Beach, CA (see p. 6), and the European Fuel Cell Conference scheduled for December 15-18, 2009 in Rome, Italy.

TECHNICAL COMMITTEE REPORTS *TC Chairs*

Direct Thermal Power Conversion and Thermal Management

The Direct Thermal Power Conversion and Thermal Management Technical Committee promotes research and development in thermal management of energy both at the device and at the factory level. As energy becomes the main constraint for autonomy, production, and economic operation of machines, industries, and

facilities, this technical committee provides an opportunity to exchange and foster new ideas, technologies, and methodologies that improve energy efficiency and thermal systems economic operation.

The committee participates in IMECE and other special conferences related to advanced energy systems. At the 2007 IMECE in Seattle the committee organized a session on renewable energy from biomass that presented recent developments in

biomass integration as an energy source for vehicles and rural facilities. At the 2008 IMECE in Boston, a joint session with Energy Systems Miniaturization technical committee has been organized to present micro and nano devices integration to energy systems management and operation.

During 2008 IMECE the DTPC and Thermal Management technical committee will hold a meeting on

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Direct Thermal Power Conversion...continued

Monday, November 3, 2008, from 7:30 to 8:30 pm. We will discuss new ideas and topics for future events, including Energy Management in Buildings, Energy Optimization in Pipeline Systems, Energy Management and Autonomy in Vehicles, and Energy and Thermal Management Devices. Researchers and practitioners interested in these and related areas are invited to attend. If you want a specific topic for discussion included in the agenda you may contact the TC chair.

Heat Pumps

The Heat Pump Technical Committee (HPTC) has maintained an active role in disseminating the latest developments in all theoretical and applications aspects of heating and cooling technologies, which have been changing rapidly in recent years. Recent national and global emphasis on energy efficiency and the environmental impact of heating and cooling technologies has provided exciting opportunities for heating and cooling research and development. New developments include advanced electric and heat-activated chillers and heat pumps; combined cooling, heating, and power technologies; new environmentally friendly refrigerants and working fluids including corrosion inhibitors; heat and mass transfer issues in heat pump components; heat exchanger materials and designs; compressor design; simulation; and integration and implementation issues.

The HPTC strives to help move the development of heating and cooling technologies from theoretical concepts to applications, with contributions from industry, academia and government agencies. The HPTC organizes technical sessions at the IMECE to bring together researchers working on these technologies. During the 2007 IMECE in Seattle, the HPTC sponsored two technical sessions and co-sponsored one panel session on topics that included CHP, global warming, and CFD techniques. These sessions were well attended and stimulated interesting discussions. At the 2008 IMECE in Boston, technical sessions have been coordinated by the HPTC on November 3. Members of the HPTC have also been active in organizing the overall AESD sessions and Energy tracks.

The HPTC meets once a year at the IMECE. Researchers interested in the above-mentioned topics and other related issues are encouraged to attend and participate in the activities of this committee. Potential sessions for the

2009 IMECE will be discussed at the HPTC meeting on Monday, November 3, 2008, from 7:30-8:30 pm (check the program for the room). New members and contributions are welcome.

Systems Analysis and Fuel Cells

The activities of the Systems Analysis Committee (SATC) were recently expanded to include the following: design and application of fuel cells, cogeneration, hydrogen technologies, environmental impact of energy systems, application of micro- and nanotechnologies in energy systems, and realistic optimization of complex energy systems. These activities reflect the committee's continuing work in the areas of fundamental thermodynamics, system design, analysis, and optimization; and also the application of these concepts in some of the most interesting and promising areas of research and technology development. The committee organized and presented the 2007 Symposium on Thermodynamics and the Design, Analysis, and Improvement of Energy Systems at the IMECE2007. A total of 71 presentations were given in 10 technical sessions including sessions on energy system analysis and design, exergy analysis, thermo-dynamics, fuel cell technology and applications, thermal systems analysis, thermoeconomic analysis of energy systems, alternative energy systems, and power plant and thermo-chemical cycle analysis. Chairs and co-chairs originated mostly from academia, with good participation from industry and government agencies. The committee wishes to thank the session chairs and co-chairs as well as Enrico Sciubba and Vittorio Verda for their hard work in organizing the 2007 Symposium.

With the goal of encouraging the participation of young researchers, the SATC presents a Best Student Paper Award for papers in which the presenter is a full-time student. In addition, to encourage and recognize outstanding scholarship at all levels of experience, the committee presents a Best Paper Award. The 2007 recipients of the Best Student Paper Award were Cullen Buie (student presenter), Shawn Litster, Juan G. Santiago for their paper "Physics of Pumping Methanol/Water Solutions for Fuel Cell Applications." The winners of the 2007 Best Paper Award were F. Casella, P. Colonna, and J. G. van Putten, for their paper "Dynamic Simulation of a Biomass-Fired Steam Power Plant: A Comparison Between Causal and A-Causal Modular Modeling."

At the IMECE2008, SATC is sponsoring the 2008 Symposium on Energy Systems

Analysis, Thermodynamics, and Sustainability in Track 8 which includes 19 technical sessions on topics such as fundamentals of thermodynamics and their teaching; energy systems and the environment; ultra-low emission power-plants, applications of micro- and nanotechnologies to energy systems; design and analysis of complex energy conversion systems; design and analysis of cogeneration and tri-generation systems; fuel cell systems analysis; hydrogen energy technologies; thermo-economics. These sessions will be held during November 2-5 at the IMECE2008 in Boston, MA. The committee wishes to thank the session chairs as well as the Symposium organizers, Vittorio Verda and Wilson Chiu for their hard work organizing the 2008 Symposium. The Symposium at IMECE 2009 will be held November 13-19, 2009 in Lake Buena Vista, FL (see p.5).

The SATC sponsored Energy Sustainability 2008 conference which was organized jointly by SED and AESD of ASME was held August 10-14, 2008 in Jacksonville, FL. The conference was well attended and contained many papers of interest to SATC members. Energy Sustainability 2009 will be held July 19-23 in San Francisco, CA (see p. 6). The committee also sponsored the 2008, ECOS Conference in Krakow, Poland. The 2009 ECOS Conference will be held August 31- September 3, 2009 in Foz de Iguazu, Brazil. Abstracts are due by December 15, 2008. For details see www.eventus.com.br/ecos2009/. The SATC currently meets once a year at the IMECE. The 2007 committee meeting was well attended. New officers for 2007-2008 included Dr. Enrico Sciubba, Chair, Dr. Vittorio Verda, Symposium Chair, and Dr. Wilson Chiu, Symposium Co-Chair. Researchers interested in the above-mentioned topics and other related issues are encouraged to attend and participate in the committee activities. The 2008 Committee Meeting will be held Monday, November 3 from 7:30pm - 8:30pm in Beacon D, 3rd Floor of Conference Hotel.

Energy Systems Miniaturization

The primary objectives of this committee are to increase its membership (from academia, industry and government labs) and to sponsor sessions at the IMECE and IECEC. The TC sponsored a technical session on Micro-Scale Energy Conversion/Storage Devices at IMECE2007 and is sponsoring a similar session on November 5 at IMECE 2008. The 2008 Committee Meeting will be held Monday, November 3 from 7:30pm - 8:30pm in Beacon E, 3rd Floor of Conference Hotel.

AES DIVISION ACTIVITIES AT THE 2008 ASME INTERNATIONAL MECHANICAL ENGINEERING CONGRESS AND EXPOSITION
NOVEMBER 2 – 6, 2008 BOSTON, MA

The AES Division is sponsoring a total of 24 sessions at IMECE 2008 on a variety of energy related topics. The papers scheduled in these sessions included numerous contributions from outside the U.S. and from industry, demonstrating the wide-ranging and global appeal of the technical topics being addressed by the AES Division. Sessions include:

Fundamentals of Thermodynamics and Thermoconomics
Design and Analysis of Complex Energy Conversion Systems
Design and Analysis for Sustainability
Optimization of Energy Systems
Energy Systems and the Environment
Alternative Energy and Sustainable Energy Systems
Heat Pumps and Combined Heat and Power Systems
Cogeneration and Tri-generation Systems
Fuel Cell Modeling and Experimental Analysis
Low and High Temperature Fuel Cell Systems
Hydrogen Energy Technologies
Ultra-Low and Zero Emission Power Plants and CO₂ Sequestration
Education in Thermodynamics, Energy Systems, and Sustainability
Applications of Micro- and Nanotechnologies to Energy Systems

The conference program is available at <http://www.asmeconferences.org/Congress08/TechnicalProgramOverview.cfm>.

2009 ASME INTERNATIONAL MECHANICAL ENGINEERING CONGRESS AND EXPOSITION (IMECE)
NOV. 13 - 19 2009, LAKE BUENA VISTA, FLORIDA, USA

Call for Papers:

Energy Systems: Analysis, Thermodynamics, and Sustainability

Authors and presenters are invited to participate in the Energy Track of the 2008 IMECE to expand international cooperation, understanding and promotion of efforts and disciplines in the areas of energy systems analysis, thermodynamics, and sustainability. Papers presented in this track will emphasize dissemination of research results, new developments, and novel system concepts relating to energy systems analysis, thermodynamics, and sustainability. A variety of sessions are available for paper presentations, and papers will be grouped into common interest areas to facilitate discussion.

Papers presented at this Symposium will be eligible for the prestigious ASME Edward F. Obert Award for the best paper on Thermodynamics. In addition, the Systems Analysis and Fuel Cell Technical Committee and the Heat Pump Technical Committee will each present a "Best Paper Award" and a "Best Student Paper Award" in their respective fields.

Abstracts are invited for presentation and publication in the following areas:

Fundamentals of Thermodynamics and Thermoconomics
Design and Analysis of Complex Energy Conversion Systems
Energy Systems and the Environment
Alternative Energy and Sustainable Energy Systems
Heat Pumps and Combined Heat and Power Systems
Low and High Temperature Fuel Cell Systems Analysis
Hydrogen Energy Technologies
Low/Zero Emission Power Plants
Education in Thermodynamics, Energy Systems, and Sustainability
Energy Systems Miniaturization
Direct Energy Conversion

Authors should submit a 400-word text-only abstract to:

<http://www.asmeconferences.org/Congress09/>

ABSTRACT DUE DATE: March 3, 2009

ASME 3RD INTERNATIONAL CONFERENCE ON ENERGY SUSTAINABILITY
A JOINT EVENT BETWEEN ASME SOLAR ENERGY DIVISION INTERNATIONAL SOLAR ENERGY CONFERENCE
AND ASME ADVANCED ENERGY SYSTEMS DIVISION
JULY 19-23, 2009
WESTIN ST. FRANCIS HOTEL, SAN FRANCISCO, CALIFORNIA
CO-LOCATED WITH ASME SUMMER HEAT TRANSFER AND INTERPACK '09 CONFERENCES

INVITATION

We invite researchers, engineers, scientists architects, consultants, and policy-makers in universities, industries, R & D laboratories & Government establishments to participate in this exciting event meant as a forum for exchange of innovative ideas, leading edge concepts, new technologies and devices, ongoing R&D efforts, prototype and demonstration projects, commercialization technologies and projects, and visions of the future related to the general theme of Energy Sustainability. The conference will consist of plenary talks, invited talks, panel discussions, workshops, tutorials, technical sessions, poster presentations and exhibitions, thus providing a unique opportunity for communication and collaboration between academia, industry and planners in the areas of Solar Energy, Energy Efficiency, Renewable Energy and Advanced Energy Technologies. The Conference will feature a special track for students interested in solar and energy efficiency consisting of technical and poster sessions, networking, and a job fair. Selected Papers from the ASME Energy Sustainability Conference Proceedings will be considered for publication in the ASME Journal of Solar Energy Engineering or the ASME Journal of Energy Resources Technology.

LIST OF TOPICAL AREAS

Abstracts are invited in any relevant policy & technology areas including the following:

- Climate Control & the Environment
- Biofuels
- Carbon Sequestration
- Combined Energy Cycles, CHP & CCHP
- Exergy for Sustainability
- Thermofluid mechanics & Thermodynamics of Energy Systems
- Micro & Nano Technologies Applications to Energy Systems
- Policy, Standards, Education & Legal Aspects of Energy
- Low/Zero Emission Power Plants
- Transportation Energy Systems
- Wind Energy Systems & Technologies
- Renewable & Alternative Energy Tech.
- Fuel Cells & Hydrogen Energy
- Energy Systems Design & Thermoeconomic Analysis
- Advances in Solar Buildings and Conservation
- Water Desalination & Distillation Systems
- Solar Heating & Cooling
- Photovoltaics
- Concentrating Solar Power
- Solar Thermochemistry
- Advances in Solar Thermal Storage
- Geothermal Energy, Harvesting Ocean Energy & Other Emerging Systems

7TH INTERNATIONAL ASME FUEL CELL SCIENCE, ENGINEERING, AND TECHNOLOGY CONFERENCE
JUNE 8-10, 2009 NEWPORT BEACH, CA, USA

CALL FOR PAPERS

ASME's 7th International Fuel Cell Science, Engineering & Technology Conference is designed for manufacturers of fuel cells and fuel cell components, utility professionals, the fuel cell research community, the business and investment community, educators and students with the goals to (1) exchange information, experiences, and insights from research to application, (2) provide a forum for discussion on advances, (3) identify barriers and solutions to accelerate technology development, and (4) further stimulate research and development activity in the emerging field of fuel cell systems and components for stationary, mobile and portable power applications.

Researchers, technologists, users, manufacturers, designers, regulators, contractors, energy companies, utilities, and third-party providers are invited to submit abstracts. Papers from industrial authors are encouraged and welcomed. Presentation formats include poster presentations with a technical paper; poster presentations without a technical paper; oral presentations with a technical paper; and a limited number of oral presentations without a technical paper. All technical papers will be peer reviewed for inclusion in the conference proceedings. A limited number of technical papers identified by the reviewers will be considered for archival publication in the ASME Journal of Fuel Cell Science and Technology in addition to presentation and publication in the conference proceedings. Topics of interest include, but are not limited to:

- Low Temperature Fuel Cell Technologies
- High Temperature Fuel Cell Technologies
- Modeling, Design and Optimization for High and Low Temperature Fuel Cells
- Materials for Low Temperature Fuel Cells
- Materials for High Temperature Fuel Cells
- Production and Scale-up for Fuel Cell Technologies
- Demonstration Projects
- Fuels and Infrastructure
- Markets, Applications, and Policy Issues
- Power Conditioning and Grid Connectivity
- Posters

Authors should submit a 400-word text-only abstract to:

www.asmeconferences.org/fuelcell09

ABSTRACT DEADLINE: January 16, 2009

Several opportunities are available for AESD authors to publish their technical articles. These include symposia, the monthly Mechanical Engineering, and archival journals. AESD authors are encouraged to give a tangible expression of their ASME affiliation by considering these publication outlets.

Opportunities for publishing technical papers are provided by the symposium volumes of the IMECE AESD technical sessions. Normally one or more such volumes are prepared annually, comprised of the dozens of papers presented at the IMECE. Such papers may be eligible for consideration for the prestigious E.F. Obert Award, as well as individual technical committee awards.

Symposium volumes are available for purchase at IMECE or may be ordered directly from ASME technical

publications. Abstracts are generally due in January for papers to be presented at the following IMECE. Authors wanting to participate at the IMECE should check the calls for papers in the monthly meetings calendar in Mechanical Engineering or visit <http://www.asme.org/events/>.

In addition to the IMECE, every summer for over 20 years, AESD also has participated in symposia held outside the United States at various memorable sites, as discussed in the AESD Conference Activities section below. For information concerning upcoming conferences, authors should check the meetings calendar in Mechanical Engineering or visit <http://www.asmeconferences.org/>.

Additional outlets for technical articles by AESD authors are provided by the archival ASME journals, Journal of Energy Resources Technology,

Journal of Engineering for Gas Turbines and Power, Journal of Turbomachinery, and the new Journal of Fuel Cell Science and Technology. Owing to peer review requirements and some queuing of accepted papers before publication, a year or more can elapse between submission and publication. Still, archival journals are the appropriate forum for articles of enduring value.

For answers concerning your questions about AESD publishing opportunities contact M.J. Moran (contact information is provided in the roster at the end of the newsletter). This newsletter also welcomes articles of general interest to the Division membership. Interested authors should contact M.W. Ellis, the Newsletter Editor, at the address given in the roster at the end of this publication.

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Energy Systems Miniaturization

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