



2006 EARLY CAREER TECHNICAL CONFERENCE

Entergy Nuclear Headquarters
1340 Echelon Parkway
Jackson, Mississippi
October 5-7, 2006

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PLENARY SESSION

Keynote Speaker



William R. Campbell is the Chief Operating Officer of Entergy Nuclear South, with a fleet of five nuclear plants and combined generating capacity of 5000 MW. He has shown remarkable support for ASME and appreciates the role ASME plays in the safe and efficient operation of the nuclear facilities. Entergy owns and operates power plants with approximately 30,000 megawatts of electric generating capacity, and is the second-largest nuclear generator in USA.

Mr. Campbell earned his Bachelors Degree in Nuclear Engineering from Carolina State University and a Masters in Mechanical Engineering from Clemson University. Mr. Campbell began his career with Duke Power in 1973. He left Duke for United Energy Services Corporation in Atlanta, Ga. From 1983 to 1993, he worked in various managerial positions at Union Electric Company's Callaway Plant. In 1993, Campbell accepted a position as vice president of nuclear engineering with the Carolina Power and Light and also served as vice president of the Brunswick Nuclear Station and vice president of operations and environmental support.

In 1998, Mr. Campbell joined Entergy Nuclear as Vice-President, Design Engineering, responsible for leading the efforts of 950 people. In 1999 alone, the business unit was responsible for \$180 million in revenues. In mid-June, 2000, Mr. Campbell assumed the role of Entergy Operations engineering vice president before taking over the present assignment as the Chief Operating Officer at Corporate Headquarters of Entergy Nuclear South. Mr. Campbell is the past chairman of the American Nuclear Society, Eastern Carolinas Section, and past vice chairman of the Boiling Water Reactor Vessel and Internals Program.

Mr. Campbell had been instrumental for these Early Career Training Conferences by way of continued support and valuable contributions to programs that support the professional development of early career engineers.

Featured Speaker



Dr. Reginald I. Vachon served as the 122nd president of ASME International from 2003 to 2004. He received distinguished honors from the Institution of Mechanical Engineers (United Kingdom) and the Pan American Academy of Engineering, an international organization of the Americas. Vachon is a Fellow of ASME and the Institution of Mechanical Engineers (IMechE), and a Chartered Engineer (CEng.) of UK.

Dr. Vachon is a registered professional engineer in six states and is also a licensed attorney and has more than 40 years of experience in industry, education, and the government sector. Dr. Vachon is a prominent researcher, educator and business executive. He holds a Ph.D. in engineering, a master's in nuclear science, a bachelor's in mechanical engineering and a bachelor of laws degree.

Dr. Vachon served as a professor of mechanical engineering at Auburn University (Ala.) and contributed to more than 100 technical papers. Vachon has consulted on several prominent design projects for the Department of Energy, Department of Defense, Environmental Protection Agency and NASA, and has vast experience in international engineering business. In 2004, Vachon was appointed to the U.S. Department of Homeland Security's Security Science and Technology Advisory Committee.

Dr. Reginald Vachon's vision and management skills were largely instrumental in putting together an "ASME's FUTURES TEAM" that provided the global perspective and direction for the current reorganization of ASME International.

ASME 2006 ECTC - THEME OF THE CONFERENCE:

“MECHANICAL ENGINEERING IN
A CHANGING WORLD”

PLENARY SESSION PROGRAM

8:00 AM OCTOBER 6, 2006

WELCOME TO 2006 ASME-ECTC & RECOGNITIONS:

DR. K. R. RAO & DIPAK NEGANDHI PE, CHAIR MS SECTION

INTRODUCTION OF KEYNOTE SPEAKER

DR. K. R. RAO

KEYNOTE SPEAKER

WILLIAM R. CAMPBELL, COO, ENTERGY NUCLEAR SOUTH

ASME CODE OF ETHICS & INTRODUCTION OF FEATURED SPEAKER

TAL WEBB, PE

FEATURED SPEAKER

DR. REGINALD I. VACHON, PAST PRESIDENT, ASME

ASME STAFF PERSPECTIVE

BURTON DIGHT, MANAGING DIRECTOR, KNOWLEDGE & COMMUNITY

ASME VOLUNTEER PRESPECTIVE

RICHARD BUNCE, DISTRICT LEADER

ASME AUXILIARY

DR. NINA WEBB, PAST PRESIDENT

2006 ASME-ECTC: PROGRESS SINCE 2002

DR. YONG X. TAO

Coffee break 10:00-10:15

(Technical Program follows after the break. See the back page)

ASME 2006 Early Career Technical Program

Friday (October 6, 2006)

Session 1 10:15-12:20

Daniel Ursu, *The Johns Hopkins University*, Control of nonlinear stochastic systems: model-free versus classical controllers

T. J. Yu, *University of Florida*, An inverse method for the determination of full field stresses from experimentally measured normal strains

Kyle D. Younger, *Florida Dept. of Transportation*, Validation of laser profiling systems and algorithms as used in accelerated pavement testing

Divija Odapally, *University of Texas at Arlington*, Structural optimization using FEMLAB and smooth support vector regression

Ravi Zalani, *University of Mississippi*, NDE of adhesive bonded joints using vibration and EIS techniques

Lunch 12:30-13:30

Session 2 13:35-15:40

Satish Perivilli, *Tennessee Tech University*, Quasi steady numerical modeling of friction stir welding

Suresh Nikalaje, *University of Texas at Arlington*, Thermal compact model for electronics packages

Dinesh Immaneni, *University of Arkansas*, A simple finite element coupled model for the stress analysis of rotating parts

Manish Sitlani, *Lamar University*, Numerical simulations on aerodynamic drag of ground transportation system (GTS) model

Andy D. Huffman, *AREVA NP, Inc.*, The effect of tropicalization on steam generator blowdown system design for standardized nuclear power plant design

Coffee break 15:40-15:55

Session 3 15:55-17:35

Mehmet Ismet Can Dede, *Florida International University*, Cerberus: Development of a Humanoid Robot

Mehmet Ismet Can Dede, *Florida International University*, Rapid robot prototyping

Salim Nasser, *Florida International University*, Design of a cost-effective, underactuated hand

prosthesis with passive-adaptive grasping and pinching capabilities

Chinmay Deshpande, *Texas A&M University*, Parametric analysis of temporal variation in fingertip temperature in response to reactive hyperemia due to vascular occlusion

Dinner 18:30

Saturday (October 7, 2006)

Session 4 8:00-10:05

Matthew Blackwood, *University of Alabama*, Structural characteristics of hydrogen fuel cells in automotive collisions

Zhaohong Wu, *University of Texas at Austin*, Bond graph based generic modeling of design configurations

Kapil Gupta, *The University of Mississippi*, Cooling of a power amplifier array using copper nano particles and zig-zag fins

Manjunath V. Pappur, *Entergy Operations, Inc.*, Structural evaluation of nuclear piping/component subjected to flow accelerated corrosion

H. Sapmaz, *Florida International University*, Quantitative measurements of soot in steady and pulsed ethylene/air diffusion flames using laser-induced incandescence

Coffee break 10:05-10:20

Session 5 10:20-12:00

Xiaobo Peng, *Prairie View A&M University*, Freeform Modeling using swept differential equation with Haptic Interface

Raymond E. McDonnell III, *Clemson University*, The effects of water droplet oscillations on the scavenging of micron sized particles

Narasimhan Swaminathan, *Georgia Institute of Technology*, Mechanical-electrochemical theory of defects in ionic solids

Kejen E. Stamps, *Unified Brands, Inc.*, Design of drain compartment kit with movable cart for front and rear drainage applications in food service industry

Conference adjourns 12:00

Pandeli Durbetaki
Treasurer
Coordinating Committee

Yong X. Tao
Member, Coordinating Committee
Chair, Technical Committee and
Editor, Technical Journal

K. R. Rao
Chair
Coordinating Committee