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- working on small scales

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Closing Plenary Speaker of the

4th INTERNATIONAL SYMPOSIUM ON ENERGY CHALLENGES AND MECHANICS

and Chair of Session 16

HETEROGENEOUS NANO-MATERIAL DESIGN FOR ENERGY CONVERSION AND STORAGE

Dr. Kenneth Reifsnider
Educational Foundation University Professor
Director, Solid Oxide Fuel Cell Center

Dr. Ken Reifsnider is University Professor of Mechanical Engineering and Director of the South Carolina SmartState Center for Solid Oxide Fuel Cells at the University of South Carolina. He has also held Chaired faculty positions at the University of Connecticut, and at Virginia Tech where he chaired the Materials Engineering Science interdisciplinary PhD program.

Dr. Reifsnider is an international expert on heterogeneous (composite) materials, and has pioneered their development and application to aerospace structures, fuel cells, jet engines, and turbines (as the Pratt & Whitney Chair at the University of Connecticut). His signature book on Material Systems (Wiley) is the foundation for two graduate courses taught at USC (available online) and is widely cited. His research interests include durability, damage tolerance and strength-life relationships in material systems, performance and life prognosis, aging, material state changes, long term behavior, and fuel cell science and engineering.

Dr. Reifsnider has been a leader in the development of interdisciplinary research and education. As Associate Provost for Interdisciplinary Programs at Virginia Tech, he guided the activities of 104 Centers and Institutes that bridge the gap between fundamental science and applications to society. In 2009 Dr. Reifsnider led a team from seven universities and two national laboratories to win funding for a DOE / BES Energy Frontier Research Center (EFRC) for Heterogeneous Functional Materials, the HeteroFoaM Center (www.HeteroFoaM.com), one of 44 in the U.S. and the only one in South Carolina. That team has published over 140 archival papers and 9 patent applications for energy conversion and

storage devices. Dr. Reifsnider has given invited lectures in sixteen countries on related topics. As part of that activity, assisted by his wife Dr. Martha Reifsnider, he has conducted a variety of K-12 outreach activities including in-service training that has reached over 1500 grade school teachers in South Carolina.

Throughout his career, Dr. Reifsnider has always maintained a strong connection with aerospace science and technology, and with the aerospace industry. Many of his former students work in aerospace companies, including the Boeing Corporation which recently established a manufacturing facility in South Carolina. At the National level, Dr. Reifsnider served two terms on the Scientific Advisory Board for the U.S. Air Force, a White House appointment.

In 2004, Professor Reifsnider was elected to the National Academy of Engineering, the highest professional honor afforded in the engineering field. He is the only NAE faculty member in the state of South Carolina. Appointment to the Academy is based on "important contributions to engineering theory and practice, including contributions to the literature of engineering theory and practice" and “demonstrated accomplishment in the pioneering of new fields of engineering, making major advances in traditional fields of engineering, or developing/ implementing innovative approaches to engineering education." The NAE citation for Dr Reifsnider is his "development of strength-life relationships in composite materials and structures."