

James R. Keiser



Research Staff
Corrosion Science & Technology Group
Materials Science & Technology Division
Oak Ridge National Laboratory
P.O. Box 2008
Oak Ridge, TN 37831-6156
Phone: (865) 574-4453
email: keiserjr@ornl.gov

Research Interest:

Environmental degradation of materials

Current R&D:

Identify suitable materials for Transport Membrane Condenser for recovery of heat and water from exhaust gas streams

Identify materials for heat recovery in bio-mass fired boilers

Identify metallic and refractory materials for use in black liquor gasifiers

Identify materials for use in biomass gasifiers

Recent R&D:

Determine the cause of and solutions for cracking of co-extruded stainless steel/carbon steel tubes in paper mill recovery boilers

Identify structural materials suitable for use in paper mill digesters

Determine the effect of simulated gas turbine combustor conditions on ceramic fiber composites

Determine the effect of high-temperature, high-pressure steam environments on advanced gas turbine materials

Evaluate advanced intermetallic alloys for ethylene cracking furnace tubes

Determine the compatibility of selected ceramic materials with advanced steam reformer conditions

Determine the compatibility of selected ceramic materials with ethylene cracking conditions

Education:

Ph.D., Metallurgical Engineering, University of Missouri-Rolla, 1971

B.S., Science Engineering (Materials Science option), Northwestern University, 1966
Research Associate, Metallurgical Engineering Dept., University of Illinois, 1972-74
Research Associate, Metallurgical Engineering Dept., University of Missouri-Rolla, 1971-72

Professional Affiliations:

ASM International

Former chair of Specialty Materials Critical Technology Sector

Fellow of society

NACE International

Former chair of Annual Conference Programming Committee

Fellow of society

Technical Association of the Pulp and Paper Industry

Publications:

J. R. Keiser, D. L. Singbeil, G. B. Sarma, J. R. Kish, K. A. Choudhury, L. A. Frederick, J. P. Gorog, F. R. Jetté, C. R. Hubbard, R. W. Swindeman, P. M. Singh, J. Yuan, P. J. Maziasz, "Cracking and Corrosion of Composite Tubes in Black Liquor Recovery Boilers," Chapter in 40 Years Recovery Boiler Co-Operation in Finland, Proceedings of the International Recovery Boiler Conference, Haikko Manor, Porvoo, Finland, May 12-14, 2004.

J. R. Keiser, D. L. Singbeil, G. B. Sarma, J. R. Kish, K. A. Choudhury, C. R. Hubbard, L. A. Frederick, J. Yuan, P. M. Singh, "Causes And Solutions For Recovery Boiler Primary Air Port Composite Tube Cracking," Proceedings of the 11th International Chemical Recovery Conference, Charleston, SC, June 7-11, 2004, Winner of I. H. Welden Best Paper Award for 2004 Conferences.

J. R. Keiser, J. G. Hemrick, R. A. Peascoe-Meisner, C. R. Hubbard, and J. P. Gorog, "Studies And Selection Of Containment Materials For High-Temperature Black Liquor Gasification," Proceedings of TAPPI Engineering, Pulping and Environmental Conference, TAPPI Press, Atlanta, GA, November 2006.

J. R. Keiser, J. R. Kish, L. A. Frederick, A. W. Willoughby, K. A. Choudhury, D. L. Singbeil, F. R. Jetté, J. P. Gorog, "Recovery Boiler Superheater Corrosion Studies," Proceedings of the International Chemical Recovery Conference, Quebec City, QC, Canada, May 29-June 1, 2007, Winner of Conference Best Paper Award.

J. R. Keiser, R. A. Meisner, J. G. Hemrick, J. P. Gorog, W. R. Leary, C. A. Brown, I. Landälv, A. Gupta and K. A. McGowan, "Recent Experience With Structural Materials In Commercial-Scale Black Liquor Gasifiers," Proceedings of the International Chemical Recovery Conference, Quebec City, QC, Canada, May 29 June 1, 2007.