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Brief Biography

Dr. Litzinger received his B. S. degree in Nuclear Engineering from Penn State in 1977. After graduation, he joined General Electric and spent four years working on advanced energy systems, flow-induced vibrations and acoustics. While at General Electric he earned a Masters Degree in Mechanical Engineering from RPI through the Edison Engineering Program. In 1981 he moved to Princeton University to pursue his Ph. D. in Mechanical and Aerospace Engineering which he completed in 1985. Prof. Litzinger joined the faculty of Mechanical Engineering at Penn State in Fall of 1985 as an Assistant Professor; he was promoted to Associate Professor in 1990 and to Full Professor in 1995. He assumed the Directorship of the Leonhard Center for the Enhancement of Engineering Education in July of 1997.

Relevant Experience and Interests

Dr. Litzinger's research involves chemical aspects of combustion related to internal combustion engines, gas turbines, and rockets. He conducts research that is primarily experimental in nature and ranges from fundamental, bench-top experiments on the combustion chemistry of fuels and propellants to investigations of commercial automotive engine emissions. His current research focuses on the effects of fuel composition, including oxygenated compounds and additives, on emissions from gas turbines and on the combustion chemistry of advanced liquid propellants.

Five Publications Relevant to the Present Subject Area

1. A. V. Menon, S.-Young Lee, M. J. Linevsky, T. A. Litzinger, and R.J. Santoro (2007). "Addition of NO_2 to a Laminar PremixedEthylene-air Flame: Effect on Soot Formation," *Proc. Combust. Inst.* 31, 593-601.
2. K. H. Song and T. A. Litzinger (2006). "Effects of Dimethyoxymethane Blending into Diesel Fuel on Soot in an Optically-Accessible DI Diesel Engine," *Combust. Sci. Tech.* 178, 2249-2280.
3. J. Wu, K. H. Song, T.A. Litzinger, S.-Y Lee, R. J. Santoro, M. Linevsky, M. Colket, and D. Liscinsky (2006). "Reduction of PAH and Soot in Premixed Ethylene-air Flames by Addition of Ethanol," *Comb. Flame* 144, 675-687.
4. J. Wu, K. H. Song, T. A. Litzinger, S.-Y Lee, R.J. Santoro, and M. Linevsky (2006). "Reduction of PAH and Soot in Premixed Ethylene-air Flames by Addition of Dimethyl Ether," *Combust. Sci. Tech.* 178, 837-863
5. K. H. Song, P. Nag, T. A. Litzinger, and D. C. Haworth (2003). "Reduction of Aromatic Species by Oxygenated Additives in Fuel-rich Ethane Combustion: a Modeling Study," *Combust. Flame* 135, 341-349.

Other Selected Publications

1. K, L. McNesby, A, W. Miziolek, T. Nguyen, R. R. Skagg, V. Babushok, and T. A. Litzinger (2005). "Experimental and Computational Studies of Oxidizer and Fuel-side Addition of Ethanol to Opposed-flow Air/Ethylene Diffusion Flames," *Combust. Flame* 142, 413-427.
2. J.-S. Chen, T. A. Litzinger, and H. J. Curran (2005). "The Lean Oxidation of Iso-Octane at Elevated Pressures," *SAE Tech. Paper* 2005-01-3574.
3. J.-S. Chen and T. A. Litzinger (2001). "The Diluted Stoichiometric Oxidation of Iso-Octane in the Intermediate Temperature Regime at Elevated Pressures," *Combust. Sci. Tech.* 172, 69-78.
4. P. Nag, T. A. Litzinger, and D.C. Haworth (2001). "A chemical kinetic modelling study of the mechanism of soot reduction by oxygenated additives," *Int. J. Engine Res.* 2, 1-13.
5. D. Kocis, D., K.-H. Song, H.S. Lee, and T.A. Litzinger (2000). "Effects of Dimethoxymethane and Dimethylcarbonate on Soot Production in an Optically-Accessible DI Diesel Engine," *SAE Tech. Paper* 2000-01-2795.