

Aerospace Combustion-Generated PM and Gaseous Emissions Characterization

Research Topics

The chemical and physical characterization of ultrafine particulate matter (PM) from aerospace combustion emissions. The research focusses on:

- acquisition of emissions measurement data,
- analysis and interpretation of emissions data
- development of novel state of the art instrumentation for the measurement and interpretation of aerospace combustion generated PM

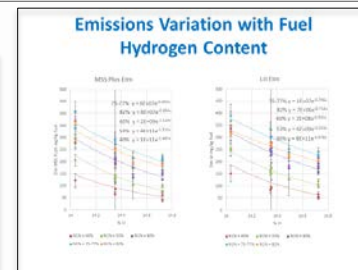
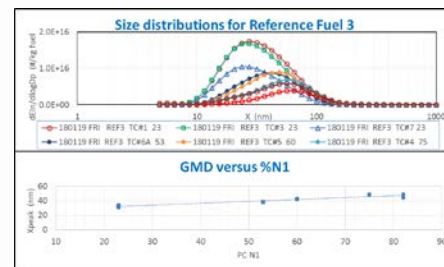
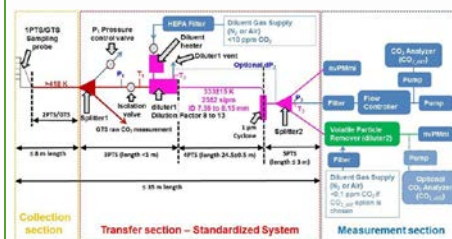
Contact Information

Philip D. Whitefield
 Professor of Chemistry and Director of
 the Center for Research in Energy and
 Environment (CREE)
 Department of Chemistry
 101 Engineering Research Laboratories
 Email: pwhite@mst.edu



Recent Funding Sources

FAA COE's PARTNER and ASCENT, EPA, DOD, TRB-ACRP,
 Transport Canada, EASA, SHELL, GEAE, P&W, RR,
 Honeywell Booz Allen Hamilton



Recent Publications

Ground-based In-situ PM Emissions Characterization during NASA's ND-MAX Campaign Using SAE Aerospace Recommended Practice. Philip D. Whitefield¹, Richard C. Miake-Lye, Steven Achterberg, Zenhong Yu, Max Trueblood and Wenyan Liu, AGU Fall Meeting 2018, Washington DC December 12, 2018.

State of the Industry Report on Air Quality Emissions from SAJF Prepared for ACRP 02-80, Transportation Research Board of the National Academies, Feb 2018

Demonstration of a Regulatory Method for Aircraft Engine Nonvolatile PM Emissions Measurements with Conventional and Isoparaffinic Kerosene fuels, Lobo, P., Condevaux, J., Yu, Z., Kuhlmann, J., Hagen, D.E., Miake-Lye, R.C., Whitefield, P.D., Raper, D. *Energy and Fuels* (2016), Vol. 30, 7770-7777.

Lobo, P., Durdina, L., Smallwood, G.J., Rindlisbacher, T., Siegerist, F., Black, E.A., Yu, Z., Mensah, A.A., Hagen, D.E., Thomson, K.A., Miake-Lye, R.C., Brem, B.T., Corbin, J.C., Abegglen, M., Sierau, B., Whitefield, P.D., Wang, J., "Measurement of Aircraft Engine Non-volatile PM Emissions: Results from the Aviation - Particle Regulatory Instrumentation Demonstration Experiment (A-PRIDE) 4 Campaign", *Aerosol Science and Technology* (2015), Vol. 49, 472-484.