

Regulated Emissions from Diesel and Compressed Natural Gas Transit Buses



**Nigel N. Clark, W. Scott Wayne, Donald W. Lyons, Mridul Gautam,
Gregory J. Thompson and ABM S. Khan**

Center for Alternative Fuels, Engines, and Emissions (CAFEE)

Department of Mechanical & Aerospace Engineering

West Virginia University

Morgantown, WV, 26506

Summary

- Distance-specific Emissions and fuel economy data collected from eight 40-foot transit buses are presented in this poster.
- These buses included six Orion natural gas buses driven with John Deere lean-burn natural gas engines and Cummins lean-burn natural gas engines and two 1992 Orion buses retrofitted with 2003 model year DDC diesel engines.
- Emissions from these buses, in general, were high when driven on slow speed cycles such as the NYBus, the Manhattan, or the Paris cycles and low when driven on high speed cycles such as the Arterial and the Commuter phases of SAE J1376.
- Methane from natural gas buses constituted about 90% of THC emissions by FID while NMHC constituted about 4.5% of THC by FID, on average.
- Fuel economy from these buses was strongly affected by cycle properties including their average speed.