



BMDO Update

Linking American Businesses to Ballistic Missile Defense Technology

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SENSORS

MAKE WAY FOR SMALLER, CHEAPER MULTIGAS ANALYZERS

Huge racks of gas analyzers used to be the norm for monitoring turbine engine emissions, but they can now be

replaced with a single, portable instrument. The new multigas analyzer developed by Advanced Fuel Research, Inc. (AFR; East

Hartford, CT), is 60-percent less expensive and 20-times smaller than today's 100-cubic-foot racks. AFR has already delivered prototypes of the MG-2010 to the U.S. Air Force, Pratt & Whitney, and two environmental monitoring service companies, and has recently received an additional purchase order from the Air Force. The multigas analyzer can be used anywhere there is a need for analyzing multiple gas species (e.g., monitoring the concentrations of dangerous gases in paint booth facilities).

As a result of a BMDO SBIR contract in the early 1990s, AFR developed a ruggedized Fourier transform infrared (FT-IR) spectrometer that brought this useful analysis technique out of the laboratory and into the field. One possible BMDO use is in satellites, from which the detector could identify rocket launches here on Earth. Expanding on the BMDO-funded research, AFR used Air Force SBIR funding to adapt its technology to the monitoring of turbine engine exhaust. The MG-2010 replaces a large set of analyzers with a single instrument that can simultaneously speciate hydrocarbons, report concentrations on difficult-to-measure species such as formaldehyde and ammonia, and measure FAA- and EPA-specified criteria pollutants. The MG-2010 can use the same sampling apparatus and transfer line used with traditional analyzers, but does not require the removal of

combustion-generated moisture from the sample stream, as do traditional instruments. AFR welcomes inquiries about the MG-2010 from turbine engine manufacturers and others who require multigas analysis.

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Portable device.
Sitting on a desktop or in a small rack, a multigas analyzer developed by AFR replaces the large assembly of equipment once used to monitor turbine engine exhaust.