Introducing CRG's
Modular Total Environmental Sensor (MoTES)

Long-term exposures to low levels of hazardous gases, particulates, and volatile organic compounds (VOCs) are difficult to monitor and can have critical effects on an individual's health. Occupational and military environments need customized solutions for monitoring environmental hazards, specifically when evaluating long-term effects. MoTES is a tailorable device that combines two typically disparate measurement devices (gases/VOCs and particulates/dust) into an all-in-one wearable package.

MoTES increases warfighter safety with the following features/benefits:

Self-Contained
Sensor suite operates with an internal rechargeable battery for a portable design

Small/ Lightweight
Entire system is approximately 3.4" x 4.7" x 1.7" and less than 1 lb.

Fast/ Accurate Response
Proven feasibility testing with commercially available sensor integration

Comfortable Wearables
Device equipped with various attachment options on belt or over clothing

Sensor Modularity
Sensors are easy to be replaced and customized per intended environment

User-Friendly Data
Detects ~ 1% of OSHA PEL (gases, VOCs, particulates) with synchronized data output

Monitor gas and particulate exposure

via a wearable environmental monitoring sensor suite

Industry standard portable particulate monitor

+

Industry standard portable gas monitor

MoTES combines industry standard dust/particulate and gas monitoring into a wearable all-in-one device

MOLLE Compatible

Modular Gas Sensors

Combined Dust and Gas Monitoring

Modular Total Environmental Sensor (MoTES) Status:

Technology Readiness Level: 1 2 3 4 5 6 7 8 9

Manufacturing Readiness Level: 1 2 3 4 5 6 7 8 9 10

Field Testing: Army Expeditionary Warrior Experiment (AEWE); On-aircraft confined space monitoring (w/ AFRL)

Sensor Interface: Tested custom design and fabrication

Benchtop Testing: Quantified limits of detection, response speed, & cross-sensitivities

Test Bed Development: Introduction of controlled gas mixes with temperature, humidity and pressure control

Potential Use Cases:

Burn Pits

Warfighter

Flight Line

Firefighting

Industrial

CBRNE

For more information:
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