



News Release

For Immediate Release
September 6, 2007

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New, high-range monitor for black carbon performs well in tests

Efficient and user-friendly *Aethalometer*[®] AE-90 measures up well to conventional, manual methods

(Berkeley, California) – Recent testing by university researchers in China shows that data from Magee Scientific's new, high-range emissions monitor correlates well to conventional, manual methods of measuring black carbon from point sources.

Researchers at the Chinese Academy of Sciences in Guangzhou tested a prototype version of the *Aethalometer*[®] AE-90 High-Range Emissions Monitor in a coal-fired combustion chamber alongside an extractive filter-based sampler. The researchers used a second control method of a dilution-based system that utilizes well-characterized technology from the *Aethalometer*[®] AE-42 Portable, an ambient-level instrument.

The results of the tests, conducted in Sept. 2006, show that the *Aethalometer*[®] AE90 correlates well to both control methods, validating the use of a continuous measurement method for identifying point-source emissions of black carbon.

Black carbon, the primary ingredient of soot, is a byproduct of burning coal or diesel. It is considered toxic to humans and can contribute to lung and heart disease, as well as cancer. Black carbon also contributes to global climate change and large-scale environmental issues.

The *Aethalometer*[®] AE-90 uses optical light absorption to measure black carbon particle mass concentration in near-real-time. Other methods require collection of material onto a filter and subsequent lab analysis of the filter. This manual method is costly, labor-intensive and provides only one measurement per sampling period. A continuous monitor provides data in near-real-time and can operate unattended for long periods, emulating the operation and data availability of typical continuous emissions monitoring systems (CEMS) required by the U.S. Environmental Protection Agency.

"Aethalometer technology has been the worldwide standard for real-time measurement of black carbon for more than two decades," said Magee Scientific president Tony Hansen, Ph.D. "These latest study results confirm that the Aethalometer can be extended for use in fully extractive point- and mobile-source applications. We intend to continue testing our new system on various coal- and carbon-based fuel sources to extend the application spectrum of our unique technology."

The tests were conducted by Prof. Zhi Guo-rui and Chen Ying-jun at the State Key Laboratory of Organic Geochemistry, Guangzhou Institute of Geochemistry, Chinese Academy of Sciences. The test report was released in early 2007 and is available by request.

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