

Next-generation air monitoring – an overview of EPA research to develop real-time instrumentation packages for stationary and mobile monitoring

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Abstract. Air pollution measurement technology is advancing rapidly towards small-scale, real-time, wireless detectors, with a potential to significantly change the landscape of air pollution monitoring. The U.S. EPA Office of Research and Development is evaluating and developing a range of next-generation air monitoring (NGAM) technologies, with potential applications including supplementing regulatory air monitoring networks, fenceline monitoring of source emissions, and personal exposure assessment. Customized air monitoring systems have been developed to meet key objectives, with examples including vehicle platforms equipped with real-time emission detection instruments, a solar-powered and wirelessly transmitting community air station integrated into a park bench, and low cost wireless sensor networks. This presentation will provide an overview of emerging air sensing technologies and discuss challenges and opportunities for future air monitoring.