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Introduction

The 1990s saw a massive investment aimed at developing new telecommunications capabilities. This led to advances in miniature optics, light sources, tunable filters, array detectors, fiber optic sensors and a range of other photonic devices, along with technologies for their mass production. These and related advances are increasingly being exploited in new spectroscopic technologies that are often more sensitive and selective, smaller, cheaper, and more robust than their laboratory predecessors. Concurrent improvements in analytical theory and data analysis methods have pushed the capabilities of these spectroscopic devices even further. The consequence: spectroscopy-based systems making critical judgments in environments and applications that were unreachable twenty years ago.

This conference premiered at Optics East 2007 in Boston, MA and is now part of the SPIE Defense, Security, and Sensing symposium. The emphasis of these proceedings is on advanced technologies for spectroscopic instrumentation, particularly the IR, near-IR and Raman molecular techniques. This one-day conference was divided into three sessions focusing on Imaging Spectroscopy, Miniature and Portable Spectrometers, and MEMS-based Spectrometers. In all, eighteen papers were presented and we are pleased to be able to bring you seventeen of them in these proceedings.

On behalf of our program committee members, we hope that we can count on your participation in a future Next-Generation Spectroscopic Technologies conference.

Mark A. Druy
Christopher D. Brown
Richard A. Crocombe