



Adaptation of a commercial Raman spectrometer for multiline and broadband laser operation

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A commercial single laser line Raman spectrometer is modified to accommodate multiline and tunable dye lasers, thus combining the high sensitivity of such single monochromator systems with broadband operation. Such instruments rely on high-throughput interference filters that perform both beam alignment and Rayleigh filtering. Our setup separates the dual task of the built-in monochromator into two independent elements: a beam splitter and a long pass filter. Filter rotation shifts the transmission passband, effectively expanding the range of operation. Rotation of the filters has a negligible effect on the optical path, allowing broadband operation and stray light rejection down to 70-150 1/cm. Operation is demonstrated on single-walled carbon nanotubes, for which the setup was optimized.

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