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Paper Title: Low-cost Raman Spectrometer: Building Blocks for Research

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Abstract

The Raman Low-cost Raman Spectrometer initiative, a cost-effective solution for Raman spectroscopy, offers a cheaper and cost-effective technique for analyzing the molecular composition of substances using scattered light. Despite initial obstacles such as improper alignment and identification of substrate fingerprints, the project yielded valuable lessons and insights regarding the construction and alignment of a Raman spectrometer. Calibration of the system highlighted the significance of precise calibration procedures and consideration of experimental constraints. In addition to leaving light on the difficulties posed by substrate fingerprint identification, the project inspired the development of novel approaches and methods for the future. This project is expected to inspire future students in Raman spectroscopy and biomedical research, equipping them to overcome challenges more effectively and establishing the way for further innovations and breakthroughs in the realm of Raman spectroscopy as a transformative tool in biomedical studies.
