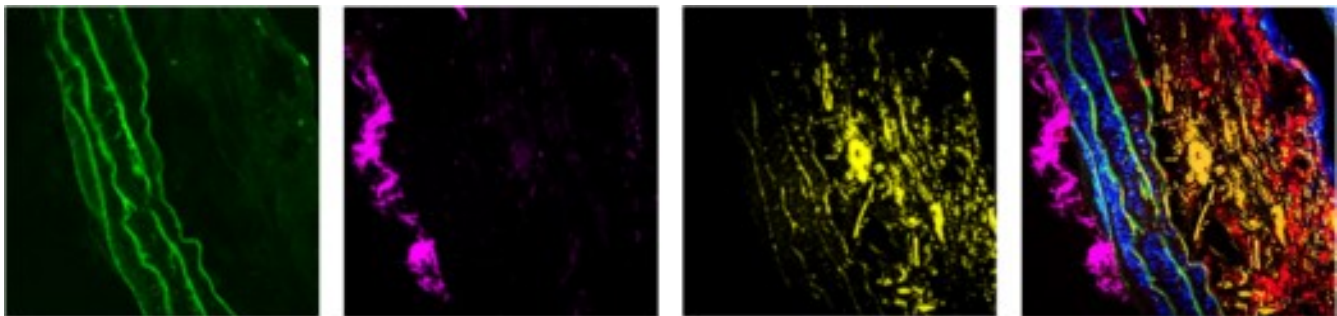




picoEmerald - A Reference List

Imaging and Spectroscopy with a
Tunable Two-Color Source



Multimodal NLO Imaging incl. CARS and SHG. Image
Courtesy of Park, Joo Hyun and Lee, Sang-Wong



APE's picoEmerald - A Reference List

Introduction

Raman-based microscopy and spectroscopy techniques allow samples to be investigated without labeling. The technique visualizes structures in samples by detecting the characteristic intrinsic vibrational contrast of their molecules. Thus, fluorescent dyes are not required.

APE's picoEmerald is an automated two-color laser source. It has been specifically designed to meet the requirements of CARS, SRS, multimodal imaging, SHG/multiphoton fluorescence, and similar methods.

picoEmerald enables the shortest pulses possible for the highest signal level while maintaining maximum spectral resolution in ps-coherent Raman measurements.

Combining picoEmerald with APE's SRS detection module allows very short integration times while maintaining high sensitivity, transforming picoEmerald into an automated source for stimulated Raman scattering (SRS) with up to video-rate speed.

Typical Applications

- CARS - Coherent anti-Stokes Raman Spectroscopy
- SRS - Stimulated Raman Spectroscopy
- SHG - Second Harmonics Imaging
- SEHRS - Surface Enhanced Hyper Raman Spectroscopy

Scientific References (Selection)

Topic	Journal	DOI	Author	Application	System
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(2017). Coupling of vinculin to F-actin demands Syndecan-4 proteoglycan.	Matrix Biology	DOI: 10.1016/j.matbio.2016.12.006	Cavalheiro, R. P., Lima, M. A., Jarrouge-Bouças, T. R., Viana, G. M., Lopes, C. C., Coulson-Thomas, V. J., ... & Nader, H. B.	CARS	picoEmerald
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<p>(2016). Monitoring peripheral nerve degeneration in ALS by label-free stimulated Raman scattering imaging.</p> <p>Nature Comm. DOI: 10.1038/ncomms13283</p>	<p>Tian, F., Yang, W., Mordes, D. A., Wang, J. Y., Salameh, J. S., Mok, J., ... & Suzuki, N.</p>	<p>SRS</p>	<p>picoEmerald together with an Olympus BX61WI / FV300 upright microscope</p>
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