FACILE, EXCITATION-BASED SPECTRAL MICROSCOPY FOR FAST MULTICOLOR IMAGING AND QUANTITATIVE BIOSENSING

Tech ID: 32240 / UC Case 2021-085-0

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20240085328	03/14/2024	2021-085

BRIEF DESCRIPTION

The number of color channels that can be concurrently probed in fluorescence microscopy is severely limited by the broad fluorescence spectral width. Spectral imaging offers potential solutions, yet typical approaches to disperse the local emission spectra notably impede the attainable throughput.

UC Berkeley researchers have discovered methods and systems for simultaneously imaging up to 6 subcellular targets, labeled by common fluorophores of substantial spectral overlap, in live cells at low (~1%) crosstalks and high temporal resolutions (down to ~10 ms), using a single, fixed fluorescence emission detection band.

SUGGESTED USES

spectral microscopy of highly multiplexed fluorescence imaging

ADVANTAGES

The ability to quantify the abundances of different fluorophores in the same sample through unmixing the excitation spectra enables us to devise quantitative imaging schemes for both bi-state and FRET fluorescent biosensors in live cells.

Achieve high sensitivities and spatiotemporal resolutions

ADDITIONAL TECHNOLOGIES BY THESE INVENTORS

- Superresolution Microscopy And Ultrahigh-Throughput Spectroscopy
- SpeedyTrack: Microsecond Wide-field Single-molecule Tracking
- Direct Optical Visualization Of Graphene On Transparent Substrates

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OTHER INFORMATION

CATEGORIZED AS

» **Imaging**
» Molecular
» **Materials & Chemicals**
» Chemicals
» **Medical**
» Imaging
» **Research Tools**
» Reagents

RELATED CASES

2021-085-0