Room 406AB: Monday, February 17

12:30 PM – 2:00 PM
Leica Microsystems

Advances in Label-Free Chemical Imaging with Stimulated Raman Scattering Microscopy
The application space of stimulated Raman scattering (SRS) microscopy in life sciences research continues to expand rapidly. Ongoing advances in laser technology are resulting in dramatic increases in acquisition speeds, particularly for multi-color or hyperspectral datasets, facilitating the generation of statistically relevant label-free image datasets.

Here, we present the STELLARIS CRS – Leica's turnkey Coherent Raman Scattering system. It offers the two popular CRS modalities – Stimulated Raman Scattering (SRS) and Coherent Anti-Stokes Raman Scattering (CARS) – and allows for the simultaneous acquisition of two-photon fluorescence and second-harmonic generation signals. Importantly, the seamless integration of CRS with the STELLARIS visible confocal fluorescence microscopy platform, as well as Fluorescence Lifetime Imaging, results in a multi-modal optical discovery instrument capable of capturing a unique combination of biochemical, biophysical and molecular contrasts.

We will present a range of new applications of SRS microscopy that capitalize on these advances. We highlight new capacities in label-free, multi-modal metabolic profiling at the single-cell level, as well as high-speed, multi-color, label-free chemical imaging of dynamic biological processes. Our results emphasize the growing ease-of-use of SRS microscopy, and its capacity to contribute to an even deeper understanding of cell and tissue biology, serving as a powerful new tool for a wide range of research in the life sciences.

Speakers
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