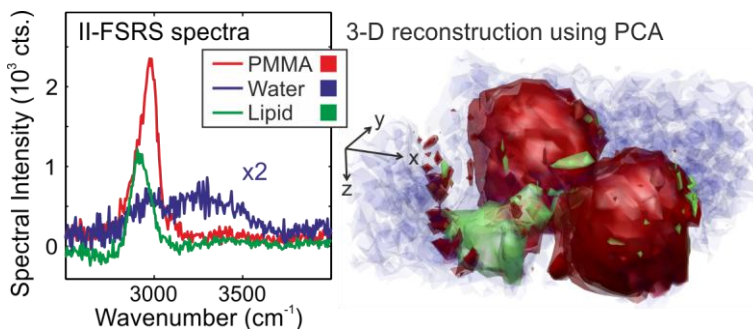


## O5 (program reference number) In-Line Interferometric Femtosecond Stimulated Raman Scattering for Hyperspectral Imaging.

Sven Dobner<sup>1</sup> and C. Fallnich<sup>1</sup>

<sup>1</sup>*Institute of Applied Physics, University of Münster, Germany*

We present the hyperspectral imaging capabilities of in-line interferometric femtosecond stimulated Raman scattering (II-FSRS [1]). This interferometric approach to FSRS results in an improved signal-to-background ratio compared to other applicable broadband stimulated Raman scattering methods. The in-line interferometer allows a simple experimental implementation and results in a rather fast acquisition of three-dimensional raster-scanned hyperspectral datasets. The figure below shows retrieved II-FSRS spectra for three different constituents of a sample, namely PMMA, water and canola oil (lipid). The application of a principle component analysis (PCA) to the hyperspectral dataset displays the chemical selectivity of the method and enables a volumetric reconstruction of the sample [2].



[1] S. Dobner, P. Groß, and C. Fallnich, *J. Chem. Phys.* **138**, (2013).

[2] S. Dobner and C. Fallnich, accepted for *J. Chem. Phys.* **140**, (2014).

This space will be reserved for notes and will take up the lowest part of the page.

---

---