Electronic Supplementary Material (ESI) for Analyst.

Supplementary information

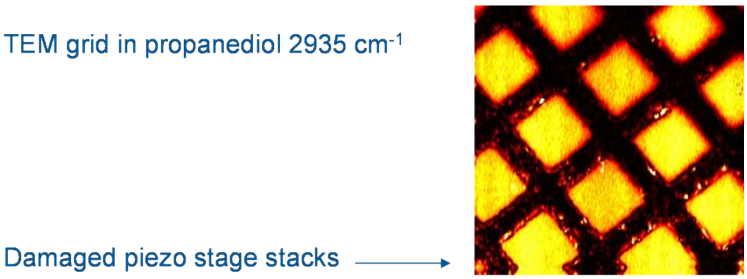

Figure S 1: SRS image of propanediol within a TEM grid at 2935 cm^{-1} (dimensions 50 μm x 50 μm), revealing some irregularity in the stage scanning due to piezo stage damage.

Information to be optimised and recorded

Sample preparation and parameters

- Sample preparation methods, thickness, storage conditions and any prior analysis.
- Details of the substrate used e.g. glass coverslip type and thickness.
- Relevant environmental conditions such as temperature and humidity
- Any visible damage to the sample (e.g. before vs after analysis, consider presence of pigments or strong absorbers that may make the sample more vulnerable to damage).

Laser alignment and power

- Temporal overlap of the beams optimised?
- Spatial overlap of the beams optimised?
- Laser power at the sample for the pump (for the required wavenumbers) and Stokes beams

Focusing lenses

- Objective lens magnification and NA
- Condenser lens magnification and NA
- Has the position of the condenser been optimised?
- Medium for the objective lens (air, water, oil etc)
- Medium for the condenser lens
- Check the objective lens correction ring is optimised to the correct thickness of coverslip/dish etc.

Detection

- Detector gains
- Phase of the lock-in amplifier
- Sensitivity settings of the lock-in amplifier
- Lock-in amplifier gain off-set settings
- details of any filters used

Image acquisition parameters

- Wavenumbers targeted
- Image size (number of pixels)
- Field of view dimensions (including details of any zoom factor applied)
- Pixel dwell time
- Line or frame averaging/accumulations
- Details of depth stack acquisitions (i.e. depth increments, consider sampling intervals based on axial resolution to avoid over-sampling).
- Details of wavelength scanning (lambda scans) wavelength increments to the pump beam.