

Abstract Submitted
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Applications of Low Frequency Raman Spectroscopy on Amino Acid Crystals¹ MING CHE LEE, ZHENHUAN YI, ALEXEI. V. SOKOLOV, MARLAN. O. SCULLY, Texas AM University — h
-abstract- Both Stokes and anti-Stokes Raman spectra at low frequency (<200 cm⁻¹ range, LF) can be relatively easily accessed with the help of volume Bragg filters. We presented two applications of these spectra from amino acid (AA) crystals. We first used the peak ratio between Stokes and anti-Stokes signal to obtain the local temperature of a sample. Second, due to the distinct intermolecular interactions in AA crystals, vibration modes such as hydrogen bond stretching and shear modes can be easily distinguished with LF Raman. Second, We examined the LF-Raman mapping on different surfaces of crystallized L-alanine. The mapping shows strong dependence on relative orientations between the polarization of the probe light and the orientations of the AA crystals. By changing the polarization of probe light, we were able to differentiate surfaces on the crystals through the analysis of LF-Raman mapping. To conclude, LF-Raman mapping provides an efficient way to identify the orientation of micro AA crystals. -/abstract-

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