176. Title: Applying broadband terahertz time-domain spectroscopy to the analysis of crystalline proteins: a dehydration study

Author: Tych, KM; Burnett, AD; Wood, CD; Cunningham, JE; Pearson, AR; Davies, AG; Linfield, EH

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Abstract: The application of terahertz time-domain spectroscopy and imaging to the study of proteins in crystalline form is demonstrated. Terahertz time-domain spectroscopy is particularly sensitive to the long-range ordering of molecules, with proven utility for the spectroscopy of crystalline biological small molecules. Here, the terahertz time-domain absorption response of a macromolecular protein single crystal is investigated for the first time. In particular, the effect of dehydration on the terahertz absorption coefficient of tetragonal hen egg white lysozyme crystals is reported.