

Abstract Submitted  
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**A temperature-dependent study of the low-frequency vibrational excitations in polynucleotides in solution** KRISTINA WOODS, Carnegie Mellon University, SCOTT LEE, Un. of Toledo — Far-infrared spectroscopy is a useful probe of low-frequency collective excitations of biomolecules, including DNA. These vibrational modes are believed to be related to conformational changes that occur in these molecules during their biological function and, therefore, are very important to study. In order to further our understanding of these modes, THz spectroscopy experiments were performed on solutions of polynucleotides between 20 to 100  $\text{cm}^{-1}$  from room temperature to 90  $^{\circ}\text{C}$ , covering the premelting and melting regimes. The samples studied include Poly(dA-dT), Poly(dA)-Poly(dT), Poly(dI-dC) and Poly(dI)-Poly(dC). Of particular interest, the intensity of a band at about 67  $\text{cm}^{-1}$  is observed to increase as the melting proceeds.

Scott Lee  
Un. of Toledo

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