





because taking samples from museum objects is often contentious.

Pure synthetic polymers produce spectra with sharp vibrational bands which are readily identifiable. Semi-synthetic and naturally occurring polymers often give rise to FTIR spectra whose bands are generally broader than those found in completely synthetic polymers. This may be due to the presence of both crystalline and amorphous regions in the materials. In any sample where hydrogen bonding occurs, the number and strength of intermolecular interactions varies greatly within the sample, causing the spectral bands to be particularly broad. The infrared spectrum of a complex mixture also gives so many absorption bands that these oft