

Supplementary Materials: Infrared Imaging of Cotton Fiber Bundles Using a Focal Plane Array Detector and a Single Reflectance Accessory †

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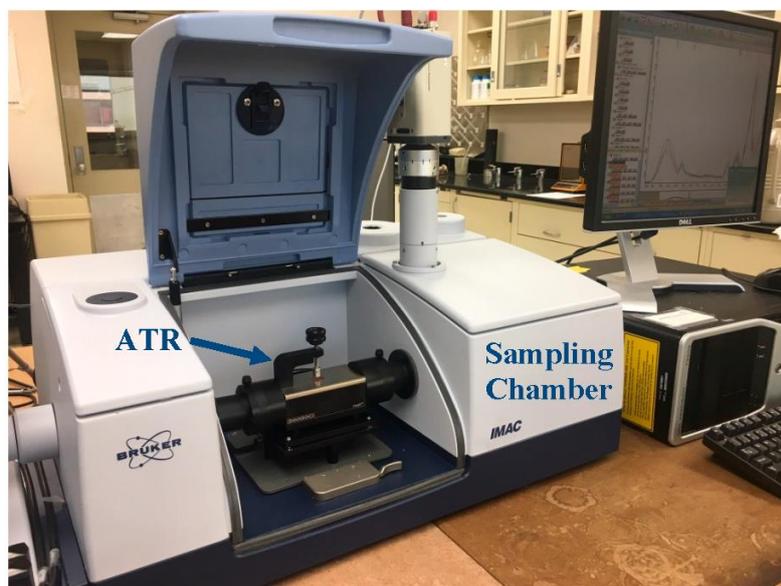


Figure S1. Instrumental setup described in the material section, a Bruker IMAC sampling Chamber equipped with a single reflectance attenuated total reflection (ATR) unit. The Focal Plane Array Detector is not visible.

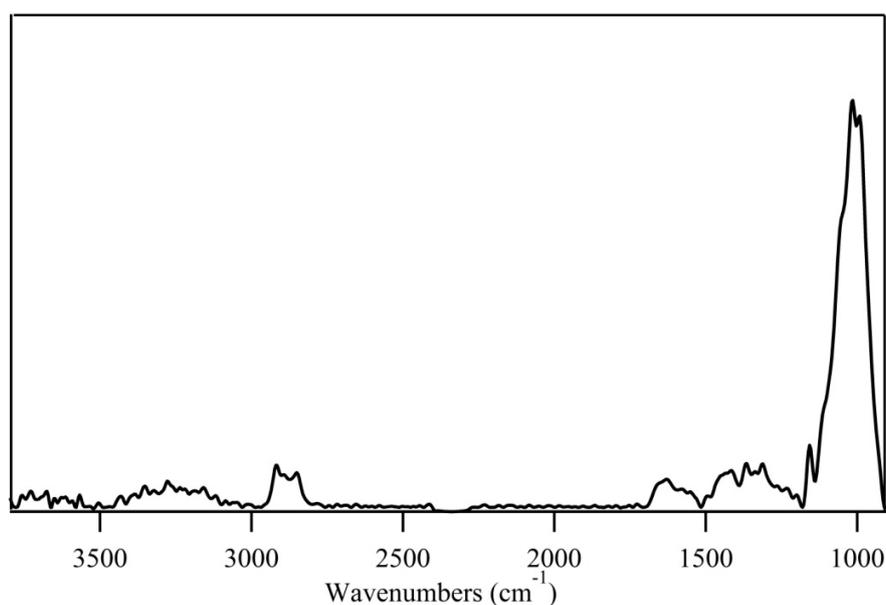


Figure S2. Infrared spectrum of a rayon fabric as collected with an ATR and focal plane array (FPA) system.

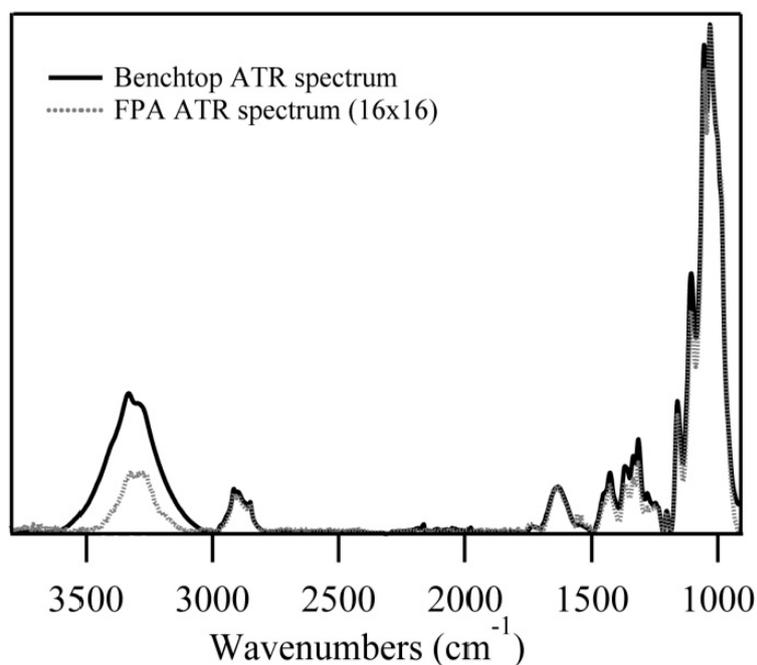


Figure S3. Infrared spectrum of a cotton fiber bundle as collected with a benchtop ATR (solid black line) and the ATR and FPA system (grey dashed line).

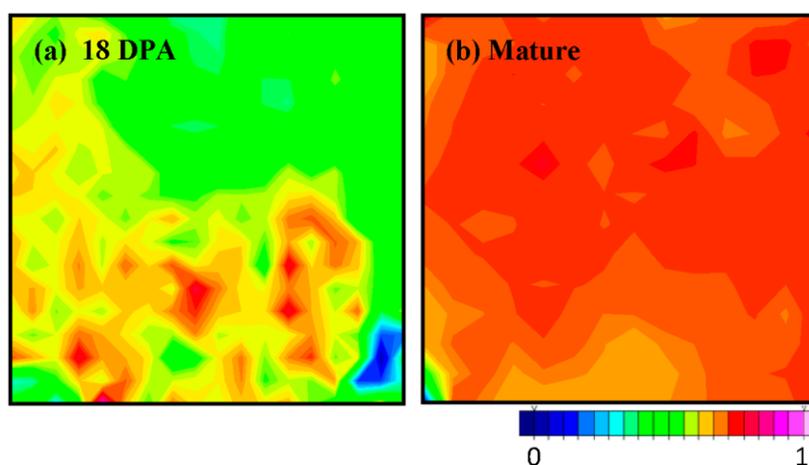


Figure S4. Chemical images (IR distribution map) for a cotton fiber bundle at two developmental points are shown: (a) 18 DPA and (b) mature (60+ DPA). The chemical distribution map was produced with a FTIR instrument equipped with a single reflection ATR accessory and a FPA Mid-IR detector. Spectral data was grouped into defined 8×8 pixel areas and normalized to the 1028 cm^{-1} . Map tones reflect the integration intensity of the C–O shoulder band near 986 cm^{-1} . Red and pink tones correspond to high intensity integrations, while dark blue color corresponds to integrations near zero.

