

# **Characterization of Cellulose and Chitin Thin Films and Their Interactions with Bio-based Polymers**

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Dissertation submitted to the faculty of the  
Virginia Polytechnic Institute and State University  
in fulfillment of the requirements for

**Doctor of Philosophy**  
**in**  
**Chemistry**

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Equilibrium Water Contents of Cellulose Films Determined via Solvent Exchange and Quartz Crystal Microbalance with Dissipation Monitoring

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Ultrathin Chitin Films for Nanocomposites and Biosensors

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