

# Mechanical tuneability via water-induced H-bond change in sustainable soft materials

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Water is present in many soft matters in our daily lives, and affects their many properties, among others the morphology and mechanical properties. Either in hydrogel or in membranes/films of hydrophilic compounds, water will strongly affect these aspects of materials via alternative absorption and desorption steps. Using native compounds for the construction of soft materials, such as cellulose or nanocellulose derivatives, their mechanical properties are found to be strongly affected by water absorption and desorption, which in turn is mediated by H-bond change. By using dynamic mechanical analysis in combination with dynamic vapor sorption and spectroscopic methods, correlations between mechanical properties and water sorption/desorption as well as induced H-bond changes for certain materials are intended to be established.

## Keywords

## This abstract is submitted for....

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