

Abstract Submitted  
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**Van der Waal Interactions in Ultrafine Nanocellulose Aerogels<sup>1</sup>**

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— Nanocellulose aerogels have shown an ability to be used in many different applications ranging from oil sponges to conductive materials to possibly a low calorie food substitute. Not much is known about the structural and physical property changes that occur when the composition of the aerogel changes. We studied what properties change when the aerogel amounts change, as well as how sticky the aerogels are and how strong they are. The higher concentrations appeared to have more plate-like structures while the lower concentrations had a more fibrous material. These fibers in the low concentrations had a smaller diameter than a human hair. Only the low concentration aerogels were able to stick to a glass surface in the adhesion test, but were able to support a mass much larger than their own. These low concentrations also would stick to your finger when lightly touched. Preliminary tests show that a concentration that is not too low, but not too high, is best for tensile strength. All concentrations were able to hold many times their own mass. Cellulose should be studied more because it is a renewable material and is easily accessed. Nanocellulose is also not environmentally dangerous allowing it to be used in applications involving humans and the environment like noted above.

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