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Development of freestanding CNF films to support ultrathin nanomaterial membranes

Air conditioning is projected to become an ever-increasing burden on energy resources. Single layer graphene oxide membranes can reduce the energy use of air conditioning by up to 30% with pre-dehumidification systems. Current membranes are not strong enough for real world application. Thus there is a need for nanostructured supports that are cheap, flexible, strong, and permeable to water vapor. The purpose of this project is to use cellulose nanofibers to create the required supports.