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Highly Porous Regenerated Cellulose Fiber Mats via the Co-Forcespinning of Cellulose Acetate for Separator Applications ALEJANDRO CASTILLO, YUANBING MAO, University of Texas Pan-American Chemistry — Improvements in battery technology are necessary for the transition away from a fossil fuel based economy. An important bottle-neck in battery efficiency is the quality of the separator, which separates the cathode and anode to prevent a short-circuit while still allowing the ions in solution to flow as close to unabated as possible. In this work solutions of cellulose acetate, polyvinyldiflourine (pvdf), and polyvinylpyrrolidone (pvp) dissolved in a 2:1 v/v acetone/dimethylacetamide solvent mixture were Forcespun to create nonwoven fiber mats of nanoscale diameter. These mats were then soaked in a NaOH solution so as to both strip the pvp from the fiber as well as regenerate cellulose from its acetate derivative for the purpose of creating high surface area, nanoporous, hydrophilic, and ioniclly conductive cellulose/pvdf nonwoven mats for the purposes of testing their suitability as battery separators

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