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(54) Title: METHOD, APPRATUS, AND SYSTEM OF A FIBRILLATED NANOCELLULOSE MATERIAL

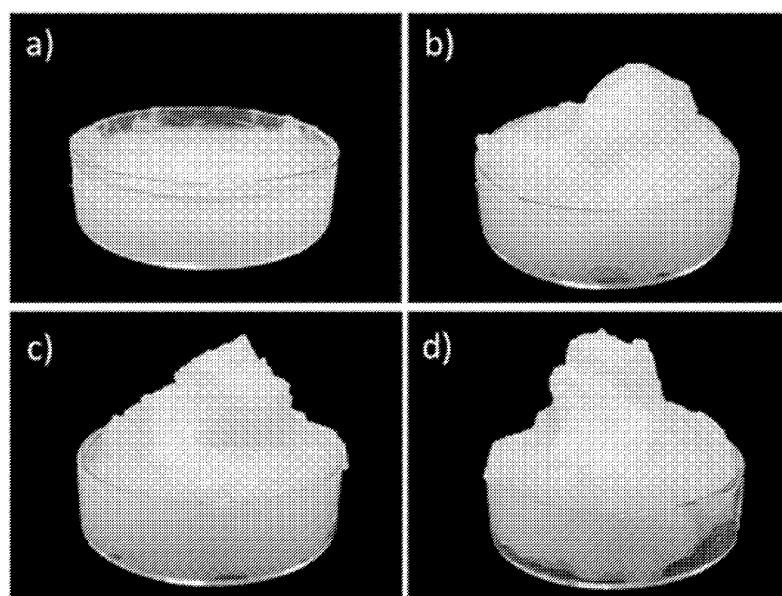


FIG. 1

(57) Abstract: Methods, apparatus, and system of a fibrillated nanocellulose material overcome shortcomings of prior technologies by infusing nanocellulose in a fibrillated form to enhance the properties of cellulose pulp. These properties may include, for example, the mechanical and barrier properties, i.e., tensile strength, liquid, and gas impermeability such as oxygen, carbon dioxide, and oil, may be improved substantially. It also provides a fibrillated cellulose composite material that include properties of being a strength-enhancing agent, an oligomer, carboxylic acid, plasticizer, an antimicrobial agent, water repellant, and or a transparent composite.

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