

Fabrication of cellulose nanofiber (CNF) from agar of Jeju island using grinding process by a disk grinder

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Abstract

Cellulose is an organic compound that forms the main structural component of plant cell walls. In this study, extraction of CNF (cellulose nanofiber) from agar and morphological changes of CNF affected by passes grinding process were determined. The agar samples were separated and bleached, then CNF grinding process performed by passing the distance between grindstones 150 μ m, revolving at approximately 1500rpm in the disk grinder. The results were systematically analyzed using a field emission scanning electron microscopy (FESEM), and a particle size analyzer (PSA). The CNFs were significantly different from cellulose materials by decreasing to nanometer scale using a disk grinder with increasing experimental passes.

Keywords: Cellulose nanofiber, Agar, Disk grinding process