Influence of amino silane-modified nanocellulose on the physico-chemical and mechanical properties of alginate films

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Supplementary

Table S1: FTIR spectrum for extraction of nanocellulose from coir fibers corresponding to

Wavenumber (cm^{-1})	Assignment
3341	-OH str
2913	-CH str
1646	-C=O str
1722,1504	ring stretching vibration of aromatic C-C in lignin
1164	-C-O-C assym str
1029	-C-O-C str (skeletal vibration of pyranose rings)
1425	-C=C str
776	-C-O-C bending
898	-C-H rocking vibrations
1362	-CH deformation of aromatic rings of lignin complex

Table S2: FTIR spectrum for modification of nanocellulose by APTES

Band (cm^{-1})	Assignment
1636	-C=O str
1562	-NH bending
1371	-CH bending
565	-C-C bending
1029	-C-O-C str (skeletal vibration of pyranose rings)
1314	-CH deformation

Table S3: Extraction of nanocellulose XRD: diffractogram after each treatment process

Treatment process	2θ value
Raw coir	21.4, 39.4
Alkali treated process	22.8
Bleaching	22.3, 16.4
Acid hydrolysed fibers	22.8, 16.1, 28.82

Table S4: APCNF-incorporated alginate films

Band (cm^{-1})	Assignment
3311	-OH str
2917	-CH str
1598	-C-O-O assym
1409	-C-O-O sym
1027	-C-O-C sym str