

Supporting Information

Synthesis of water resistance and moisture-permeable nanofiber using sodium alginate–functionalized waterborne polyurethane

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Table S1. The composition of WPU/SA blends

Code⁽¹⁾	WPU(wt%)	SA(wt%)
WPU/SA₁₀	90	10
WPU/SA₂₀	80	20
WPU/SA₃₀	70	30
WPU/SA₄₀	60	40
WPU/SA₅₀	50	50

⁽¹⁾ Sample name : WPU and SA blended samples were named WPU/SA_{xx}, and the subscripts xx was the weight percentages of SA. Similarly, the samples of WPU/SA_{xx} blends which crosslinking with calcium chloride were named WPU/CA_{yy}.

Table S2. Water absorption of WPU/CA blends

Code	water absorption ^{1,2}(wt%)
WPU	10.2
CA	139.1
WPU/CA₁₀	25.7
WPU/CA₂₀	26.9
WPU/CA₃₀	37.5
WPU/CA₄₀	57.3
WPU/CA₅₀	82.5

1. Water absorption (wt%) = wet weight - dry weight/dry weight×100

2. All dry films of blends were placed in deionized water of 23 ± 1 °C for 2 hours

Table S3. Moisture permeability of WPU/CA

Code	Moisture permeability (g/m ² -24hr)
WPU	6.2
CA	69.1
WPU/CA ₁₀	19.0
WPU/CA ₂₀	20.0
WPU/CA ₃₀	25.1
WPU/CA ₄₀	31.4
WPU/CA ₅₀	34.7

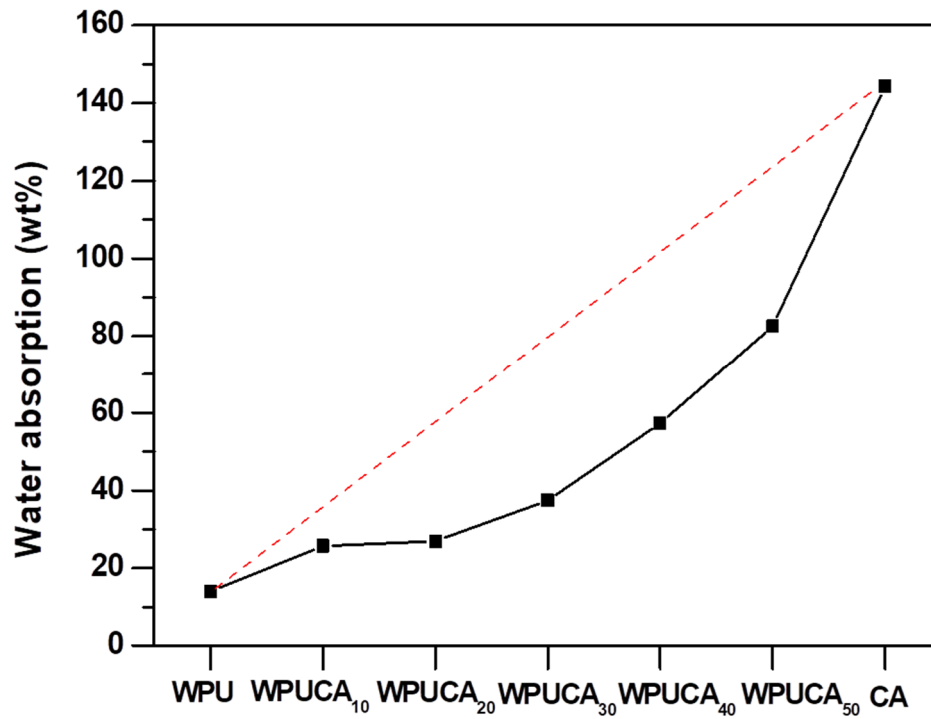


Figure S1. Water absorption during 2hrs of WPU/CA blends

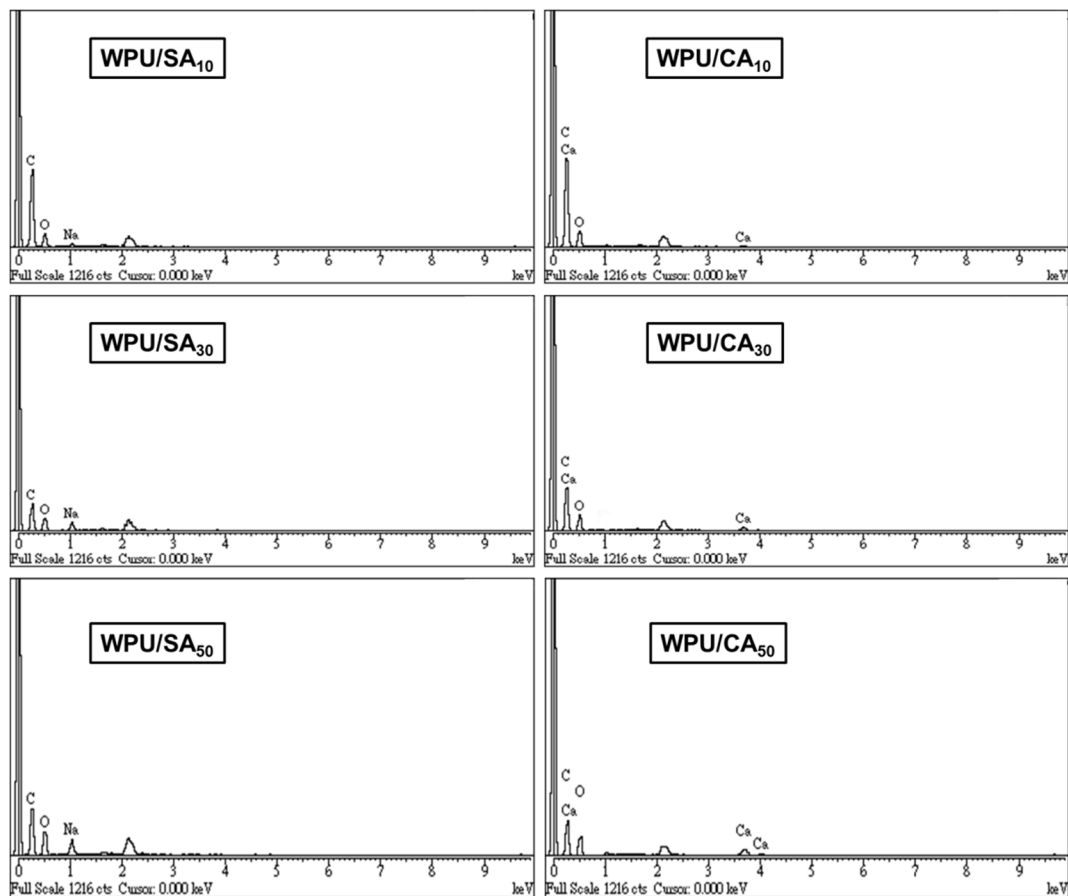


Figure S2. EDS of cross section of WPU/CA blends

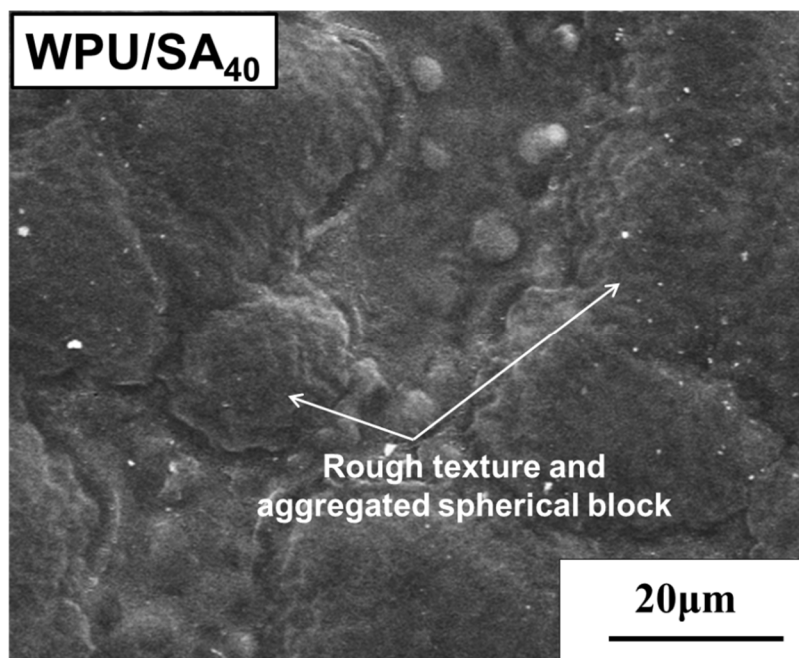


Figure S3. Rough texture and aggregated spherical block of WPU/CA₄₀ SEM Surface morphology

Video S1. A lab experiment was carried out to confirm the moisture permeability of

nanofiber web.