

*Supplementary Information*

**Sequential Oxidation on Wood and its Application in Pb<sup>2+</sup>  
Removal from Water**

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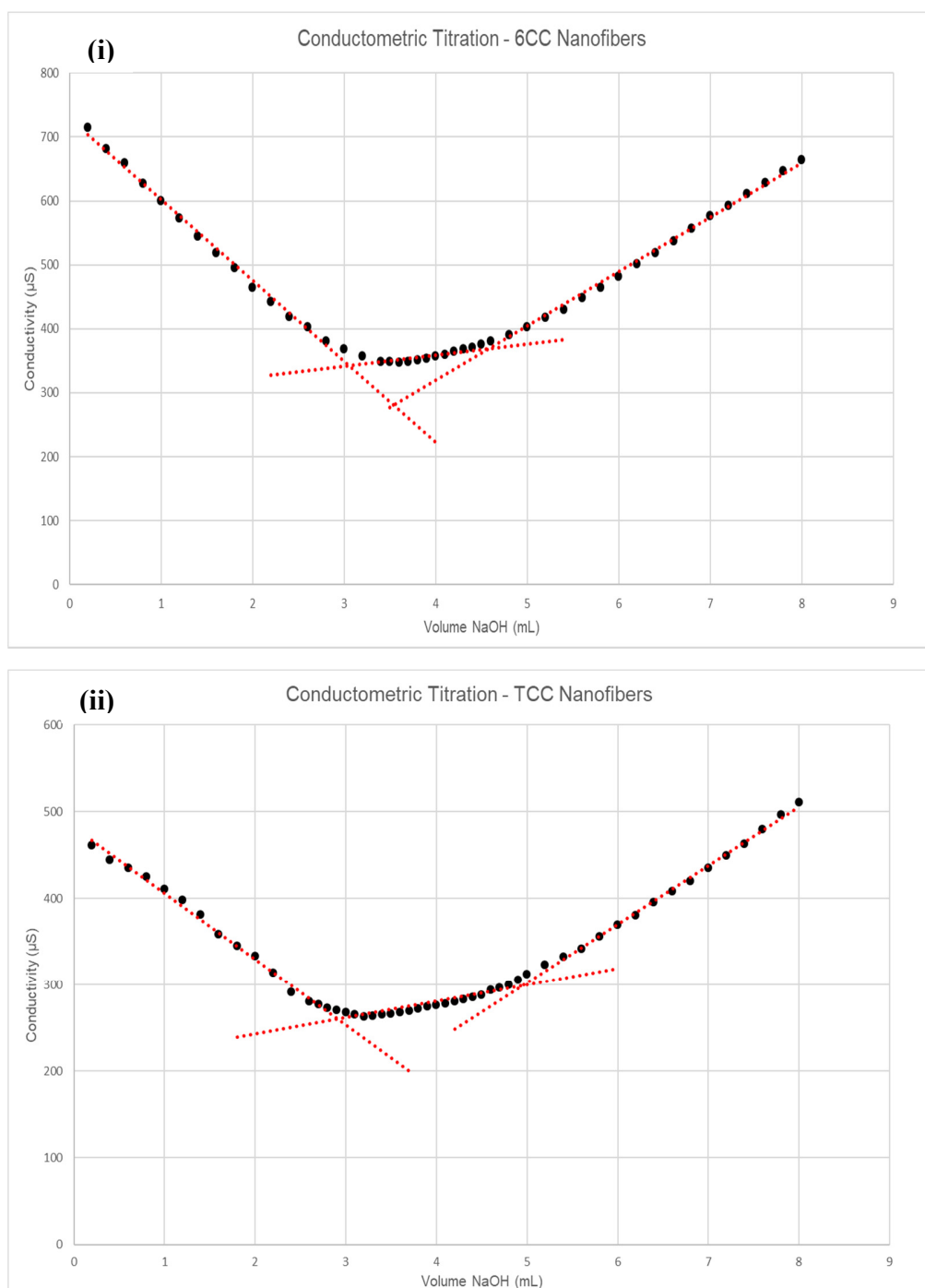
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### ***Conductivity Titration***

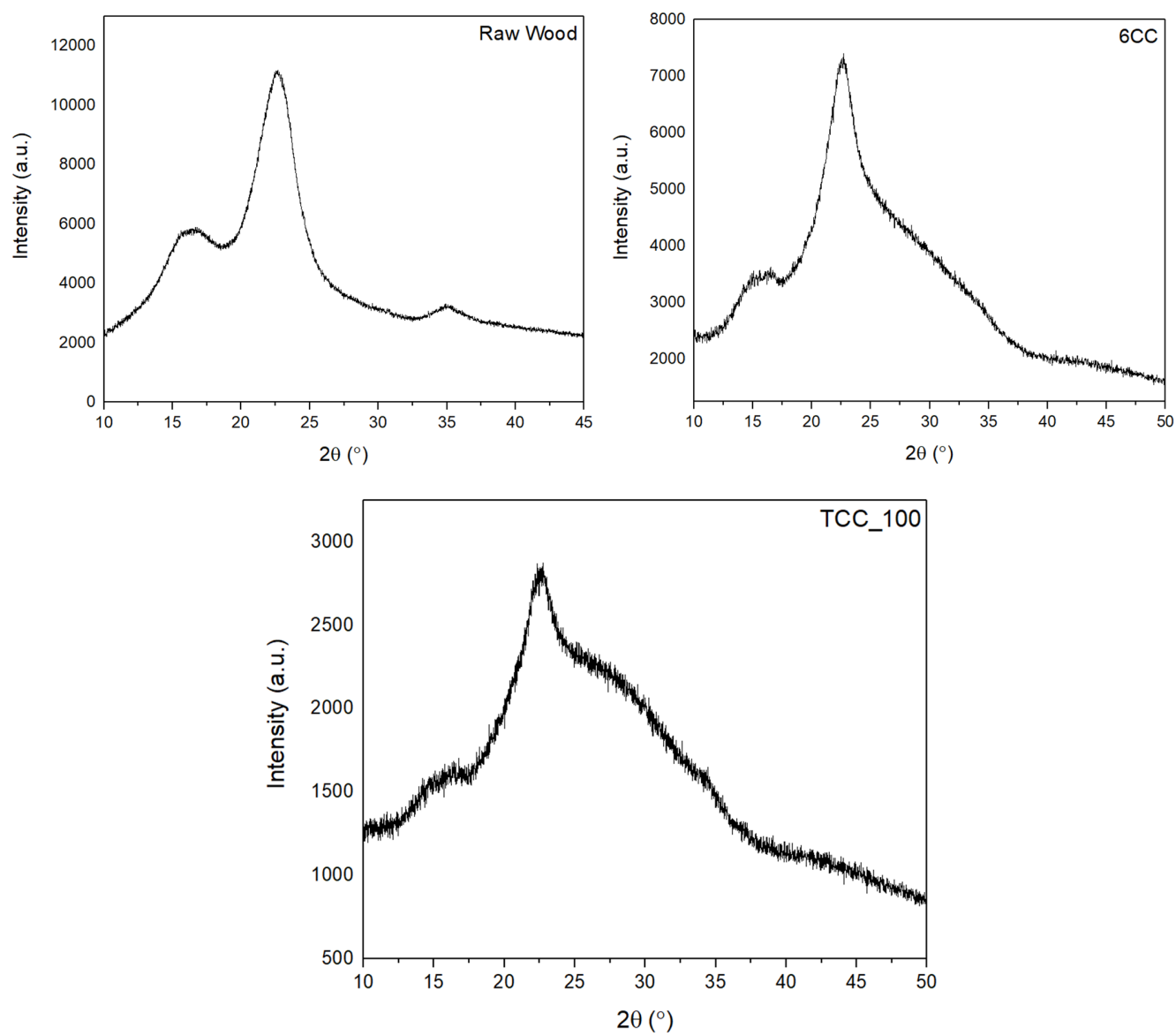
The conductometric titration method was used to determine the approximate carboxylate (-COONa) concentration in the 6CC and TCC nanofibers. More specifically, approximately 50 mg of sample in suspension was calculated, and then the suspension was diluted with water to an overall volume of 100 mL. Then 0.1 M HCl was added to the suspension until the pH was below 3. The suspension was then titrated with 0.4 M NaOH with continuous stirring. The pH and the conductivity of the suspension were monitored throughout the titration with a pH probe and conductivity meter. The conductivity was then plotted against the volume (mL) of NaOH added to the suspension during the titration.

$$\text{Carboxylate content } \left( \frac{\text{mmol}}{\text{g}} \right) = \frac{N \times (V_2 - V_1)}{W} \times 100$$

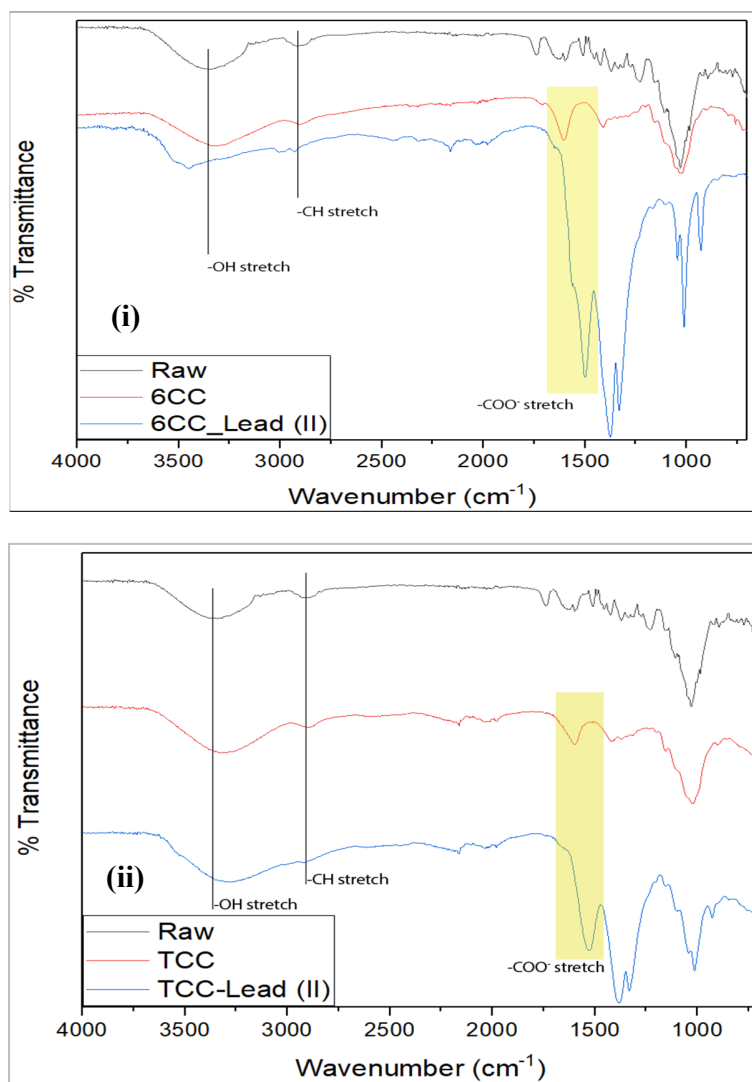
M is the molarity of NaOH,  $V_1$  and  $V_2$  are volumes of NaOH where the inflection points occurred, and  $w$  is the weight of the cellulose (mg) in the suspension.



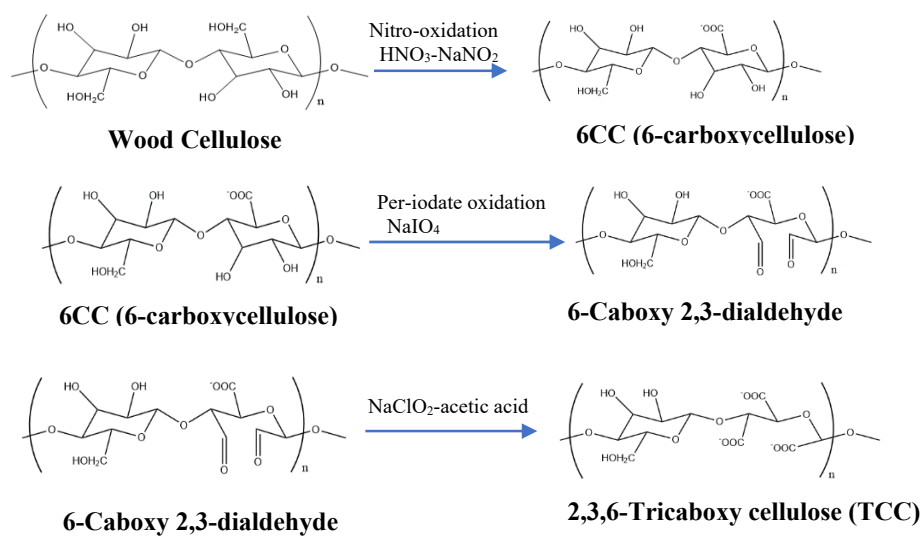
**Figure S1.** Conductometric titration for (i) 6CC, (ii) TCC.



**Figure S2.** WAXD pattern for raw wood, 6CC and TCC.



**Figure S3.** FTIR graph of floc consist of (i)  $\text{Pb}^{2+}$ (250 ppm)@ 6CC, (ii)  $\text{Pb}^{2+}$ (250 ppm)@ TCC.



**Figure S4.** Scheme for preparation of TCC.