

Supplementary Information
 β -Cyclodextrin-functionalized Cellulose Nanocrystals and Their
Interactions with Surfactants

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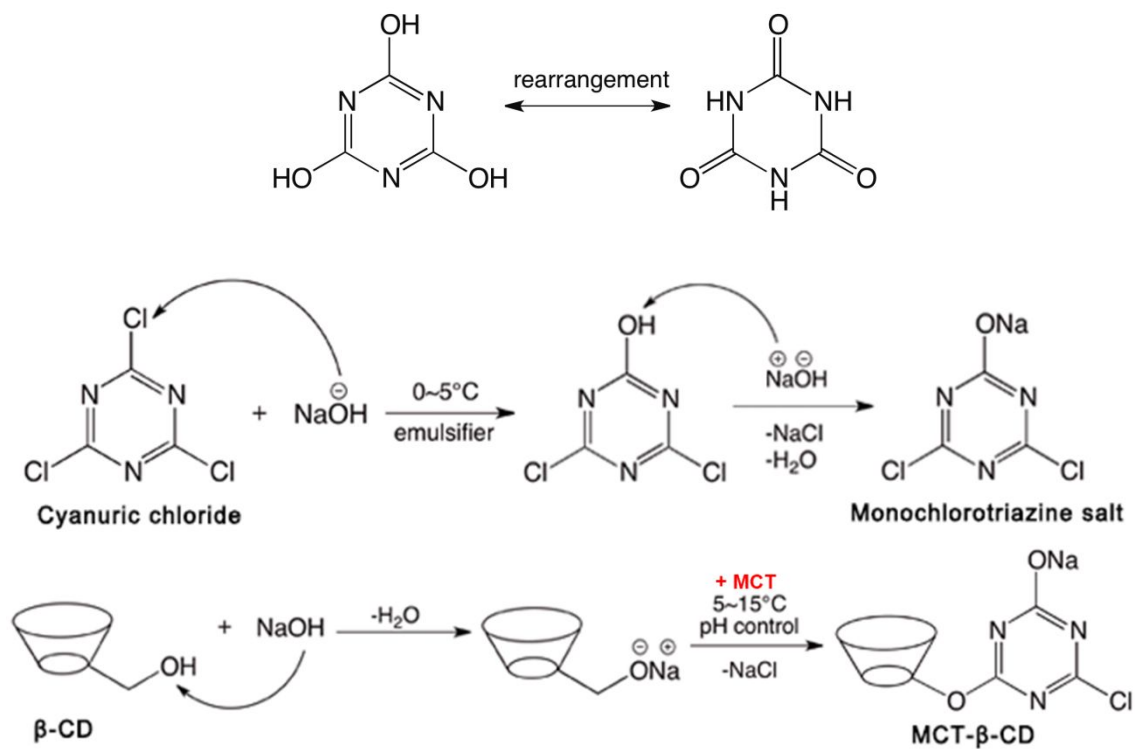
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Synthesis of CNC-CD

0.948g MCT- β -CD was added to 2 wt% of CNC suspension in DMSO. The mixture was stirred and heated at 90°C for 8h under N₂ atmosphere. Unreacted MCT- β -CD was removed by dialysis against water for over 2 weeks.



Scheme S1. Rearrangement of cyanuric acid in aqueous solution and synthesis of MCT- β -CD.

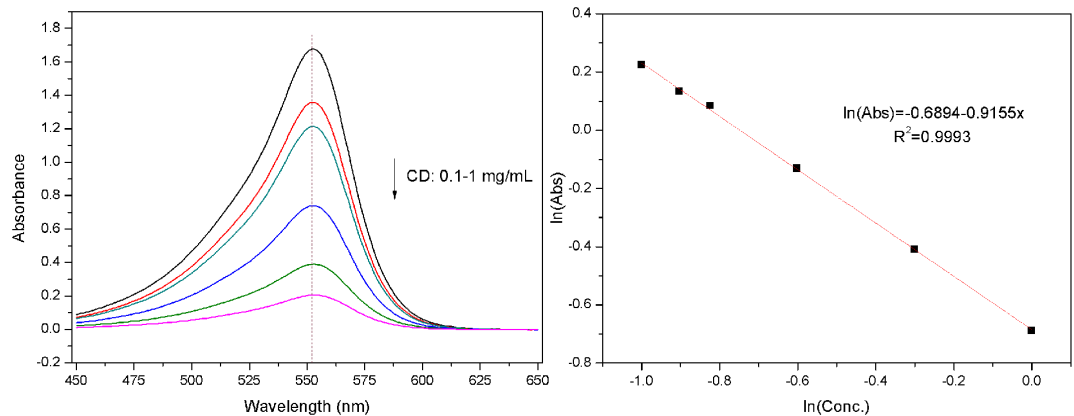


Figure S1. UV absorbance of PHTH/β-CD solutions with increasing β-CD concentrations (left). Calibration curve of absorbance and β-CD concentration (right).



Figure S2. Phenolphthalein solutions with increasing β-CD concentration, where color faded from pink to colorless.

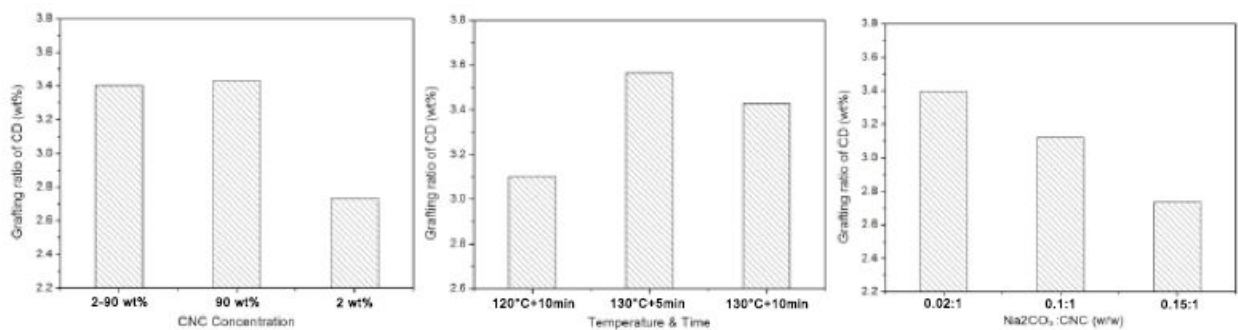


Figure S3. Impact of reaction conditions on the grafting ratio of β-CD: CNC concentration (left), temperature and time (middle), NaCO₃ : CNC ratio (right).

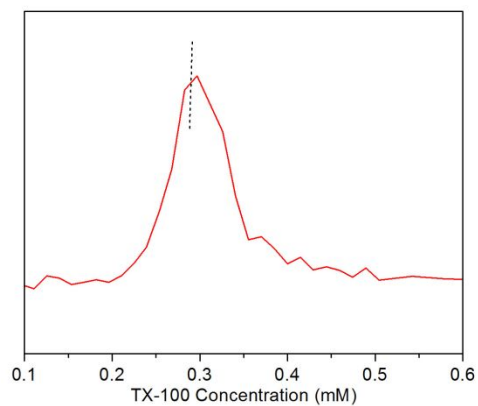


Figure S4. First-order differential curve of TX-100 to water ITC thermogram.

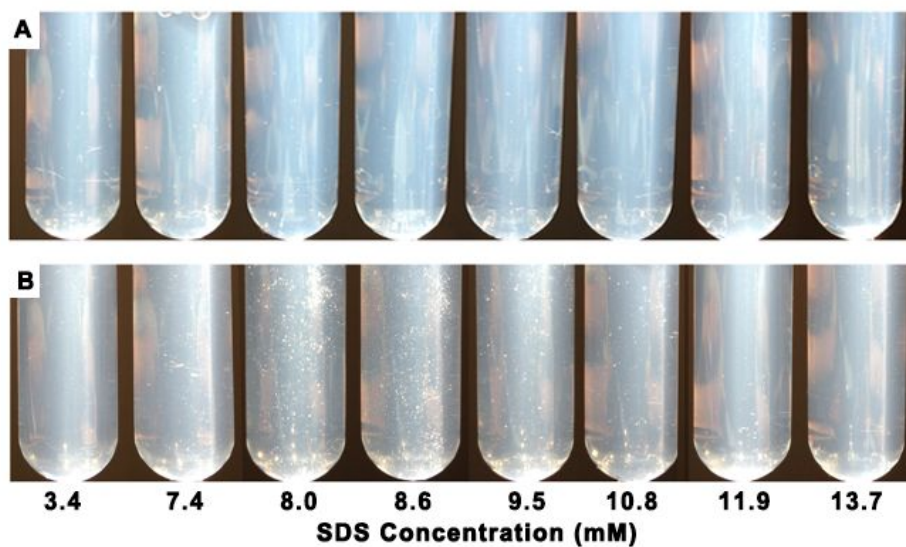


Figure S5. Photos of 0.6 wt% SDS/CNC (A) and SDS/CNC-CD (B) samples with increasing SDS concentration.

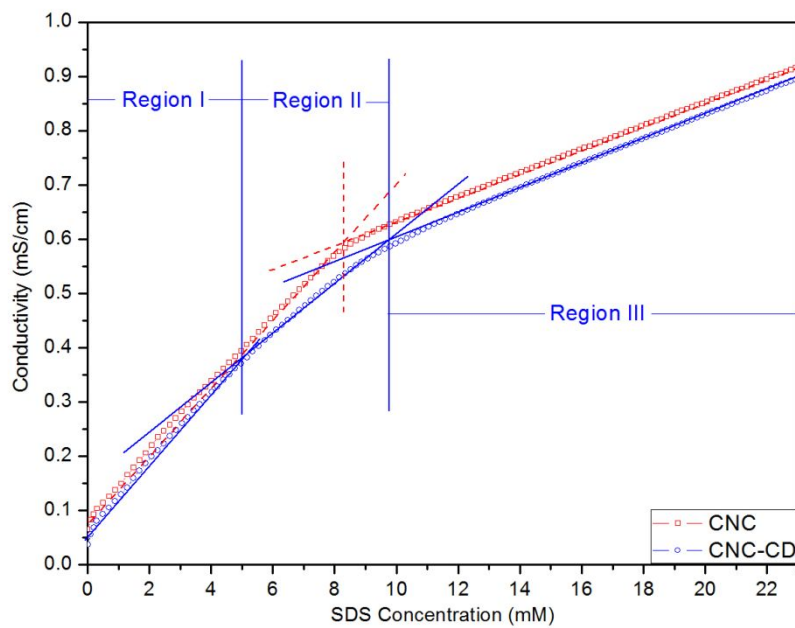


Figure S6. Conductivity of 0.6 wt% CNC and CNC-CD suspensions with increasing SDS concentration at 25°C.

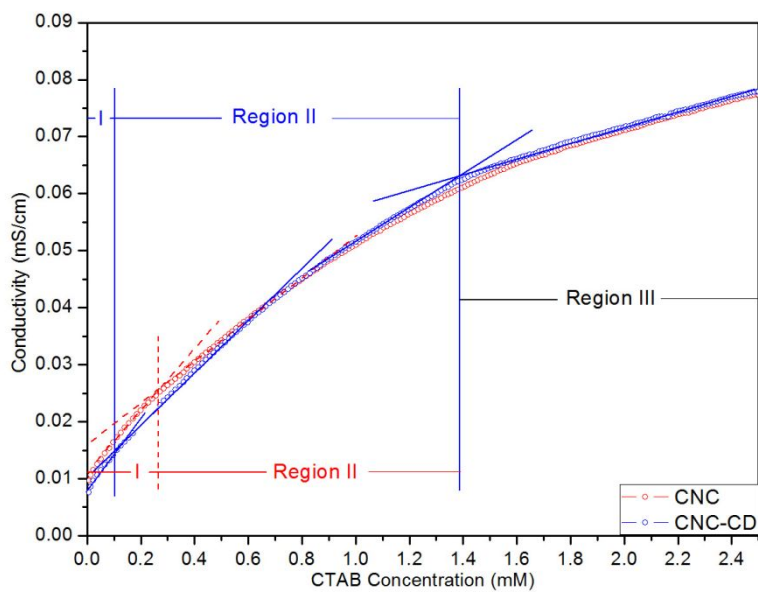


Figure S7. Conductivity of 0.1 wt% CNC and CNC-CD suspensions with increasing CTAB concentration at 28°C.

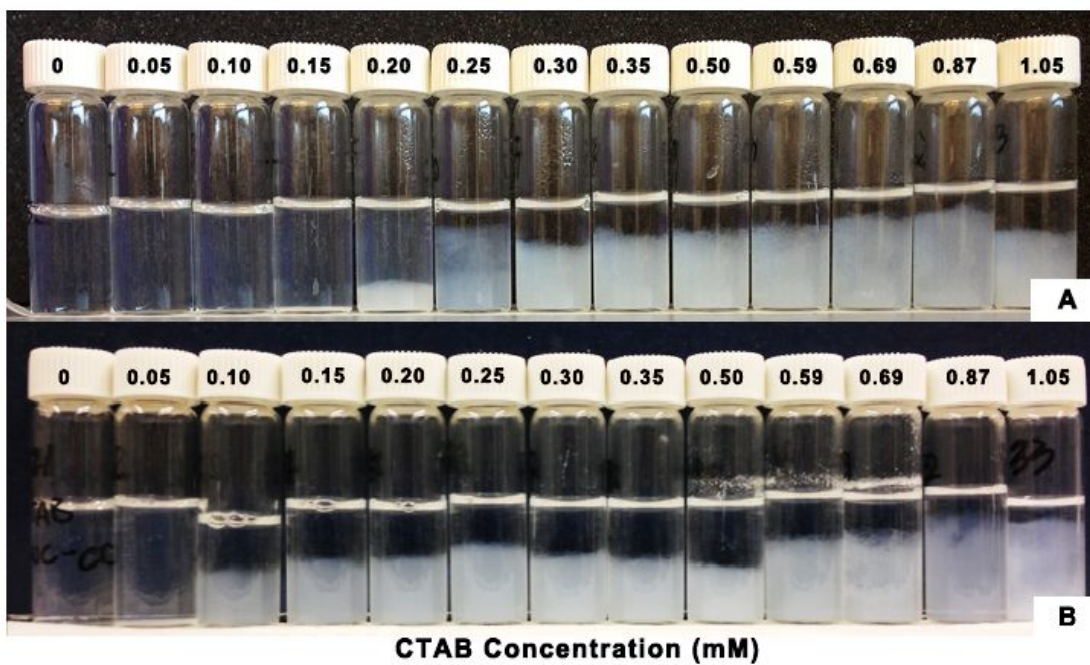


Figure S8. Phase separation of 0.1 wt% CTAB/CNC (A) and CTAB/CNC-CD (B) samples with increasing CTAB concentration.