Supplementary information

## **Zwitterionic Acetylated Cellulose Nanofibrils**

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**Figure S1.** SEM images of a) CNF with x1000 magnification, b) CNF with x10 000 magnification, and c) ACNF-Zwi with x1000 magnification.



Figure S2. AFM images of a) CNF, b) ACNF, and c) ACNF-Zwi.



Figure S3. EDS spectrum of ACNF-Zwi.



Scheme S1. Proposed mechanism for the periodate oxidation of ACNF.



**Scheme S2**. Acid-catalyzed dehydration of the alcohol carbinolamine intermediate in the Schiff base reaction of ACNF-Ox.