## **Supplementary Material**

Fig. S1 - Image of dielectric testing machine.



Fig. S2 - Sketch images of dipoles reorientation under oven-dried condition in the alternating electric field.

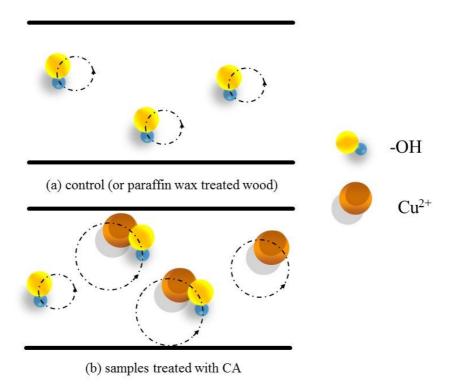


Fig. S3 - Sketch images of dipoles reorientation under air-dried condition in the alternating electric field.

