

Type: **Poster**

Cellulose is the most available, renewable and biodegradable polymer used in applications ranging from traditional productions to new biomaterials. However, the limited solubility of cellulose in common solvents except for environmentally costly solvents hindered applications. Recently, some ionic liquids (ILs) were found able to dissolve cellulose. Together with other techniques, small angle neutron/X-ray scattering can help to understand the molecular behavior for broader application and process optimization.

Furthermore, we also studied the swelling of nanocrystal cellulose at high concentrations, with increasing ionic liquids concentrations, the crystal part deformed and ultimately destroyed to form the chain dissolved in ionic liquids.

The results here presented will contribute to improve the understanding of cellulose chain conformation and to promote their application.

[1] Napso, S.; Rein, D. M.; Khalfin, R.; Cohen, Y. Semidilute Solution Structure of Cellulose in an Ionic Liquid and Its Mixture with a Polar Organic Co-Solvent Studied by Small-Angle X-Ray Scattering. *J. Polym. Sci. Part B: Polym. Phys.* 2017, 55 (11), 888–894. <https://doi.org/10.1002/polb.24337>.

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Session Classification: Poster Session & Discussion with Wine and Cheese