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Epoxidized natural rubber grafting onto - engineered polysaccharide and masterbatching for the fabrication of natural rubber composites

Azin Adibi[1], Leonardo Simon[1], Christian Lenges[2], Tizazu H. Mekonnen[1*]

[1]University of Waterloo, Department of Chemical Engineering, Waterloo, Ontario, Canada

[2]International Flavors & Fragrances Inc. (IFF), 200 Powder Mill Road E353, Wilmington, DE, USA

*Corresponding author(s) – E-mail: tmekonnen@uwaterloo.ca

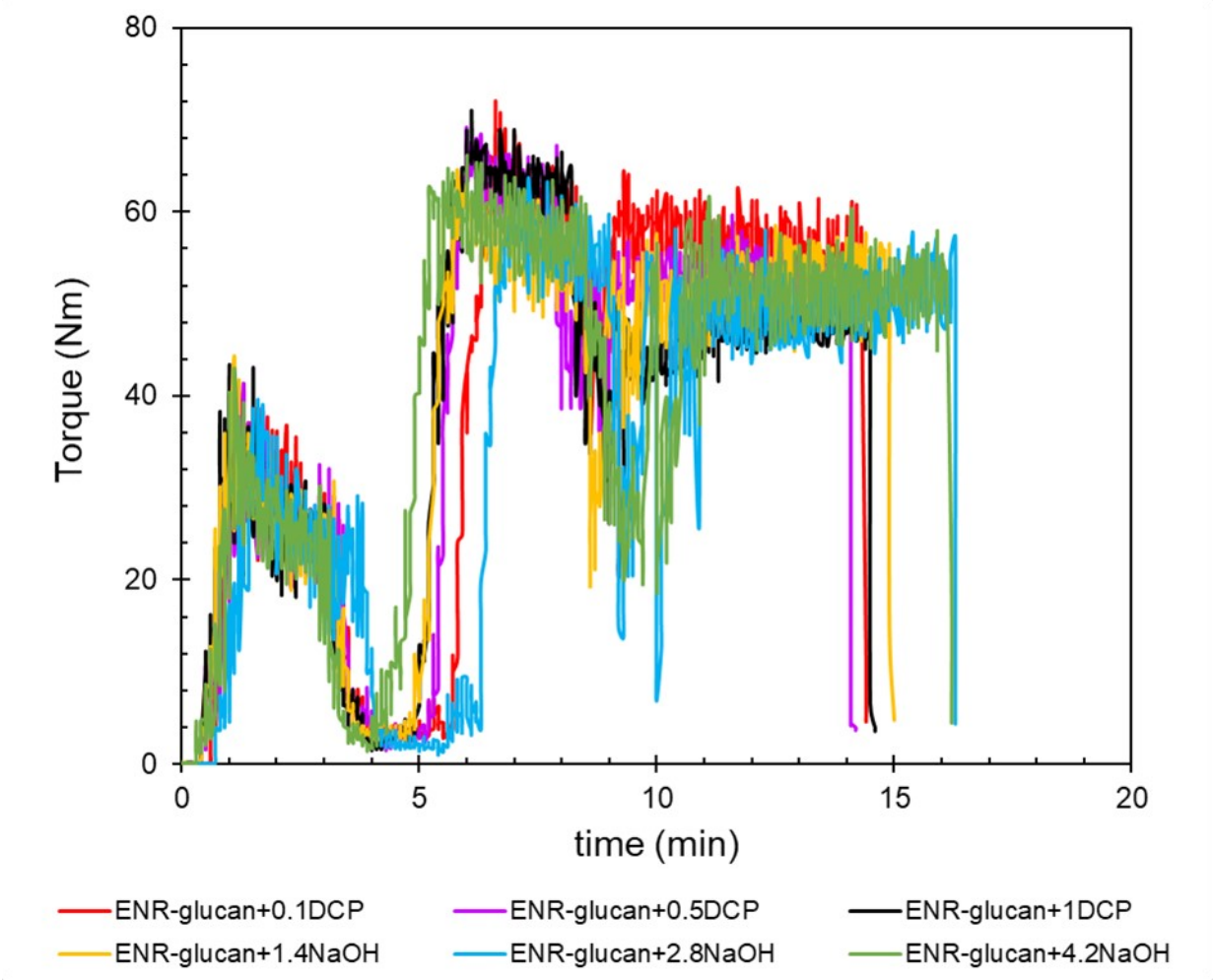

Figure S1. The torque graph of ENR-glucan blends with DCP/NaOH as catalyst.

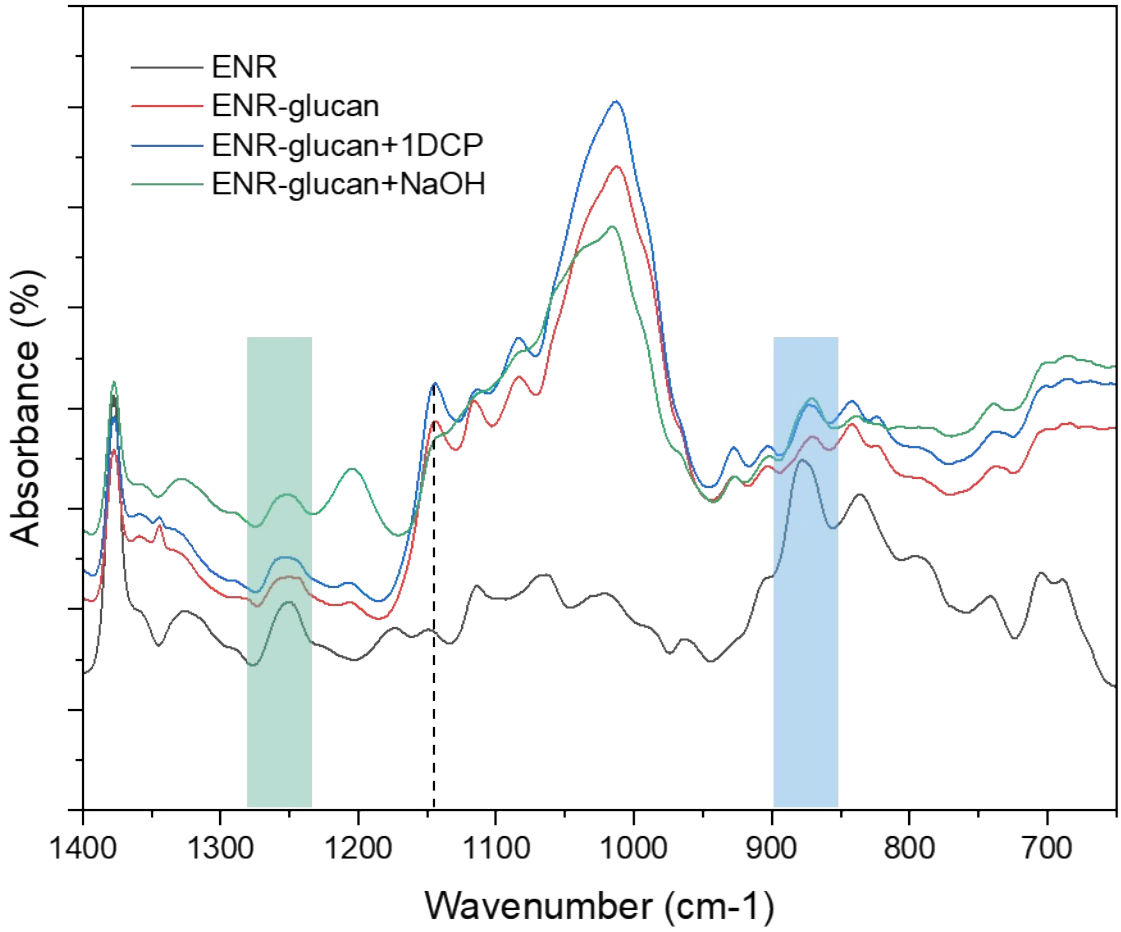

Figure S2. FTIR spectra of neat ENR and ENR-glucan composites in the wavenumber range of 600 to 1400 cm^{-1}

- Utilizing DCP as a catalyst leads to higher torque than NaOH in the batch mixing process, indicating more efficient ring opening of ENR and, subsequently, the formation of covalent bonds among ENR and glucan.

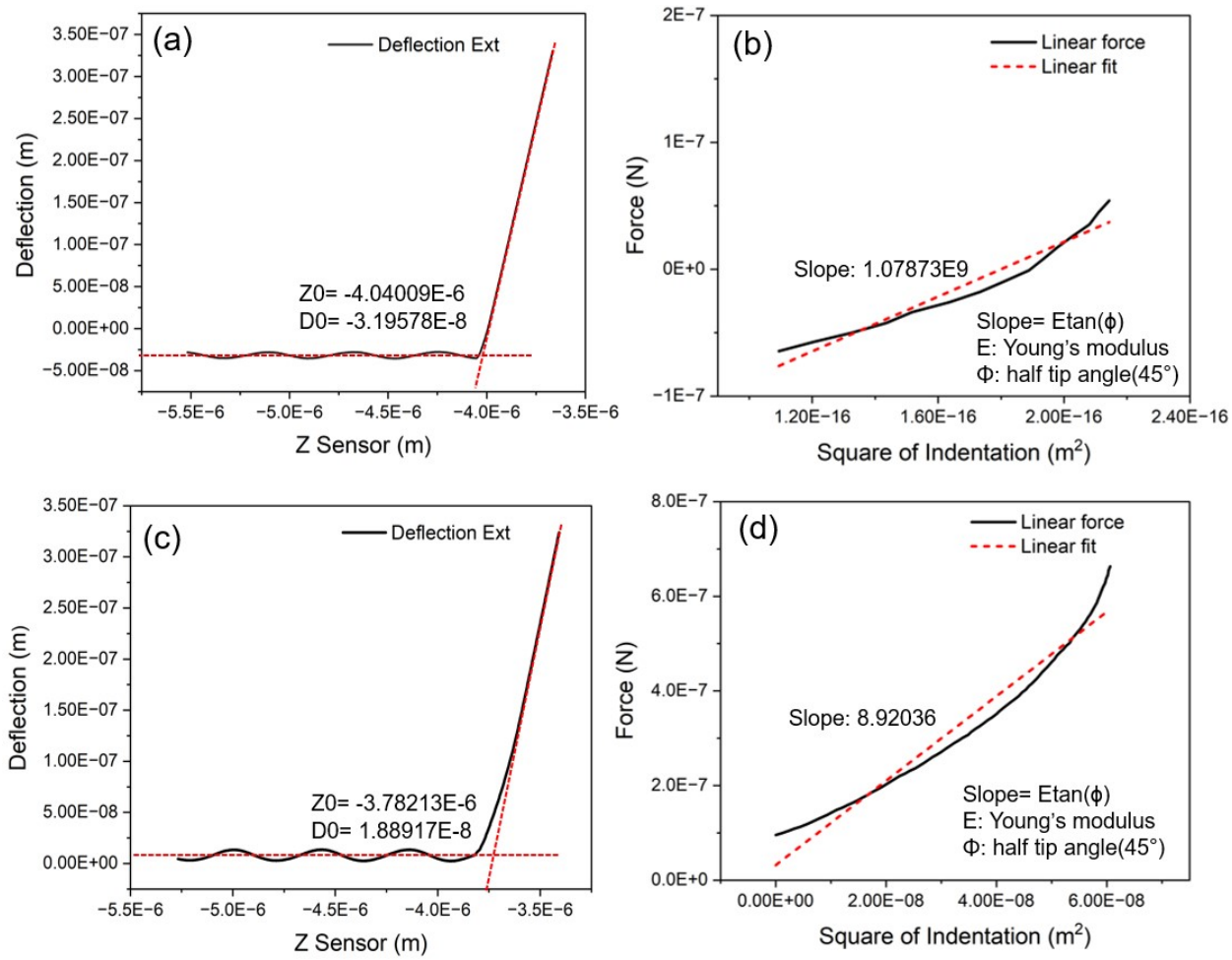

Figure S3. Force curves obtained from nanoindentation analysis of (a),(b) cellulose nanocrystal, and (c),(d) alpha-1,3 glucan.

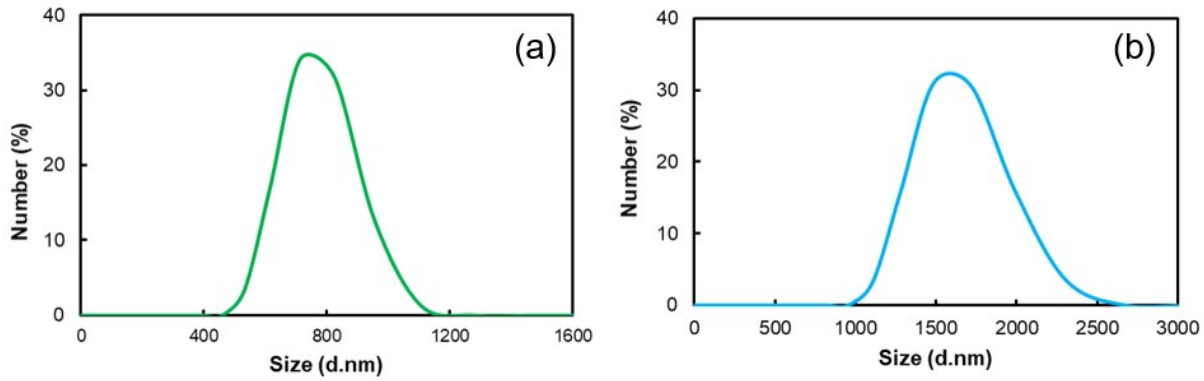

Figure S4. Particle size distribution of (a)silica and (b) calcium carbonate.

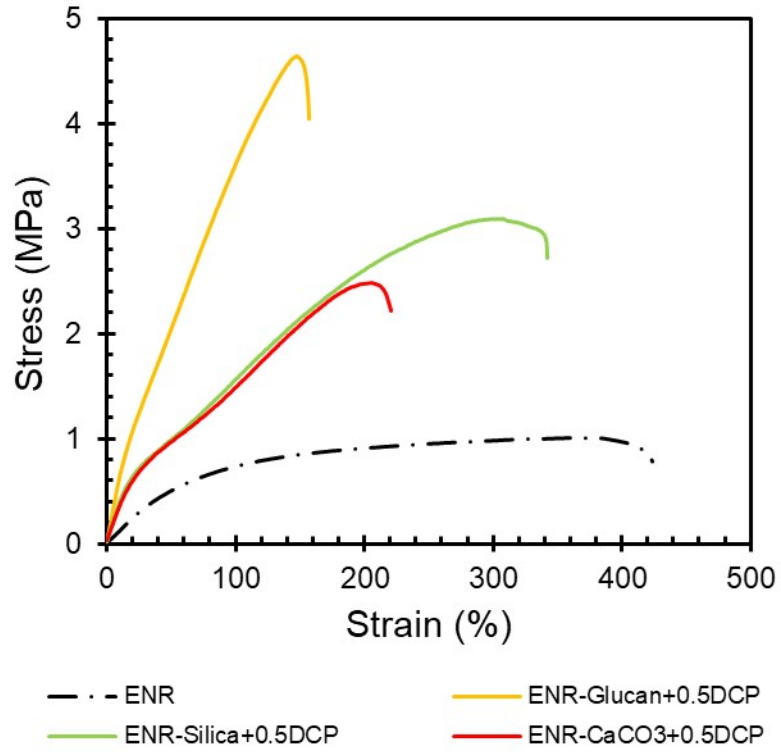

Figure S5. Stress strain curve of pure ENR and ENR composite with glucan, silica, and $CaCO_3$.