CROSS-LINKING CARBOXYMETHYLCELLULOSE AND CHITOSAN WITH CITRIC ACID
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Carboxymethyl cellulose and chitosan are organic polysaccharides. When combined via a dip-coating process, they produced a thin hydrophilic film [1]. This film was transparent and may have useful industrial applications. However, the film was easily destroyed and saturated with water quickly.

To alleviate these issues, the polysaccharide film was cross-linked using citric acid. Citric acid was chosen as an environmentally-safe alternative to other crosslinkers [2]. This led to an increase in film stability and an increase in the amount of water absorbed. Additionally, cross-linking did not remove the film’s transparency.

Future work may include reducing the amount of cross-linker necessary or speeding up the cross-linking reaction. These efforts will help make the polysaccharide films more robust and easier to produce.

References
