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**Viscoelastic properties of levan polysaccharides**[1] KENNETH NOLL, DENIZ RENDE, RAHMI OZISIK, Rensselaer Polytechnic Institute, EBRU TOKSOY-ONER, Marmara University — Levan is a naturally occurring polysaccharide that is composed of $\beta$-D-fructofuranose units with $\beta$(2-6) linkages between fructose rings. It is synthesized by the action of a secreted levansucrase (EC 2.4.1.10) that converts sucrose into the levan externally (exopolysaccharide). Levan is a homopolysaccharide that is non-toxic, water soluble,, and has anti-tumor activity and low immunological response. Therefore, levan presents great potential to be used as a novel functional biopolymer in foods, feeds, cosmetics, pharmaceutical and chemical industries. Despite these favorable properties, levan has a moderately low mechanical properties and poor film forming capability. In the current study, the agglomeration behavior of levan in water and in saline solutions was investigated at 298 and 310 K by dynamic light scattering and transmission electron microscopy (TEM). The viscoelastic properties of neat and oxidized levan films were studied via nanoindentation experiments in the quasi-static and dynamic modes

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