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(54) Title: UV SHIELDING BIO-DERIVED FURANIC POLYMERS

(57) Abstract: This invention provides UV shielding bio-derived furanic polymers (BFP). The invention further provides UV-shielding composite films containing BFP having another polymer of natural or synthetic origin at varying concentration (0.5 - 2.0 wt.% of BFP with respect to the other polymer and 2 wt.% of polymer with respect to solvent) with high thermal stability, mechanical stability and elasticity prepared through conventional solvent evaporation casting. It also provides a process for BFP having varying physicochemical properties via dehydration of various biomass saccharides in different solvents employing various catalysts. The resulting brown colored films (thickness 0.08 ± 0.01 mm) show excellent UV shielding in the region 200 nm to 400 nm besides exhibiting high optical transparency. The UV shielding efficiency of the film increases with an increase in its treatment temperature. The films are stable and durable in terms of mechanical stability and elasticity even after exposing to harsh conditions without affecting the UV-shielding efficiency.



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