

Electromagnetic and Physicochemical Properties in the Addition of Silicon Oxide on the SSPS Renewable Films

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Abstract : The rift environmental, efficiency and being environmental-friendly of these innovative food packaging in edible films made them as an alternative to synthetic packages. This issue has been widely studied in this experiment. Some of the greatest advances in food packaging industry is associated with nanotechnology. Recently, a polysaccharide extracted from the cell wall of soybean cotyledons: A soluble soybean polysaccharide (SSPS), a pectin-like structure. In this study, the addition (0%, 1%, 3%, and 5%) of nano silica dioxide (SiO₂) film is examined SSPS in different features. The research aims to investigate the effect of nano-SiO₂ on the physicochemical and electromagnetic properties of the SSPS films were sonicated and then heated to the melting point, besides the addition of plasticizer. After that, it has been cooled into the room temperature and were dried with Casting method. In final examinations,improvement in Moisture Content and Water Absorption was observed with a significant decrease.Also, in Color measurements there were some obvious differences. These reports indicate that the incorporation of nano-SiO₂ and SSPS has the power to be extensively used in pharmaceutical and food packaging industry as well.

Keywords : SSPS, NanoSiO₂, food packaging, renewable films

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