NOVEL DEVELOPMENT OF BIO-BASED TWO-PACK POLYURETHANE FOR WOOD FINISHED COATING FROM CNSO (CASHEW NUT SHELL OIL): AN AGRO-INDUSTRIAL WASTE

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Abstract - Nowadays, bio-derived functional polymeric materials become a hot spot area for research because of the increasing price of crude oil, depletion of fossil fuels and environmental pollution. The use of non-traditional vegetable oils like Cashew Nut Shell Oil (CNSO) as polymer precursors is the subject of growing interest because of the unique structural features, increasing price of crude oil, and eco-friendly approach. CNSO is an agro-industrial waste from cashew nut (Anacardiumoccidentale) and cardanol is one of the components of CNSO. Cardanol is widely exploited as a renewable resource for developing several sustainable materials because of its number of sites for functionalization and modification which include the phenolic –OH, the aromatic ring, and the unsaturation(s) in the side chain. The present work reports development of novel bio-based wood protective "two-component polyurethane (2K-PU)" prepared from cashew nut shell oil. The prepared 2K-PU was characterized by various spectroscopic methods.

Keywords - Cardanol, Polyol, Polyurethane, Coating Application