

336b Water-Based Nanostructured Composite for Paper Barrier Coating

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In this communication we will report novel water-based and polymer encapsulated nanoclay composites for producing high barrier paper board products. For this purpose, water-based and polymer encapsulated nanoclay composite suspension was first synthesized. Miniemulsion and emulsion polymerization techniques, as well as a dispersion polymerization method, with unique exfoliation method were employed in nanoclay composite synthesis. The results indicated that by adding 10% of nanoclay in the polymer matrix could increase water resistance by 300%. The utilization of this novel nanocomposite for paper coating not only benefits paper board industry by producing high quality paper products but also helps paper recycling industry because paperboard made from proposed nano coating materials is recyclable, which is expected to replace currently used unrecyclable waxed containers.