

## Preparation of waterborne alkyd–acrylic nanoscale hybrid systems

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### **Abstract**

Recent efforts have been made to produce waterborne coating systems which combine the positive properties of alkyd resin (e.g. autoxidative curing, high gloss and penetration in wood) with the fast drying and color retention of acrylic latexes. It is believed that the best way of combining the positive properties of both systems could be achieved when a compatible mixture of the alkyd and acrylic polymer was obtained. In this way, miniemulsion polymerization allows the incorporation of hydrophobic components, like alkyd resins, into polymer particles due to mass transfer through the aqueous phase is avoided. In this work, several strategies for producing different nanostructured particles and incorporating the resin with the polyacrylic particle were analyzed. To compare these strategies the obtained latexes were characterized for determining particle nanostructure, resin incorporation, degree of grafting and remaining resin double bonds using different characterization techniques such as GPC, solvent extraction or NMR.