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# The influence of CuO nanoparticle on non-edible rubber seed oil based alkyd resin preparation and its antimicrobial activity



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## ABSTRACT

In the present paper, bioresin was prepared from non-edible rubber seed oil via alcoholysis–polyesterification process over homogeneous base catalyst tailored by copper oxide (CuO) nanoparticles. CuO nanoparticles were synthesized in glycerol at room temperature and subsequently used in alkyd resin synthesis. The polyesterification process was monitored by determining the acid values as a function of time at different CuO nanoparticle concentrations. The formation of the alkyd resin was confirmed by FTIR with the presence of ester group (C–O–C). The antimicrobial activity of the pseudo-homogeneous additive was determined via Kirby–Bauer Method. The addition of CuO nanoparticle into the conventional homogeneous base catalyzed system explored a new catalytic route for the preparation of bioresin from vegetable oil while reducing the reaction time, as well as inducing the antimicrobial properties in the resin.

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