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Waste Management

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In situ transesterification of solid coconut waste in a packed bed reactor with CaO / PVA catalyst (Article)

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Abstract

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In this study, solid coconut waste and CaO / PVA was used as raw material and catalyst respectively to produce biodiesel through in situ transesterification. Both, raw material and catalyst were packed in a packed bed reactor. The reaction was fixed for 3 h and the mixing was kept constant at 350 rpm. The highest biodiesel yield of 95% was obtained at reaction temperature of 61 °C with catalyst loading (CaO / PVA) of 2.29 wt% and methanol to solid ratio of 12:1. CaO - waste derived catalyst has been successfully proven to be utilized as heterogeneous base catalyst for the production of biodiesel from solid coconut waste. © 2018 Elsevier Ltd

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[Biodiesel](#) [Eggshell](#) [In situ transesterification](#) [Polyvinyl alcohol](#) [Solid coconut waste](#)
[Waste -derived catalyst](#)

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Engineering controlled terms: [Biodiesel](#) [Catalysts](#) [Chemical reactors](#) [Polyvinyl alcohols](#) [Transesterification](#)Engineering uncontrolled terms: [Catalyst loadings](#) [Coconut wastes](#) [Eggshell](#) [Heterogeneous base catalyst](#)
[Packed bed reactor](#) [Reaction temperature](#) [Situ transesterification](#)Engineering main heading: [Packed beds](#)EMTREE drug terms: [biodiesel](#) [calcium oxide](#) [fatty acid ester](#) [methanol](#) [polyvinyl acetate](#)

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