

## Biodegradation and thermal studies of natural fiber/nanoclay hybrid composites of poly ( $\epsilon$ -caprolactone) / poly (lactic acid) blends

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### Abstract

The thermal properties and biodegradation of polycaprolactone/poly(lactic acid, (PCL/PLA) blend reinforced with palm press fibers/organophilic modified montmorillonite (MMT) was studied in this research. Dicumyl peroxide was used as cross linking compatibilizer in the PCL/PLA blend. The composites were prepared to test the effect of increasing fiber loading and the effect of dicumyl peroxide with the presence of MMT. The blend composite were prepared using a twin-screw extruder followed by injection molding to fabricate the specimens. FTIR shows the compatibilization of PCL/PLA with DCP. DSC test signifies no change in thermal properties. Soil burial method studies showed

that increasing fiber content in the PCL/PLA/Fiber/MMT with compatibilizer DCP shows a better degradation property than the composites without DCP. Water absorption test indicates absorption rate increased as fiber content increased.



### Biography

Akos Noel Ibrahim had his PhD from Universiti Teknologi Malaysia In 2013. He is currently lecturing at The Federal Polytechnic Kaura Namoda, Nigeria. He has been a free-lance reviewer to so many international Journals. His research interest includes natural fiber composites, Biodegradable polymers, Polymer characterization, Biopolymers and Green composites. He has publications in many reputable international Journals.

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