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Development of cow bone particulate reinforced epoxy composites for biomedical applications

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This work was carried out to investigate the reinforcement potential of cow bone particle in epoxy matrix. The cow bone was procured from abattoir as waste and was washed, sundried, calcined, pulverized and sieve to obtain $-75\ \mu\text{m}$ that was used for the development of the composites. The composites were developed by varying the reinforcement and the matrix in predetermined proportions using open mould production method. The composites were formed into tensile, flexural and wear samples. The cured samples were tested from where it was discovered that the reinforcement had enhanced the mechanical and wear properties of the material. Scanning Electron Microscope (SEM) was used to examine the dispersion mode of the cow bone particle in the epoxy matrix. From the results, wear and flexural properties of the developed composites were better enhanced than the unreinforced epoxy matrix that was used as the control however; the tensile properties were not properly enhanced relatively. The results revealed that the composites can be used as biomedical implants.

Biography

Oladele I O obtained his Master's and PhD in the area of natural-fibre reinforced polymer composites in the Department of Metallurgical and Materials Engineering, Federal University of Technology, Akure, Ondo State, Nigeria. He has supervised undergraduate and post graduate research and has published in both local and international journals and conference proceedings in this area

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