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Physical and mechanical properties of wood plastic composites produced from indigenous sawdust of *Ceiba pentandra* (Araba tree)**Akinfiresoye Waleola Ayo**

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This research work deals with the production of composite mix from Sawdust (SD) of *Ceiba Petandra* (Araba tree) found in south western part of Nigeria and recycled Polyethylene Terephthalate (PET). These two waste products primarily causes environmental and air pollution in Nigeria. The wastes were recycled using weight based ratio mix of 40:60, 30:70 and 20:80 SD:PET in percentage. The PET was first melt at 200 oC before mixing with the sawdust and fed into the extruding machine. The composite was received into 150x80x70 mm dimensioned mould which was hot pressed at 120 oC to a thickness of 13 mm. After cooling, the samples were subjected to physical and mechanical test which showed that after 24 hours of water immersion, the composite with 20% of SD content has the lowest water absorption of 4.52%, thickness swelling of 2.69% and linear expansion of 0.77% respectively. Thickness swollen recovery test also showed that the composite mix of 20% SD was the first to attain dryness after absorbing water for 24 hours at air humidity of 75%. MOE and MOR were reached to maximum at 1992.42 and 0.193 N/mm², respectively. Analysis of variance carried out at 0.05% probability level showed that the mixing ratio of the composites were significant on the physical and mechanical properties of wood composites board. This study shows that it is possible to produce new products useful for structural building applications from waste products of sawdust and plastic water bottles thereby eliminating pollution in our environment.

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