

Oil palm mesocarp fiber as new lignocellulosic material for fabrication of polymer/fiber biocomposites

Abstract

New biocomposites consisting of poly (butylene succinate) (PBS) and various content (0-70 wt%) of oil palm mesocarp fiber (OPMF) or oil palm empty fruit bunch fiber (OPEFBF) were fabricated by melt blending and subsequently hotpress moulding. The tensile, flexural, and impact properties of those biocomposites were evaluated and compared. Enhancement of flexural modulus of 200 or 150% was observed with PBS biocomposite loaded with 70 wt% of OPMF or OPEFBF. PBS/OPMF biocomposites exhibited higher values of tensile, flexural and impact strengths, and tensile and flexural moduli than those of PBS/OPEFBF biocomposites. These results indicated that OPMF feature better reinforcing agent for PBS as compared to that of OPEFBF.

Keyword: Oil palm mesocarp fiber; Oil palm empty fruit bunch fiber; Poly(butylene succinate); Biocomposites.