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Structural characterisation and antibacterial activity of PP/HDPE/TiO₂-clay nanocomposites prepared by reactive extrusion

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Abstract : Compatible blends of polypropylene(PP)/high density polyethylene (HDPE) were prepared by reactive blending in the presence of dicumyl peroxide (DCP) and maleic anhydride (MAH). The blends were characterized using different techniques: dynamical rheological analysis (DRA), differential scanning calorimetry (DSC), optical microscopy (OM) and scanning electron microscopy (SEM), dynamical mechanical thermal analysis (DMTA), and impact strength, to evaluate their properties. The antibacterial properties of PP/HDPE/TiO₂-clay nanocomposites on *E. coli*, *Bacillus subtilis* and *S. aureus* have been studied.

Keywords : pp, (dcp), nanocomposite, antibacterial properties