Investigation of mechanical properties of sea-shell-CaCO₃/LDPE composites
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OBJECTIVES
Calcium carbonate (CaCO₃):

➢ Use calcium carbonate particles obtained spare sea shells (crepidula, oyster and scallops) as fillers in polyethylene matrix
➢ Investigation of structural, morphological and mechanical properties

Commonly used as a filler to toughen polymers

MATERIAL AND METHOD
Materials ➔ PE and biogenic CaCO₃
Methods ➔
➢ Elaboration; double screw injection molding
➢ XRD, SEM, FTIR, TGA
➢ DMA, DSC, Tensile Test

CONCLUSION
Calcium carbonate is an abundant resource present in biogenic shell, possibly used as filler in polymer matrix. The PE/CaCO₃ composite reveal to be attractive as a cheap bio material that can use spare shells, at low price since no shell decomposition is needed (only grinding). Because higher thermal stability polymers are necessary, it is valuable for industrial production and practical application.

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