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MODIFICATION OF POLYMER SURFACE BY IMPRINTING TECHNIQUE OF NANOFIBERS

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A new method to modify polymers'surface using imprinting technique of nanofibers is proposed. Nanofibers of poly(butylene terephthalate) (PBT) were prepared in a molten polypropylene (PP) by melt stretching and subsequent quenching. The obtained composite of PP containing PBT nanofibers is compressed into a sheet and piled with a sheet of polyethylene (PE). During annealing procedure of the piled sheets at the temperature between Tm's of PP and PBT, PBT nanofibers are immigrated onto the PE surface. Further, the sheets can be separated easily after quenching. Similarly, PTFE nanofibers in PLA/PTFE composite sheets are imprinted onto PP surface during annealing procedure applied for piled sheets of PLA/PTFE and PP at the temperature between Tm's of PLA and PTFE. This technique of the modification is applicable to various polymers.