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**POLYETHYLENE LDH NANOCOMPOSITES USED IN FIBER SPINNING**

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The preparation of synthetic fibers via melt spinning route marks an important process within industrial fiber production. The properties of the resulting material are strongly influenced by the processing parameters. The use of nanocomposites for the melt spinning of fibers can lead to an additional improvement of the resulting material, but at the same time the nanofiller can have a strong effect on the fiber formation itself by changing or limiting the applicable process conditions. The potential of layered double hydroxides (LDH) as polymer nanofillers has drawn serious attention within the last years. An incorporation of LDH into fibers could lead to the similar beneficial effects as already shown in bulk material, e.g. improved mechanical properties, flame retardancy or introduction and stabilization of incorporated molecules into the polymer. Furthermore, scientific works on other two dimensional nanofillers have shown that the dispersed platelets can promote the crystallization and orientation of the fiber and therefore enhance its tensile properties. This work focuses on investigating the spinnability of LDH-nanocomposites under different processing parameters. Mg-Al-LDH was chosen as nanofiller and modified by myristic acid to improve the nanoscale dispersion in the polymer. The modified LDH is then dispersed in HDPE and melt spun with varying process parameters. The effect of the filler particles on the fiber formation is studied and the mechanical properties of the resulting fiber are evaluated.