Effect of calcium carbonate nanoparticles on the crystallization kinetics PA66

AB STRACT :

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Polyamide 66 (PA66) in engineering plastics are used. However, its poor strength, has limited applications. Thus, the strength of the PA66 highly regarded in the field has been modified. Generally, the strength of a plastic and elastomer matrix is reduced stiffness and heat resistance Find a convenient way for the strength of PA66 without reducing stiffness and heat resistance of polymers is a key target for researchers in the fields. In this study, calcium carbonate nanoparticles have been used for the strength of PA66 through the molten mixture. Isothermal crystallization kinetics of nanoparticle effect on Differential scanning calorimetry technique was studied for Polyamide 66. The results showed that by adding a small amount of nanoparticles , PA66 crystallization rate can be increased, crystallization temperature increases and crystal size distribution during crystal growth is limited. Changes in the nuclear energy based on the resulting crystal Avrami equation was Hoffman's theory. With the development spherolite radial surface free energy of the crystals decreases with increasing amounts of nanoparticles. The results showed that , crystal structure and crystallization kinetics Composite PA66 / Nano carbonate calcium , used nano particles, was not nucleation agent for PA66.

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