Study on Crystallization rate of PLA Film Surface with an Aging Temperature

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Poly(lactic acid) (PLA) has received an increasing attention in the last decade for packing films and textile materials due to its high biodegradability, excellent material properties, and availability from renewable resource.
PLA has a glass transition temperature (Tg) of 50~60℃ and melting temperature (Tm) of 150~180 ℃ depending on its D content and molecular weight. PLA can be quenched into quasi-amorphous state and crystallized upon annealing and orientation.
But, since PLA Film is a slow crystallizing polymer, it does a many time in necessity in the production process.
Finally, it brings about decrease of productivity and we have to control of crystallization rate.
In this paper, in order to know crystallization rate of PLA, it was investigated on isothermal crystallization from 110 to 150℃, and then, using Avrami Equation, obtained Avrami constant n and crystallization rate constant K.