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Study on surface smoothness of extruded high filling polyolefin compound

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Improvement by filling is one way of the improvement properties of polymer but as filling quality increases, friction resistance will increase in the same time, and when the extruding speed goes beyond some limit, unstable flow will emerge, and the surface will not be smooth any more, which will definitely decrease the quality and output. So in the last fifty years, a lot of observation and research about this was made. In this article, compound materials of high filled polyolefin is studied with respect to the extruding speed, particle diameter of filler and the distribution of molecular weight, etc. Our goal is to study the factor which influences the smoothness of extruded surface and to seek some way to avoid or decrease the chance of facture. Experiments show that decreasing the extruding speed will be helpful to make extruding stably; using smaller ATH and widening the distribution of molecular weight can greatly improve extruding properties.

Key words: Polyolefin smoothness of surface