On the performance and analyaia of characteristics of barrier screw extruders

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ABSTRACT

The Barrier Single-Screw Extruder is the most useful piece of device used in the polymer processing industry, food processing industry, cosmetics processing industry and pharmaceutical processing industry. Because of important role of Barrier Single-Screw, apply science to optimal Barrier Single-Screw always is expected. The goal of this work is make good qualities, high quantities and homogeneity of output ’ s production of the Extruder. In this research presented optimal method Barrier Sing-Screw base on Maillefer Barrier Screw, combined with Chris Rauwendaal ’ s optimum design to make a advanced Barrier Screw, which improved the melting and mixing performance by the helix angle of barrier flight is large than the helix angle of main flight of double flights and largely eliminate the chance of plugging. Then apply Darnell-Mol ’ s theory to calculate Mass Flow Rate throughput over the Extruder. Continuation to simulate 3-D Model of Barrier Single-Screw Extruder, analysis 3-D Model by CF design. Therefore, the characteristics on the performance of Barrier Single-Screw get by CF design results. Finally, use inductive method to create design a Barrier Single-Screw Flow Chart.

Keywords : Barrier Single-Screw, analysis of characteristics, CF design.

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