عنوان مقاله:

Design and optimization of extrusion die with cross flow for a complex thermoplastic profile as non-Newtonian fluid

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خلاصه مقاله:

In this article the procedure of achievement of a uniform flow of step die for approximately complex profile is displayed clearly. Land length effects as one of the most important parameters on the flow of molten polymer, is taken into consideration and according to the specific optimization methodology the die optimization strategy is based on varying die land length. The scope of this paper includes: 1) Three dimensional flow simulation. 2) Optimization of the die velocity outputs which is extracted from simulation process. 3) Comparison of numerical predictions with the experimental data gathered during extrusion process for unbalanced and optimized dies.

کلمات کلیدی:

Thermoplastic extrusion; Extrusion die design; cross-flow; Numerical simulation; Die optimization