# THE UNDERSTANDING AND OPTIMIZATION OF THE SINGLE CAVITY MOULD FILLING PHASE IN PLASTIC INJECTION MOLDING, USING FEA

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***Abstract:*** Of the many technologies to manufacture plastics, injection molding has emerged as one of the most efficient and profitable technology to produce parts out of this versatile material.
A sizable body of know-how on engineering practices associated with the injection molding have developed over the years [3,4], and molding engineers have benefited greatly from learning and applying them, but the science based understanding of the processes has lagged behind the progress of this technology [5,6].
In the last decade, a considerable progress has been made in incorporating this science into computer software that is beginning to be of tremendous help to the injection molding engineers.
The work presented here deals with the simulation of the cavity filling stage of the injection molding process, for thermoplastic materials in real conditions.
For better understanding of physical phenomena we used COSMOS-FloWorks that gave us the possibility to take into consideration some other aspects usually neglected in other dedicated 3D software.
***Key words:*** injection molding, plastics, simulation, real conditions, COSMOS-FloWorks.