

PROCESSING PROPERTIES OF SPECIFICALLY MODIFIED THERMOPLASTIC POLYMERS

Tomasz Sterzynski

Institute of Materials Technology, Poznan University of Technology, PL 60-965 Poznan/Poland
tomasz.sterzynski@put.poznan.pl

ABSTRACT

The melt processing of any thermoplastic polymer requires an adequate preparation of the polymeric material, where the most important effects in this case are the flow properties, temperature range in which the processing may be realized, as well as the structural effects observed by cooling after the forming process has been completed. Thus, the processing properties of thermoplastic polymers and its blends may be created and modified not only by specific additives but also by accompanying conditions during the flow in the dies and channels.

The structural modification by heterogeneous nucleation, and/or by addition of chemically active and non - active nanofillers, the flow properties modification by low density polymers and specifically modified low molecular weight additives will be presented and discussed. The solidification behavior by cooling from the processing temperature, depending on the melt deformation and composition of specific additives will be discussed in relationship with the results of the investigation based on the last knowledge.