IJ-029  TEMPERATURE PROFILES OF GLASS FIBRE-FILLED POLYPROPYLENE MELTS IN INJECTION MOULDING

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An experimental rig, coupled with the use of a temperature sensing array has been used to measure temperature profiles of flowing polypropylene melts in the barrel of an injection moulding machine. The effect of glass fiber content on the melt temperature measurement is investigated with respect to maximum temperature rise and the shape of the temperature profiles. It is found that the temperature of the melt is affected by the presence of glass fibers due to shear heating between polymer-polymer and polymer-glass fibres during the flow. The increase in melt temperature during the flow appears to be more pronounced as the glass fibre content increases. The experimental results obtained are found to be different from theoretically calculated ones.