PRECISION POLYMER MOLDING ASSISTED BY INFRARED LASER IRRADIATION

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ABSTRACT. Development of two systems of precision molding process for plastics assisted by infrared laser irradiation is described in this paper. The first process is able to improve both the optical quality and the replication ability of plastics by radiant heating on the moving polymer melt injected in the mold cavity through the window provided on the mold wall. The second process is a press molding one for replication on to the surface of solid blank work pieces using a similar IR-laser irradiation. This system has also an ability of high-precision replication minute mold surface configuration to the one of plastics. Both proposed processes showed remarkable performance on micro-scale replication.