Replication Fidelity Assessment in Nano Moulding

Innovations in nanotechnology propose applications integrating micro and nanometer structures fabricated as master geometries for final replication on polymer substrates. The possibility for polymer materials of being processed with technologies enabling large volume production introduces solutions to remove technology barrier between lab-scale proof-of-principle and high-volume low-cost production of nanotechnology-based products. In the current study research work has been devoted to develop methods and approaches to process chain characterization for final polymer micro and nano structures replication. Fidelity between nickel master geometries replicated on polymer substrates and its dependency to process variation, process conditions and features geometries were considered and quantified.