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(71)Name of Applicant :

1)NOIDA INSTITUTE OF ENGINEERING & TECHNOLOGY

Address of Applicant :19, Knowledge Park-II, Institutional Area, Greater Noida – 201306, Uttar Pradesh, India. -----

Name of Applicant : NA

Address of Applicant : NA

(72)Name of Inventor :

1)AJAY KUMAR

Address of Applicant :Department of Mechanical Engineering, Noida Institute of Engineering & Technology, Greater Noida. Greater Noida -----

(57) Abstract :

A temperature-controlled mould conditioning apparatus for injection molding includes thermal modules (101) embedded within the mould base (105). Each module comprises a thermoelectric unit (102), temperature sensor (103), and heat sink (104), all controlled via a central unit (106). The system ensures real-time, zonal heating and cooling to improve part quality, reduce cycle time, and save energy through adaptive feedback control.

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