Production Technology Research Group

YOKOI LAB.

[Ultimate Injection Molding Technology and Pulp Injection Molding]

Department of Mechanical and Biofunctional Systems

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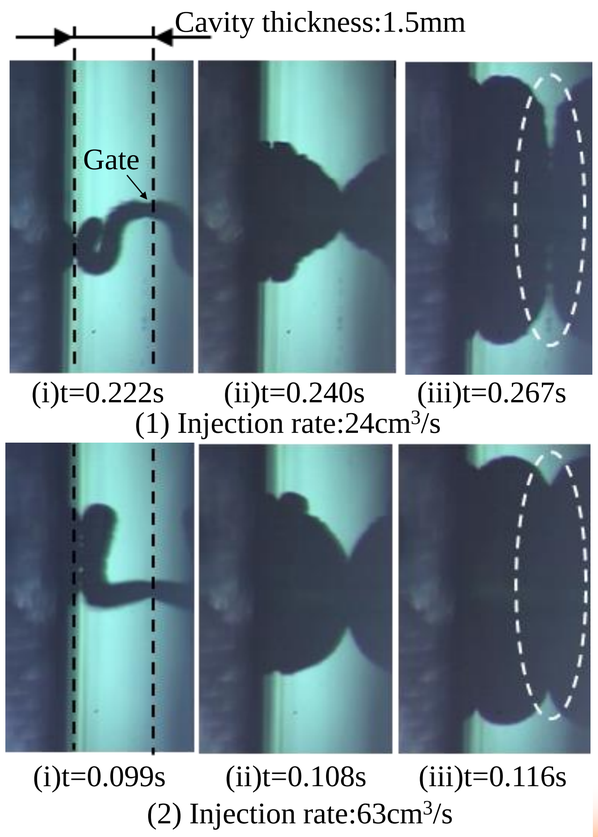
Precision engineering department

Polymer Processing

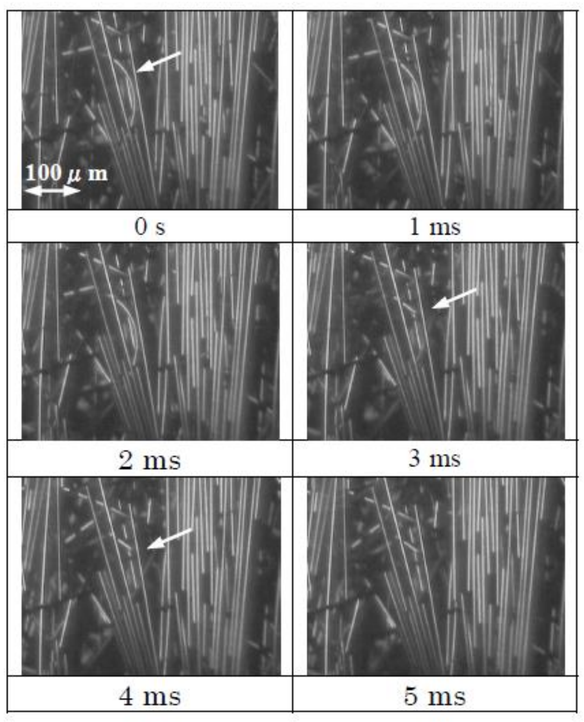
Recent Topics on Visualization and In-process Measurement Technologies for Injection Molding

The Yokoi Laboratory is conducting the following projects; “Ultimate Injection Molding Technology” and “Pulp Injection Molding (PIM)”. Visualization themes and in-process measurement technologies are introduced through the demonstration of recent analytical results and video visualization images. Development of PIM samples is also reported using typical molded samples on display.

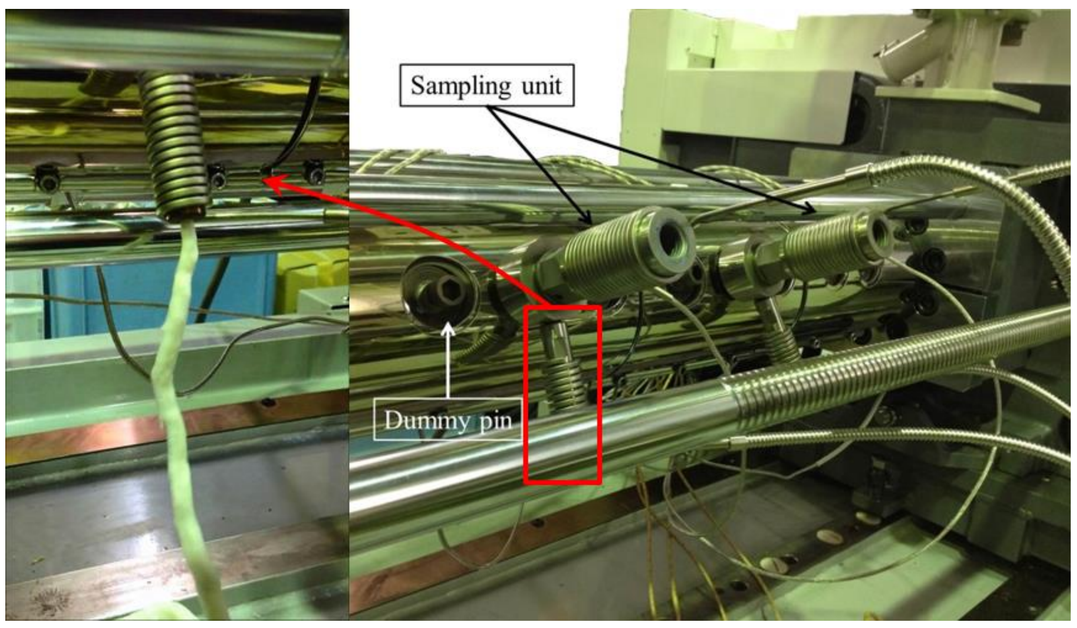
- Visualization Analysis on Breakage Behavior of Reinforced Fibers by Glass-inserted Heating Cylinder
- Visualization Analysis of Asymmetric Fountain Flow Phenomena Based on Dynamic Observation of Melt Front Behaviors
- Measurement of Three-dimensional Temperature Distributions inside Cavity Filling Melts Using Integrated Thermocouple Sensor
- Development of Viscosity Characteristics Evaluation Equipment for Pulp Injection Molding Compounds



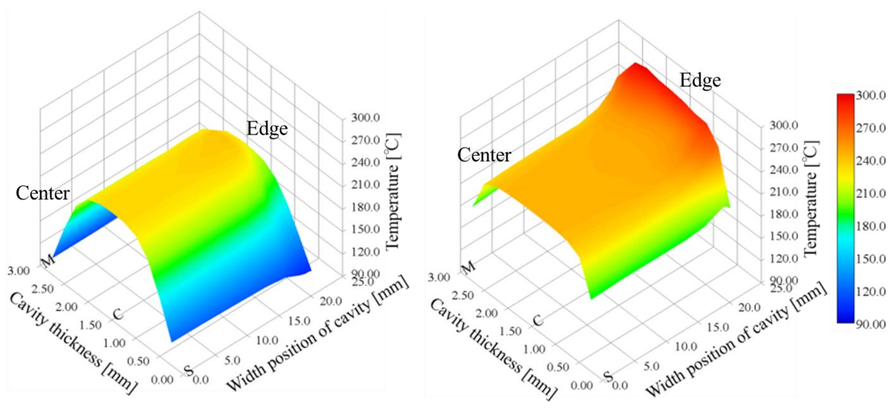
Visualization images of the filling behavior at the pin-point gate



Observation results of fiber breakage process inside a screw channel

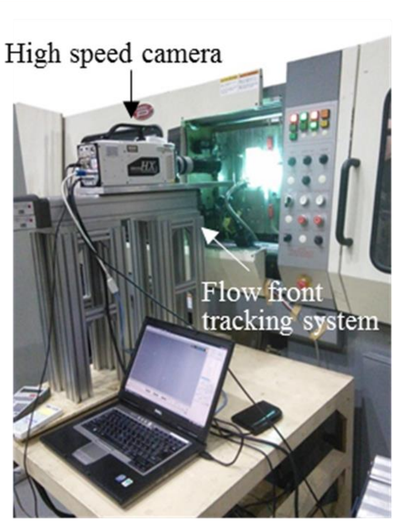


In-process multi-port sampling cylinder

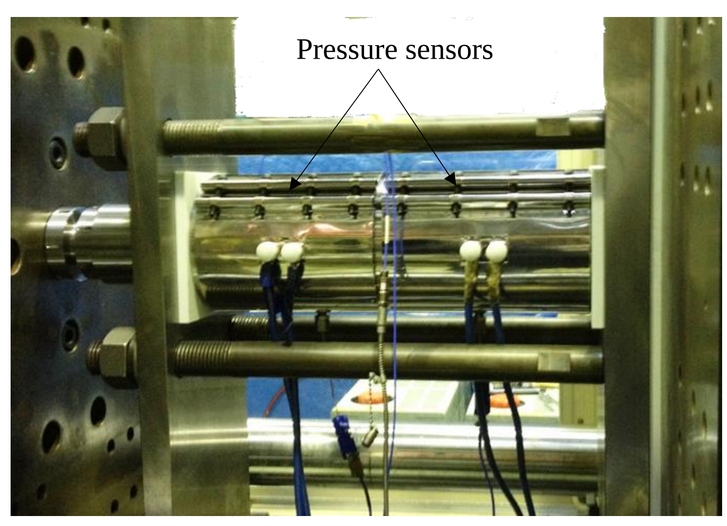


(a) Injection rate 10cm3/s (b) Injection rate 100cm3/s

Temperature distributions inside cavity filling melts



Dynamic observation of melt front behavior



Viscosity characteristics evaluation equipment for Pulp Injection Molding