Future-Oriented Injection Molding Technologies

[Development of Unexplored Research Areas in Injection Molding Technologies]

Future-Oriented Injection Molding Technologies, Social Cooperation Program

Polymer Process Phenomena Engineering

http://www.snom.iis.u-tokyo.ac.jp/

Establishment of Future Injection Molding Technologies

In injection molding, a major polymer processing technology, the emergence of new hard-to-mold/-control materials such as long carbon fiber-reinforced resins and in-mold multiple processes such as molding and joining are making molding phenomena so complicated that original molding material characteristics are difficult to realize. This program aims to focus on unexplored technological/academic research areas that would lead to the development of future injection molding technologies for resolving these issues.

Companies: FANUC Corporation, Sumitomo Heavy Industries, Ltd.,
Toyo Machinery & Metal Co., Ltd.

Period of activity: April 2018 – March 2025

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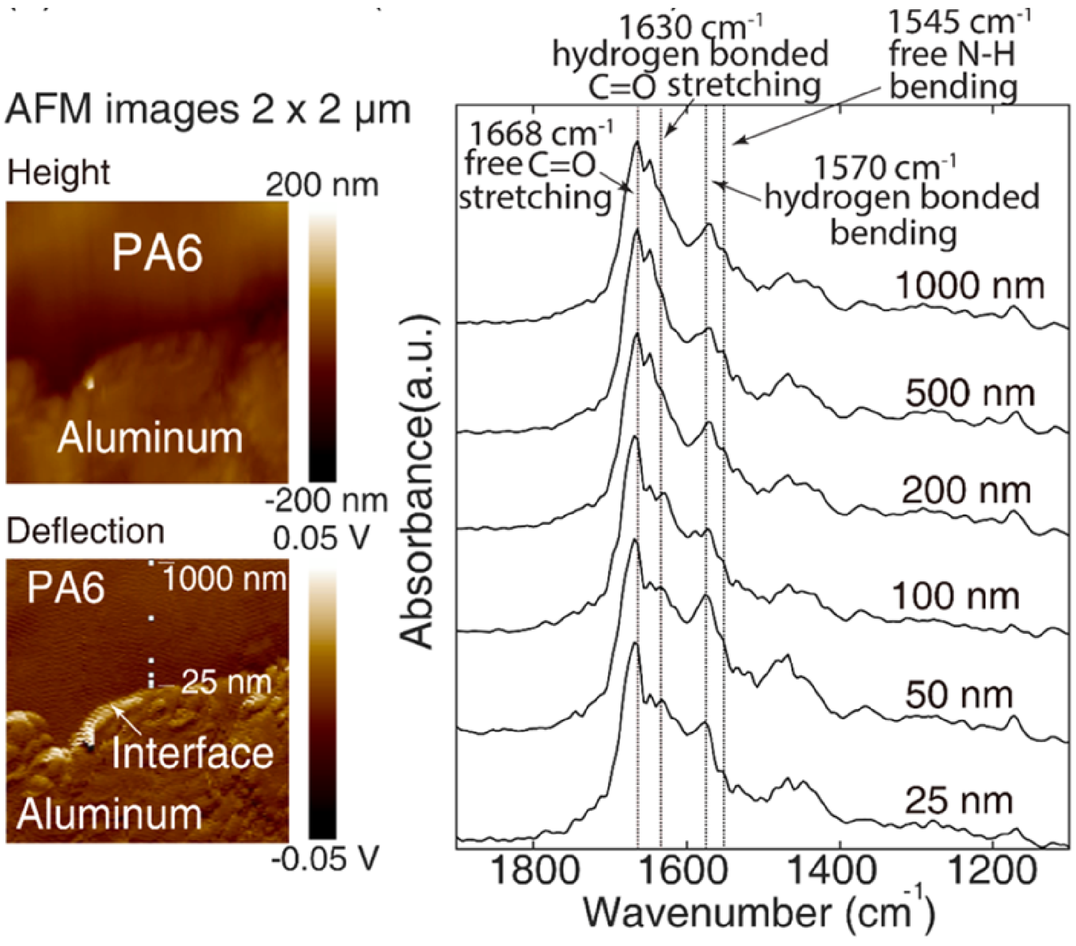
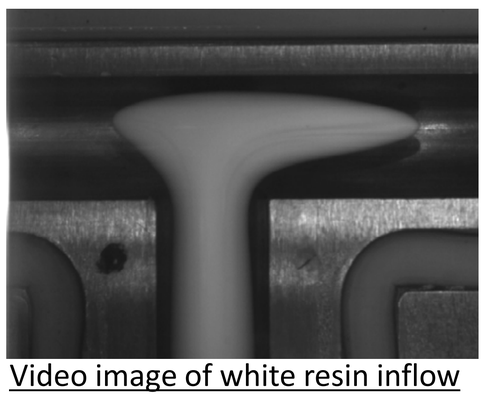
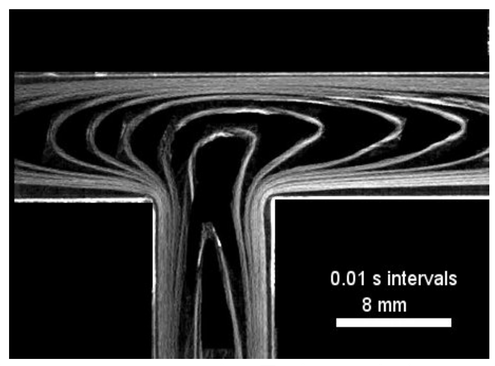


Hydrogen Bonding Spectra at the Interface of Al/PA6 Molding Joint

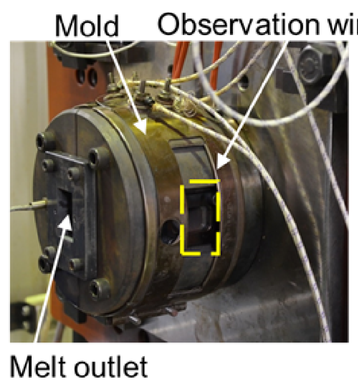


Video image of white resin inflow

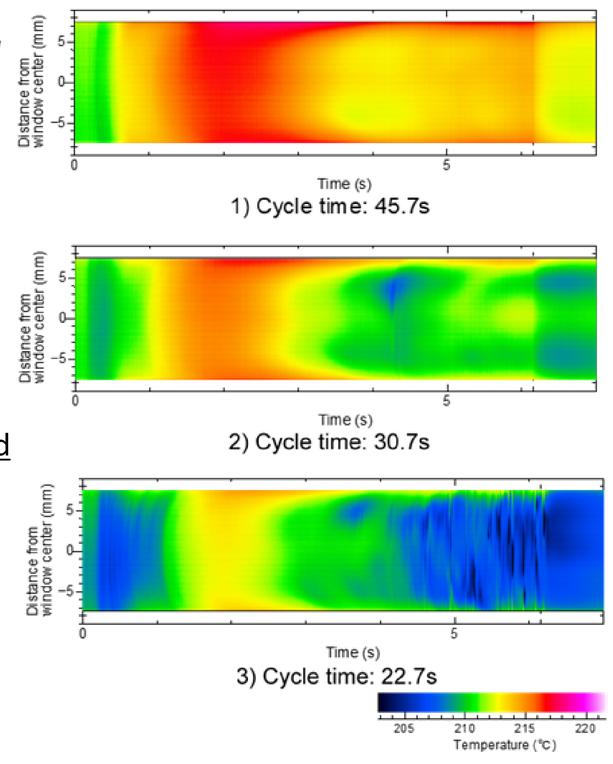


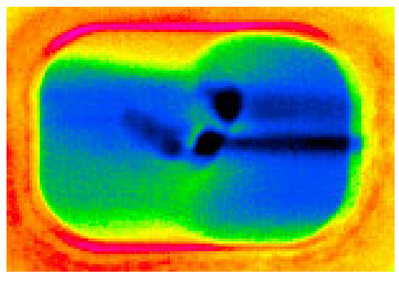
Flow patterns at the T-shaped channel

Visualization Analysis of Flow Phenomena at Split Portion in Hot-Runner Manifold



Temperature measurement mold





Thermal image of low temperature resin inflow

Time-laminated images of infrared thermography

Measurement of Temperature Distributions Inside Flowing Melts Injected from Nozzle