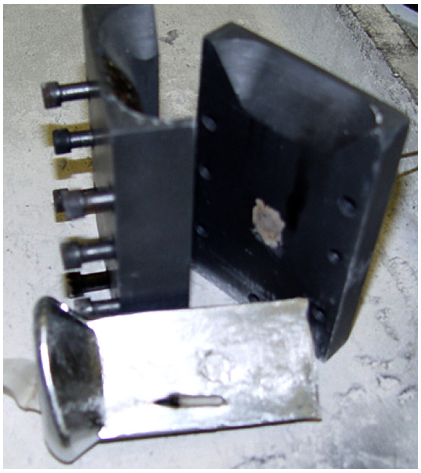
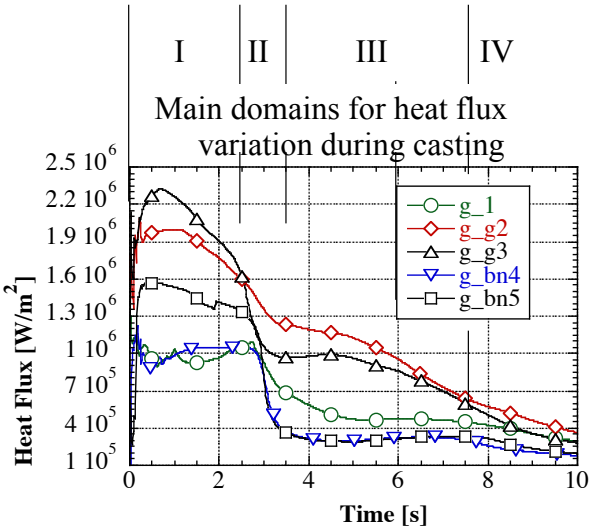
Measurement of Heat Flux at Metal-Mold Interface During Casting Solidification





Heat transfer coefficient $h(q'', T_C, T_M) = \dfrac{q''}{T_C - T_M}$

Very fast response time allows data measurement at short times.

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A heat flux sensor and IR imaging were used for the first time to study the lubricant application for the die casting process

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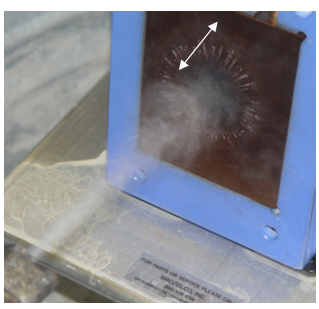
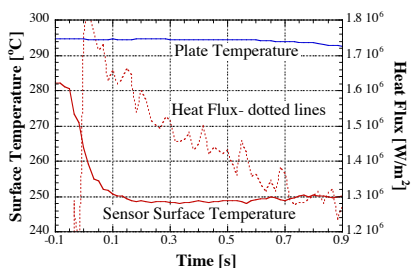
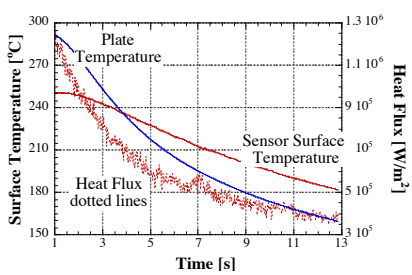


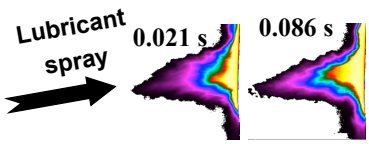


- **Sudden drop in temperature and heat flux is observed initially.**
- **Sensor temperature stays constant after the sudden drop as the heat flux continue to decrease.**

Water vapors preclude an effective cooling at longer times



After the initial stage, the temperature varies linearly and the heat flux obeys a logarithmic law.



Heated plate surface

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