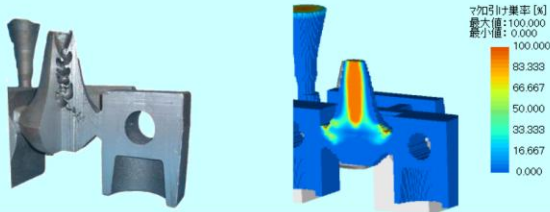


Riser Analysis (Simple ed.)*1

Quantitatively predicts macro- and micro-shrinkage in both the riser and casting with consideration of solidification contraction, mass feeding and liquid level drop in liquid and mushy regions.



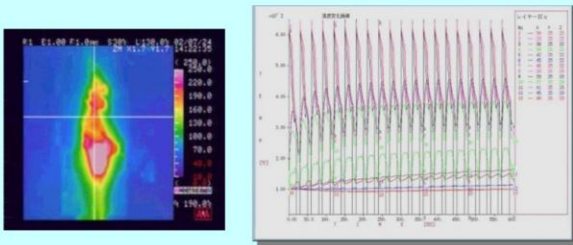
Gravity Tilt Casting [Mold Filling]*1

Simulates mold filling during gravity tilt casting by defining the tilt angle as the function of time.



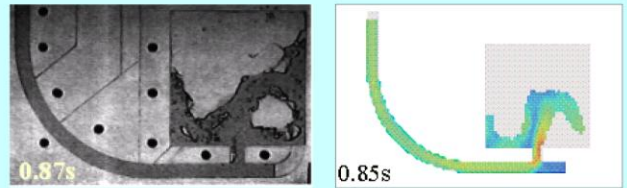
Cyclic Casting [Solidification]*1

Simulates cyclic casting processes in permanent mold casting. Essential for the cooling system design of dies.



Mixed Mesh [Mold Filling & Solidification]

One of our original developments intended to increase the accuracy of geometry approximation. Improves the mesh quality of thin-walls and curved surfaces of the castings, and consequently, the simulation accuracy.



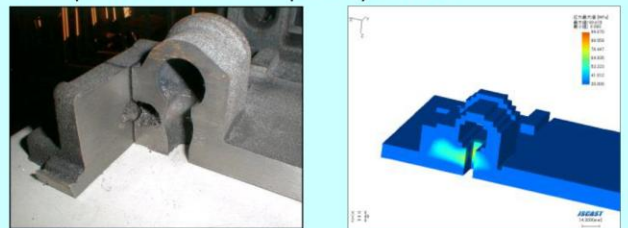
Back-Pressure [Permanent/Sand Mold]

Considers the effect of backpressure on mold filling for both permanent and sand mold casting processes. Predicts gas defects caused by poor designs of gas-evacuation and gating systems.



Porosity (Ductile, Stress method)

Considers the unique solidification phenomena of ductile cast iron. The maximum principal stress during solidification is used as the prediction criteria for porosity defects.



Thermal Deformation Interface

Provides interface with commercial software, NASTRAN, allowing users to export temperature data from JSCAST solidification simulation to NASTRAN for thermal stress, strain, deformation and cracking of both casting and mold

Note: Nx NASTRAN is the registered trademark of Siemens Product Lifecycle Management Software Inc.

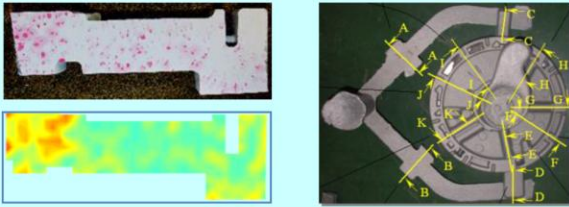
Physical Properties Calculation Module

Provides interface with commercial software, JMatPro, allowing users to predict thermo-physical and mechanical properties of casting alloys just by simply inputting their compositions.

Note: JMatPro is the registered trademark of Sente Software Co. (UK).

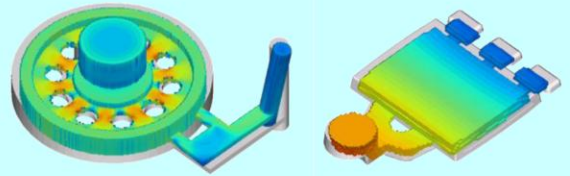
Porosity [Mold Filling & Solidification]

Predicts porosities caused by gas entrainments during mold filling. Applicable to various casting alloys.



Casting Deformation

Predicts casting stress, strain and deformation based on output data of solidification simulation.



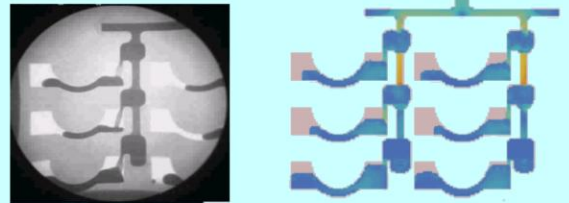
HPDC-Shot Sleeve [Mold Filling]

Simulates mold filling in HPDC with consideration of the shot-sleeve, including [Pouring of the shot-sleeve], [Holding before shot], and [Plunger moving].



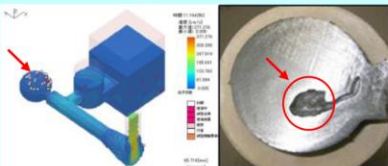
Mold Filling Considering Surface Tension

Simulates mold filling with consideration of melt surface tension and wettability between melt and mold. Improves the simulation accuracy of free surface morphology and position, and misruns, especially for thin-walled castings.



Sand & Slag Inclusions [Mold-Filling]

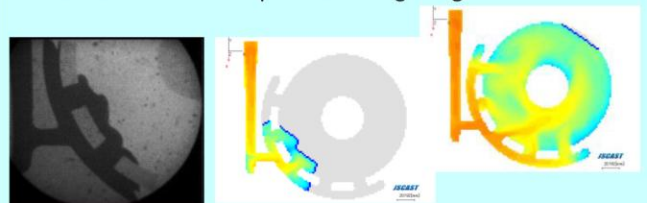
Allows users to specify the generation conditions of sand and slag particles, and trace particle movement in the melt with consideration of buoyancy and predict particle final positions and adhesions to the mold.



- Particle status
in melt, adhesion, etc
- Adhesion mechanism
Adhesion, stagnation, etc
- Generation condition
Pressure, velocity, fill rate

Lost Foam Casting [Mold Filling & Solidification]

Simulates how the foam pattern is replaced by liquid metal during mold filling. Considers the effects of vacuum suction and permeability of sand mold and coating. Helps users to decrease flow-related defects and optimize casting designs.



*1: Functions previously included in the basic module up to Ver.9.