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Comparative evaluation of phase-change mechanisms for the prediction of flashing flows

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Highlights

- Numerical investigation of flash boiling in wall-confined flows.
- Different modelling approaches for predicting phase-change comparatively examined.
- Effect of nucleation-site density and thermal non-equilibrium on mass-transfer illustrated.
- Onset of flash boiling linked to compressible flow expansion downstream the nozzle outlet.
- Models based on the kinetic theory of gases capable of predicting flashing flow in all examined cases.

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