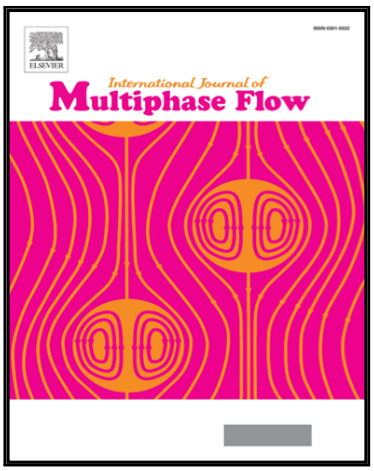

A two-phase lattice Boltzmann study on injection filling of cavities with arbitrary shapes

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PII: S0301-9322(17)30582-7
DOI: 10.1016/j.ijmultiphaseflow.2017.12.009
Reference: IJMF 2699

To appear in: *International Journal of Multiphase Flow*

Received date: 7 August 2017
Revised date: 16 November 2017
Accepted date: 17 December 2017

Please cite this article as: Soroush Fallah Kharmiani , Mohammad Passandideh-Fard , A two-phase lattice Boltzmann study on injection filling of cavities with arbitrary shapes, *International Journal of Multiphase Flow* (2017), doi: 10.1016/j.ijmultiphaseflow.2017.12.009

Highlights:

- The numerical model is capable of simulating multiphase flows at relatively large density ratios and low viscosities with thermodynamic consistency.
- Two filling regimes namely steady and splashing are identified.
- The threshold Re number for onset of splashing is investigated.
- A good agreement is observed between the present LBM results with those of the SPH method reported in the literature.
- The filling sequence of the branches in multi-branch header cavity is different for low and relatively high Re numbers.