

total computational cost of the simulations.

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NOMENCLATURE

c	specific heat, J. kg ⁻¹ . K ⁻¹
k	thermal conductivity, W.m ⁻¹ . K ⁻¹

Greek symbols

ε	Fluid volume fraction
ϕ	Dimensionless outlet temperature
ρ	Density, kg.m ⁻³
μ	dynamic viscosity, kg. m ⁻¹ .s ⁻¹

Subscripts

m	mixture
f	fluid
s	solid