Abstract Submitted
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Transition from partial to complete coalescence BAHNI RAY, TAEHUN LEE, Department of Mechanical Engineering, City College of City University of New York, USA — The lattice Boltzmann equation (LBE) method is used to simulate satellite drop formed during coalescence of unequal size drops first shown experimentally by Zhang, Li and Thoroddsen [Phys. Rev. Lett. **102**, 104502 (2009)]. Partial coalescence is commonly observed for drop impact on flat surface for a particular range of initial drop diameter. Important criterion for partial coalescence is the increasing horizontal momentum of the drop relative to the vertical momentum. The experimental observation of similar phenomena with two unequal size drops emphasize on the fact that the curvature of the surface has an important contribution as well. Simulations are performed to show that the drop curvature and drop liquid drainage time effects the satellite drop formation. Furthermore the study is extended to drops with surrounding liquid medium and compared to drop coalescence on flat surface.

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