

Droplet impact on hydrophobic and superhydrophobic solid surfaces finds numerous applications, while the wide range of the parameters affecting its outcome necessitate a thorough study to reveal the underlying physics. Specific applications are related to the drop impact upon curved surfaces, such as micro-encapsulation in fluidized beds. Three-dimensional numerical simulations by applying Level-Set Method have been performed to investigate the water droplet impact on curved and flat hydrophobic and superhydrophobic substrates. Parameters such as the impact Weber number, the surface curvature and the equilibrium contact angle have been varied in order to assess their effects on the dynamics of the impact process. After providing a strong validation, it is found that impact on spherical surfaces generally presents a higher area of liquid to be in contact with the substrate with respect to the case of flat surfaces, when all other impact conditions are the same.

