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Molecular dynamics simulations of Janus nanoparticles in evaporating droplets WEIKANG CHEN, JOEL KOPLIK, ILONA KRETZSCHMAR, City College of CUNY — We use numerical simulations to study the evaporation of sessile droplets containing Janus particles placed on a heated surface. The droplets are composed of a Lennard-Jones fluid, the particles are rigid spherical sections of an atomic lattice and heating is controlled through the temperature of the (atomistic) surface. The study focuses on the time evolution of the droplets shape, contact angle, velocity field and evaporative flux, as well as the motion of the particles and the effects of the Janus interactions on the structure of the particulate deposit. The results are compared with recent theory and experiment.

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