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**Pick up and remove particles by water droplet using dissipative particle dynamics** CHUANJIN LAN, SOUVIK PAL, University of California Merced, ZHEN LI, Brown University, YANBAO MA, University of California Merced — Particle removal is a crucial concern for many engineering processes, such as, glass cleaning and substrate cleaning, where the removal of nanoparticles is a great challenge. In order to clean the surface without causing any mechanical damage to it, we use water droplets to pick up and remove the nanoparticles. Dissipative particle dynamics simulation is used to model the interaction between the water droplet and nanoparticles, as well as the solid substrate surface. The hydrophilic nanoparticles are successfully cleaned up by water droplet, and the detailed motion of these particles together with droplet is also captured. The results show that the water droplet can be used as an efficient tool for removal of nanoparticles from a surface.

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