Effect of a second component in organic droplet evaporation: initially present versus absorbed during the process

SAHAR ANDALIB, ALI ALSHEHRI, PIROUZ KAVEHPOUR, University of California-Los Angeles — Evaporation of organic liquid has numerous applications ranging from bio-diagnostics to coating technology. Multi-component droplets are often encountered in industrial applications. Even, evaporation of a pure liquid droplet into an environment containing a second substance can result in a multi-component droplet. Despite their omnipresent nature, mechanisms underlying multi-component droplets are not yet fully understood. Present work studies the similarities and differences of the effect of a second component during evaporation of a droplet of an organic solvent. In the first case the second component was present in the droplet from the beginning of evaporation process, while in the second case the second component gets absorbed or adsorbed during the process of evaporation. Analysis of experimental data provides valuable insight into wetting and spreading phenomena of multi-component systems.

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Date submitted: 01 Aug 2019