

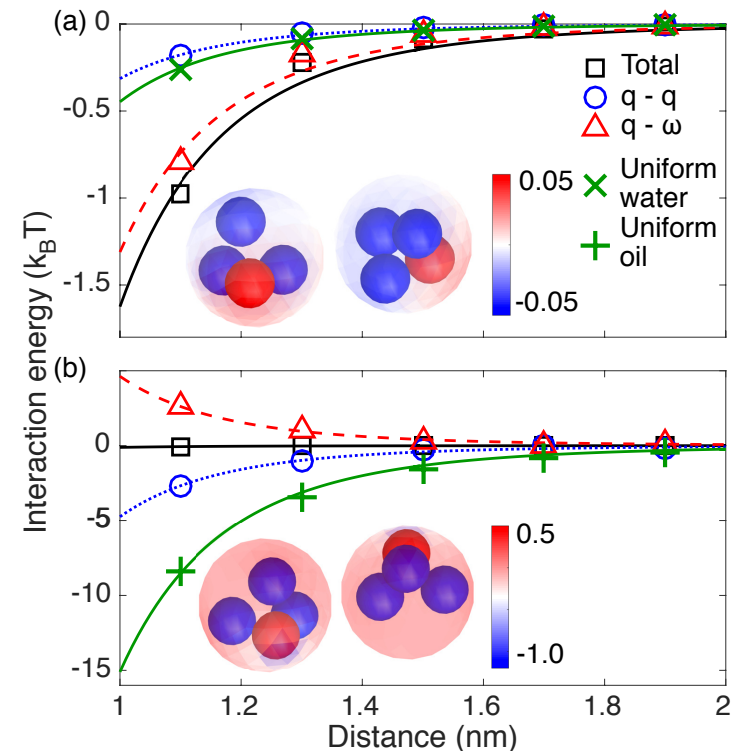
Surface Polarization Effects in Ion-Containing Emulsions

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Using coarse-grained molecular dynamics (CGMD) with polarization, we find that the surface polarization plays an important role for inter-droplet interactions:

1. For water droplets in oil, the surface polarization makes the major contribution for the inter-droplet attraction.
2. For oil droplets in water, the surface polarization significantly counteracts the inter-droplet attraction.
3. The surface polarization also indirectly influences the ion-ion interaction by affecting the ion distribution.



The interaction energy between two ion-containing (a) water droplets in oil and (b) oil droplets in water.