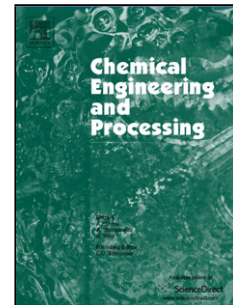


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The droplet-interface coalescence characteristics of water containing nanoparticles in oil under electric fields of different waveforms

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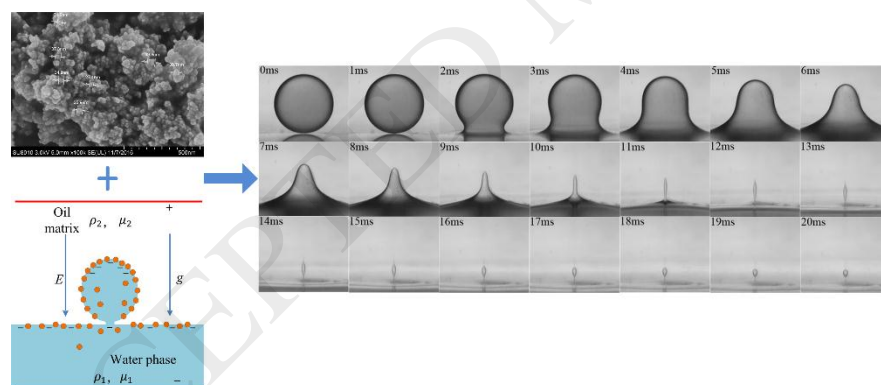
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Graphical Abstract



Highlights

- Existence of SiO₂ nanoparticles affects water droplet-interface coalescence.
- Reduced interfacial tension, increased conductivity are responsible for effects.
- Increasing frequency inhibits the formation of secondary droplets.
- Optimal waveform inhibiting partial coalescence changes with increasing frequency.

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