Electrospraying

Subjects: Food Science & Technology

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Electrospraying disperses a liquid into fine droplets by charging it at a nozzle and letting the electrostatic repulsion overcome the surface tension. The cone-jet mode gives the narrowest droplet distribution, and it exists only within a window of flow rate and applied voltage [1]. The droplet size scales with the flow rate and with the conductivity of the liquid, so a change in formulation shifts the operating window [2]. Because the droplets dry quickly, a dissolved polymer forms a particle and a dispersion forms a capsule with a core [3]. The process runs at ambient temperature, which is what makes it suitable for a heat-sensitive active [4]. The throughput per nozzle is low, and scaling up requires an array of nozzles rather than a larger one [5].

electrohydrodynamic atomization | cone-jet mode | droplet size | encapsulation | ambient processing | throughput | charged droplet

References

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