

Exploding drops on lubricated surfaces

Marcus Lin, Peng Zhang, Dan Daniel*

Introduction

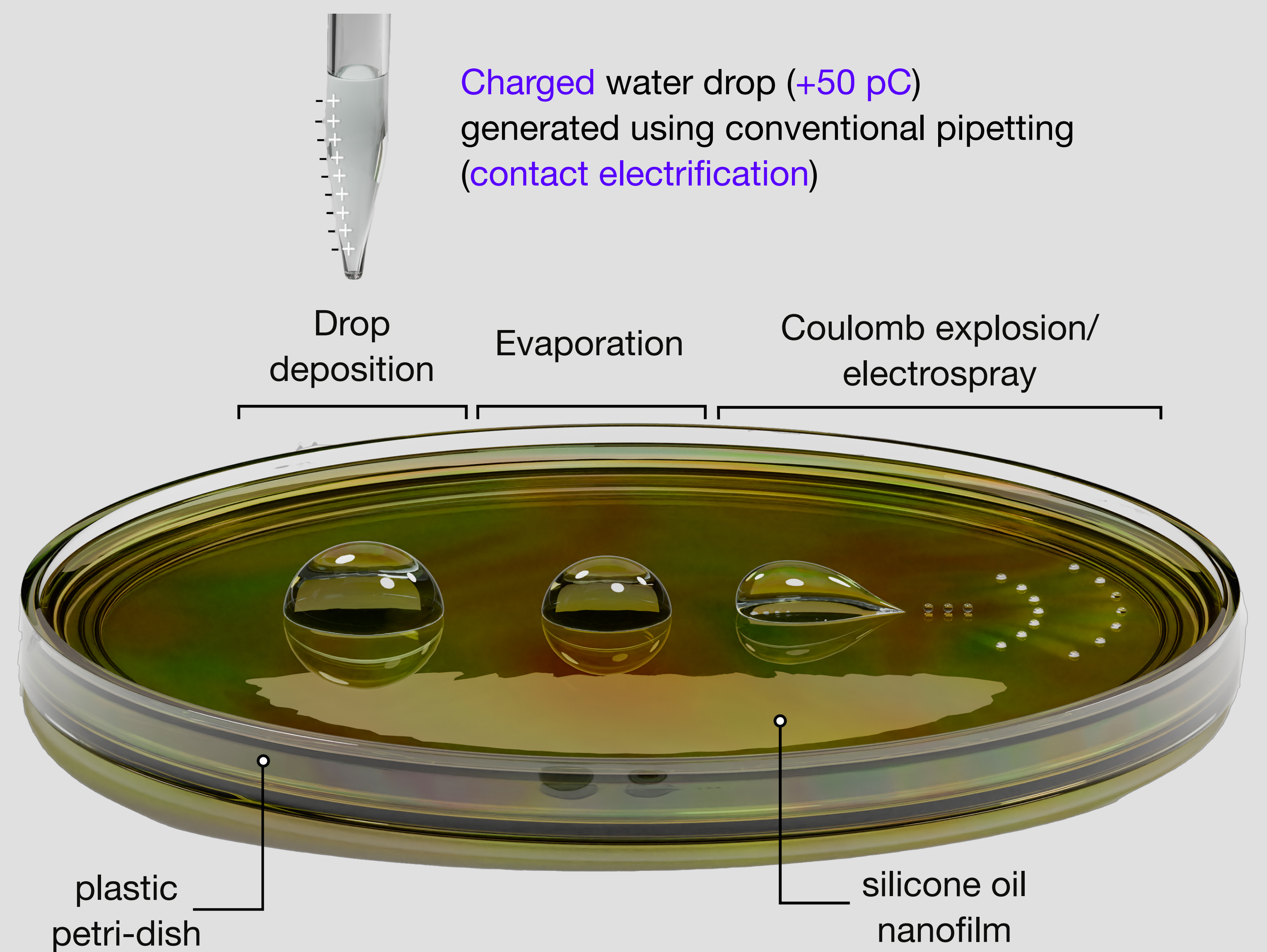
Electrospray has wide-ranging applications, from electrospray ionization to nanoencapsulation of drugs. However, in typical electrospray technology, a high voltage > 10 kV is needed to atomize liquid into fine droplets.

Our approach: Electrospray-in-a-drop

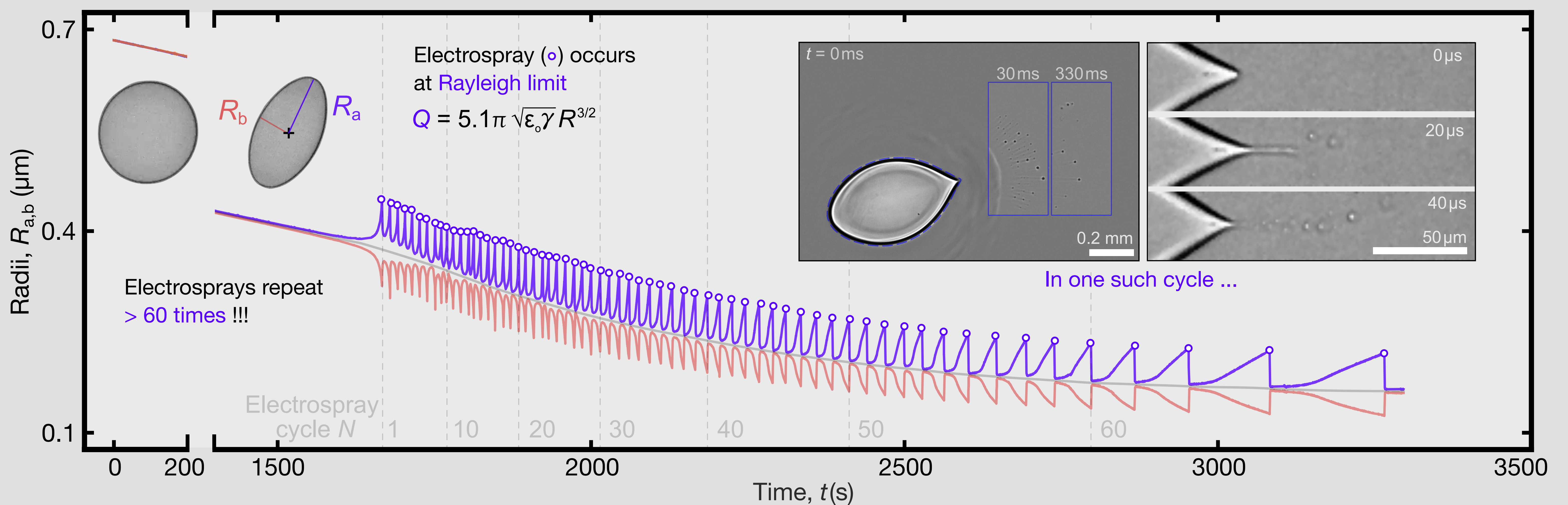
Here, we show how electrosprays can be spontaneously generated for an evaporating, millimetric water drop sitting on a petri-dish lubricated with an oil nanofilm.

Our **electrospray-in-a-drop** system does not require an external voltage source or complex instrumentation.

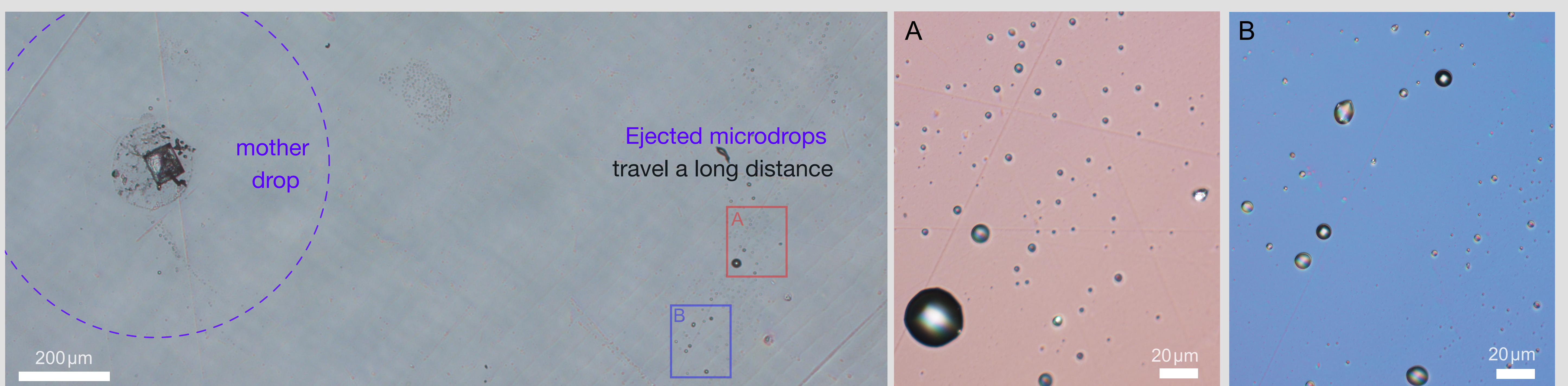
Electrospray-in-a-drop



Multiple Coulomb explosions / electrospray events



Microscopic / nanoscopic material fabrication



Potential applications

Dissolving 0.2 wt% salt (NaCl) into water drops allows us to generate micro-/nanocrystals, demonstrating the potential for **micro-/nanoscopic material fabrication**, e.g., making **electrospun fibres** and **micro-hydrogels** for biomedical applications.



Read our paper :)

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