## **Supporting Information**

## Charge accumulation kinetics at a liquid-solid interface depend on liquid chemistry

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Figure S1. Charge accumulation rates of 1M CaCl<sub>2</sub> contacting with FEP.



**Figure S2. Relationship between solution concentrations and charge accumulation rates.** (a and b) Charge accumulation rate curves for 1.5 M and 0.5 M CaCl<sub>2</sub> solutions. (c) Charge accumulation rates for different concentrations of CaCl<sub>2</sub> solutions.



**Figure S3. Current curves and corresponding transferred charges of CaCl**<sub>2</sub> **droplets of different concentrations at first droplet.** (a) Current curves for CaCl<sub>2</sub> droplets of different concentrations. (b) Transferred charges of CaCl<sub>2</sub> droplets of different concentrations.