# Swab spray mass spectrometry: An ambient ionization method for the analysis of surfaces

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In the past two decades, a myriad of ambient ionization mass spectrometry techniques have been presented. Among them "swab spray", which is based on direct ion generation from swabs, has demonstrated a great potential for clinical and forensic applications.[1] Basically, the swab head enables easy and effective sample collection on various surfaces and acts as a depleting sample reservoir during analysis. Ionization is induced by solvent flow and the high voltage directly applied to the swab head by the help of a custom-made ion source. The formation of a visible Taylor cone, jet region, and spray plume, where the analyte ions undergo electrospray-based ionization, is observed.
In the current work, the effects of ion source parameters, swab head properties, and solvent composition are investigated.

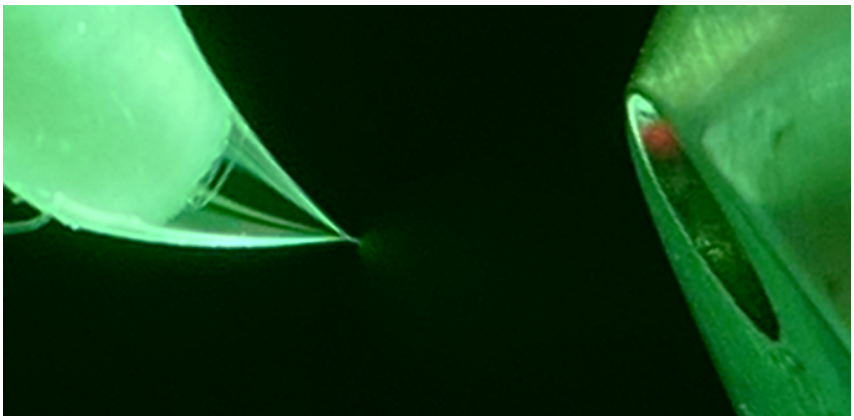

Figure 1: Generation of a Taylor cone, droplet jet, and spray plume at the tip of a swab.

[1] A.K. Jarmusch, V. Pirro, K.S. Kerian, R.G. Cooks, *Analyst* **2014**, *139*, 4785.