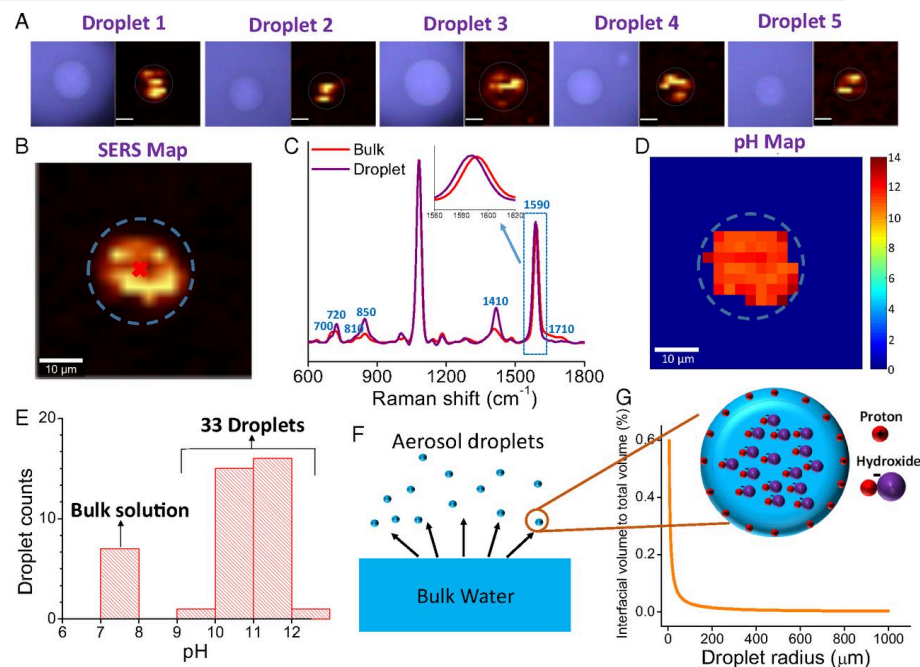


Quantification of the pH of Aerosol Droplets by Nanoprobe-Based Sensing

- I Atmospheric aerosol droplets are well recognized for their capacity to affect both local-scale as well as global air quality.
- I First ever direct pH measurement of aerosol droplets using developed novel Raman based techniques by NanoEarth co-PIs' team efforts.
 - ◆ Prior to this work, efforts to measure the acidity (or basicity) of aerosols at the individual droplet level had been largely unsuccessful.
- I The technique revealed spatial gradients of pH in droplets and extends pH characterization to confined water environments; deepening our understanding of aerosol chemistry and the air/water interface.



Two-dimensional characterization of the pH inside aerosol droplets

Wei, H., Vejerano, E. P., Leng, W., Huang, Q., Willner, M. R., Marr, L. C., and Vikesland, P. J., (2018). Aerosol Droplets Exhibit a Stable pH Gradient. *Proceedings of the National Academy of Science*, 115(28), 7272-7277.