

## A GENERAL PATH TO INFRARED SPECTROSCOPY OF SINGLE MOLECULAR IONS

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Definitive identification of single molecules is a natural limit of analytic chemistry. While single molecule spectroscopy is routinely performed on select classes of molecules, a general method for identifying individual molecules - including molecules without optical transitions - is beyond the current state of the art. I will present progress from my group towards a general method for realizing infrared spectroscopy, and thus identification, on molecular ions with masses between 20 and 200 amu. While the technique presented today will have modest spectral resolution, I will also present straightforward extensions that will allow for high-resolution spectroscopy of single molecules, and chiral recognition of single molecules.