Near-Ambient Pressure Velocity Map Imaging achieves with differential pumping and extra electrodes

**Methods**

- VMI optics are designed to be compact, due to the mean free path decreases with elevating pressure.
- COMSOL multiphysics simulation is performed for VMI configuration and ion trajectory.
- This equipment consists of Laser source, reaction chamber and MCP chamber.
- VMI and DC slicing[2,3] are demonstrated for photodissociation of leaked N₂O at ~203 nm, the mean speed and anisotropy parameter are in agreement with the literature data[4].

**Next Steps**

- This system is being developed as part of a molecular beam surface scattering instrument.
- The technique may be applied in a range of other areas where higher pressures are either interesting or unavoidable, e.g. with liquid jets and surfaces.

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**References**