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Protonated 1,4-difluorobenzene $C_6H_5F_2^+$:

A promising precursor for proton-transfer chemical ionization.

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HIGHLIGHTS :

- Protonated 1,4-difluorobenzene $C_6H_5F_2^+$ is a soft PTR reagent for oxygenated VOCs.
- Protonated 1,4-difluorobenzene induces less fragmentation than H_3O^+.
- Trace analysis in air using $C_6H_5F_2^+$ has been performed on standard VOC mixture.

GRAPHICAL ABSTRACT