

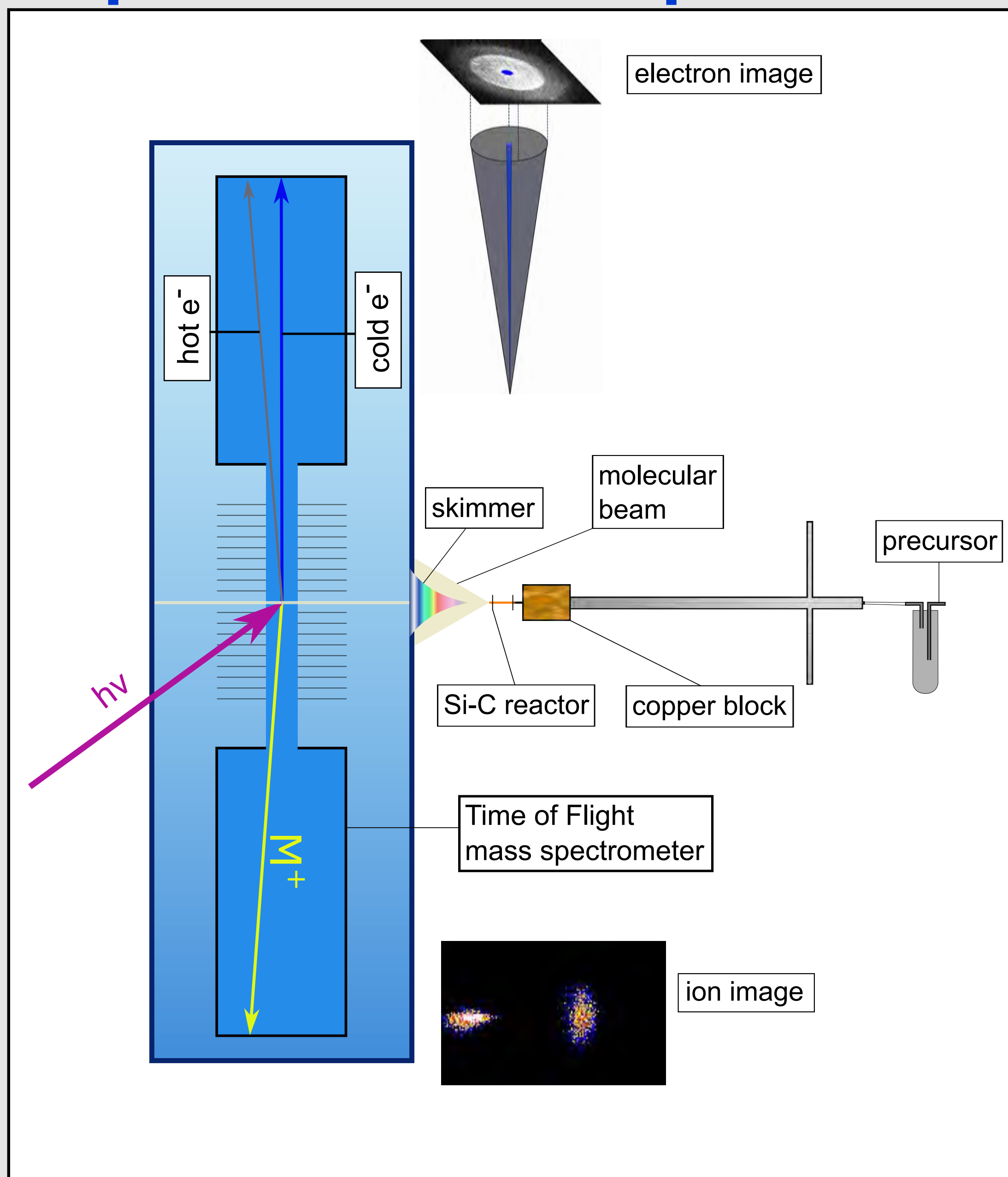
# Threshold Photoelectron Spectroscopy of fragments of $\text{As}(\text{CH}_3)_3$ and $\text{Sb}(\text{CH}_3)_3$

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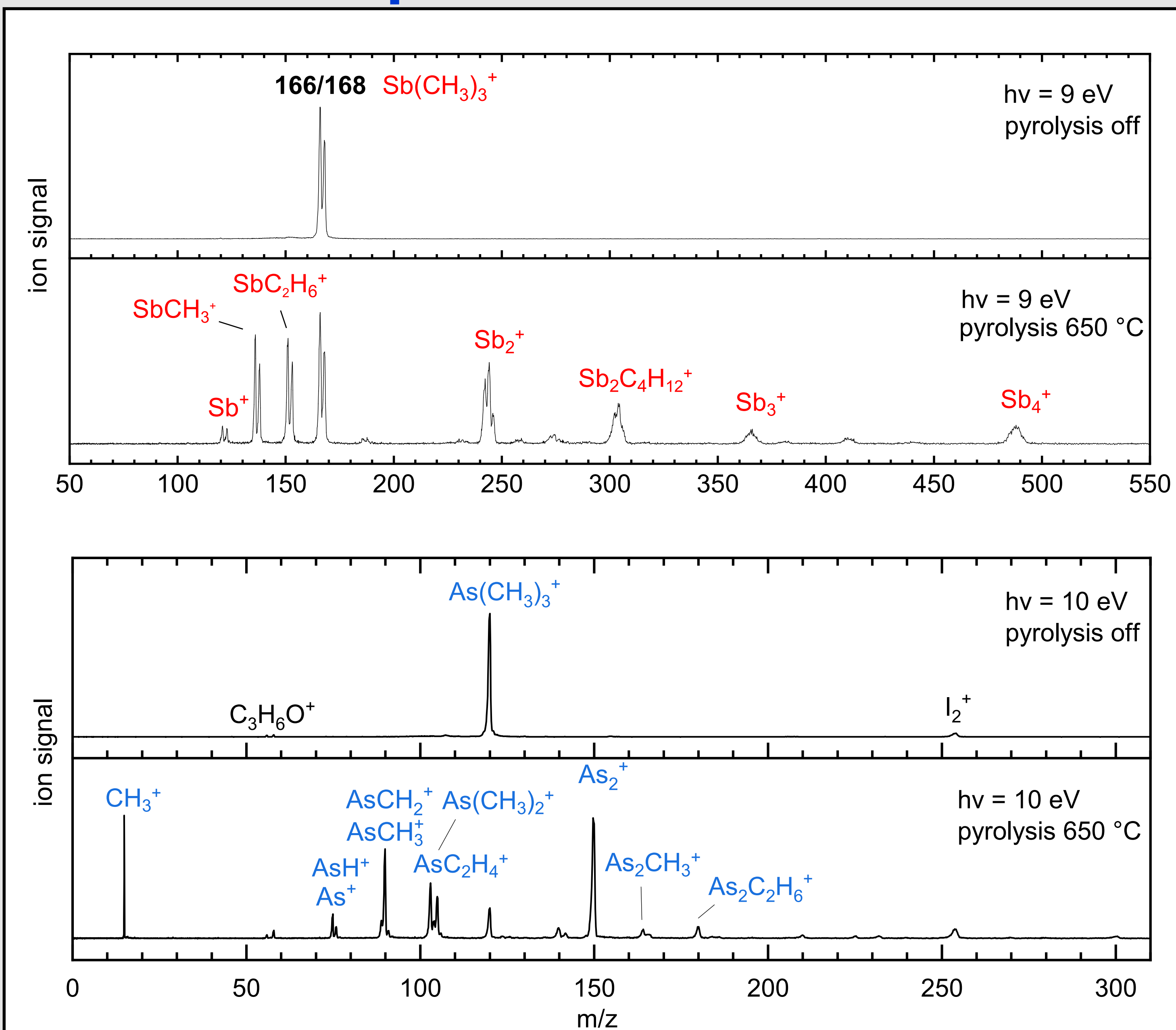
## Background

Threshold Photoelectron (TPE) spectroscopy is a powerful tool combining conventional photoelectron spectroscopy with photoelectron-photoion-coincidence (PEPICO) spectroscopy and tunable synchrotron radiation to produce high resolution valence ionisation spectra. Our group already investigated the pyrolysis products of methylated group V compounds with N, P and Bi as the main atom. In our experiment, we now fill the gap by pyrolysing the precursors  $\text{As}(\text{CH}_3)_3$  and  $\text{Sb}(\text{CH}_3)_3$ . The TPE spectra of the fragments are analysed with quantum chemical calculations to gain a better understanding of the fifth main group chemistry.

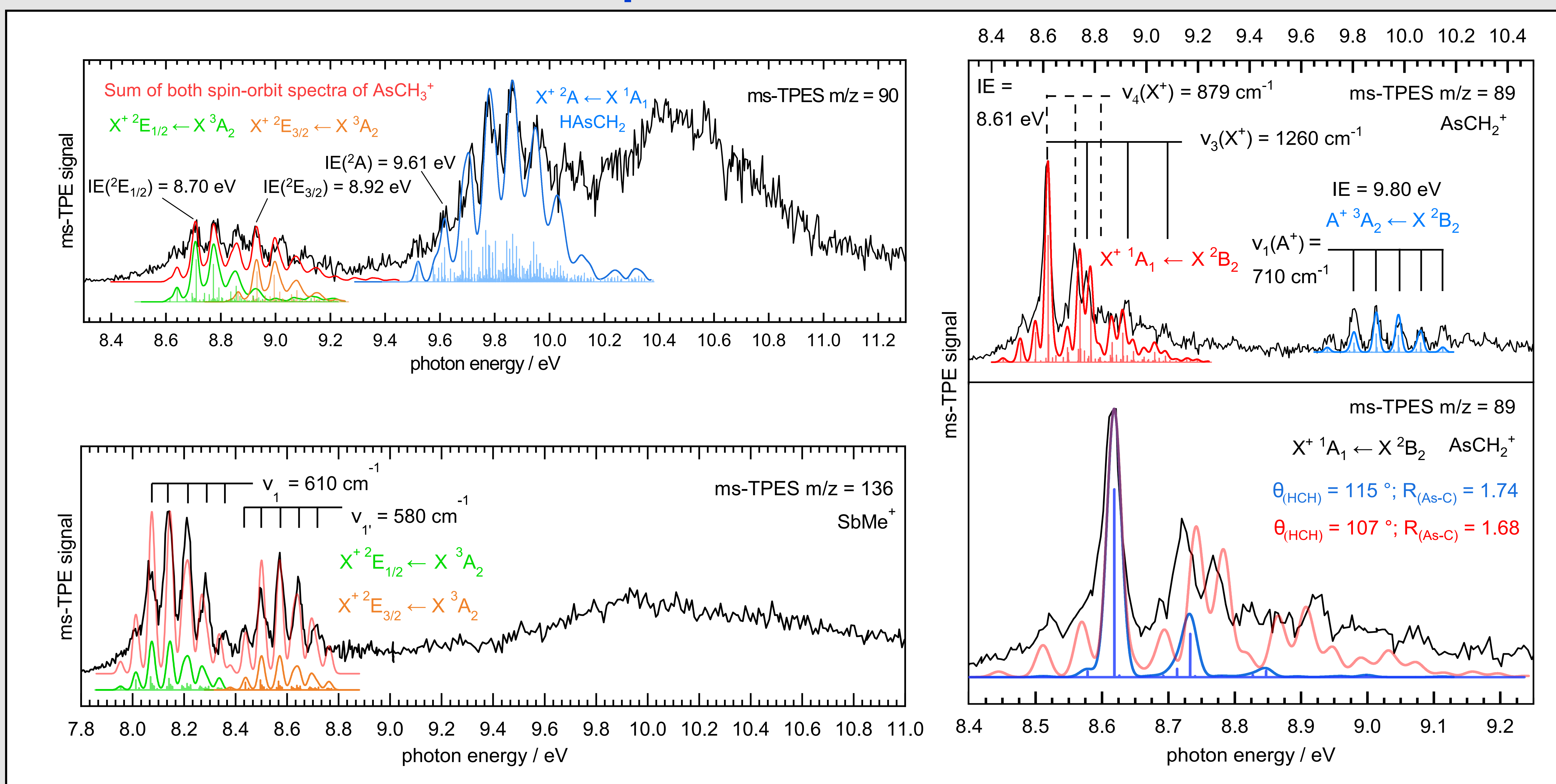
## Experimental Setup



## TOF mass spectra

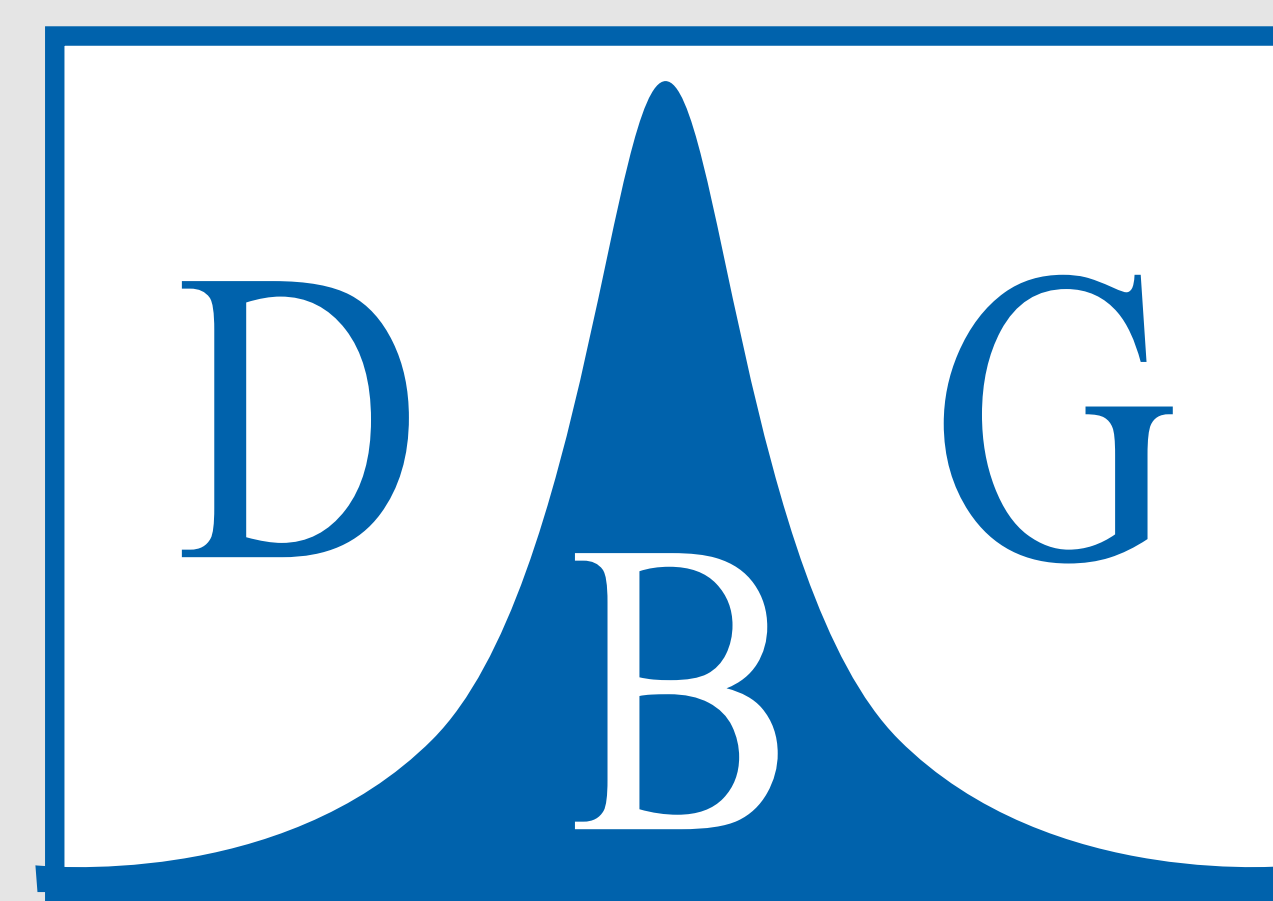
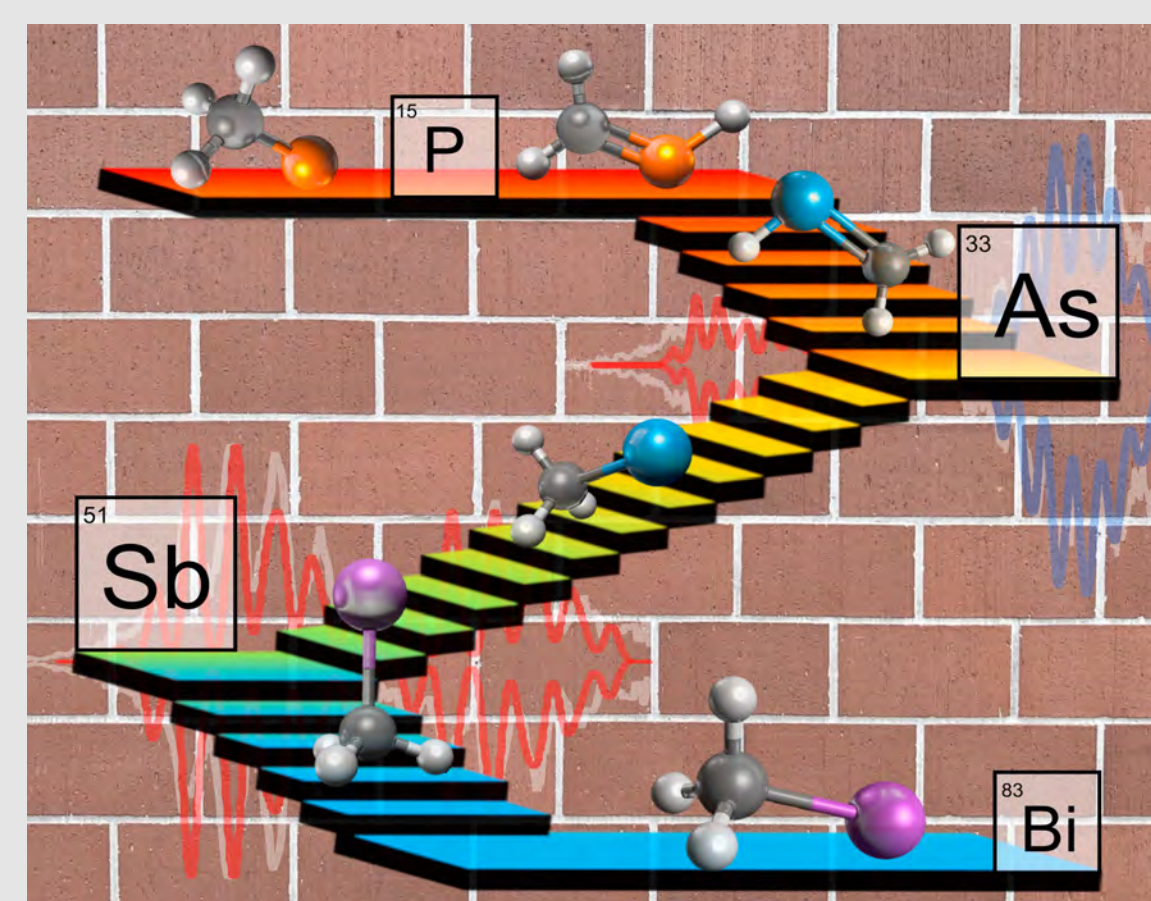


## Threshold Photoelectron Spectra

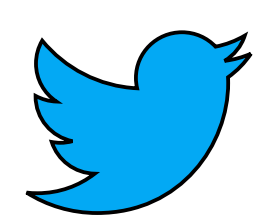


## Summary

Precursor	E	HECH	H <sub>2</sub> E=C	E=CH <sub>2</sub>	HE=CH <sub>2</sub>	E-CH <sub>3</sub>
H <sub>2</sub> NNH(CH <sub>3</sub> )	N	✓	✓	✓	✓	---
P(CH <sub>3</sub> ) <sub>3</sub>	P	---	---	✓	✓	✓
As(CH <sub>3</sub> ) <sub>3</sub>	As	---	---	✓	✓	✓
Sb(CH <sub>3</sub> ) <sub>3</sub>	Sb	---	---	---	---	✓
Bi(CH <sub>3</sub> ) <sub>3</sub>	Bi	---	---	---	---	✓



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