

# Chemische Physik – AG Beyer

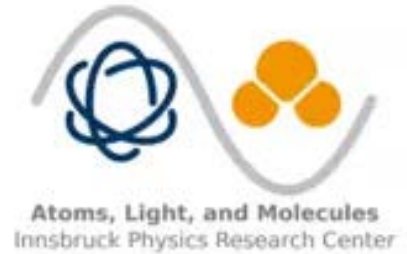


## Current Group

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Ethan Cunningham  
Lorenz Grünewald  
Jessica Hartmann  
Manuel Plattner

FWF

Der Wissenschaftsfonds.



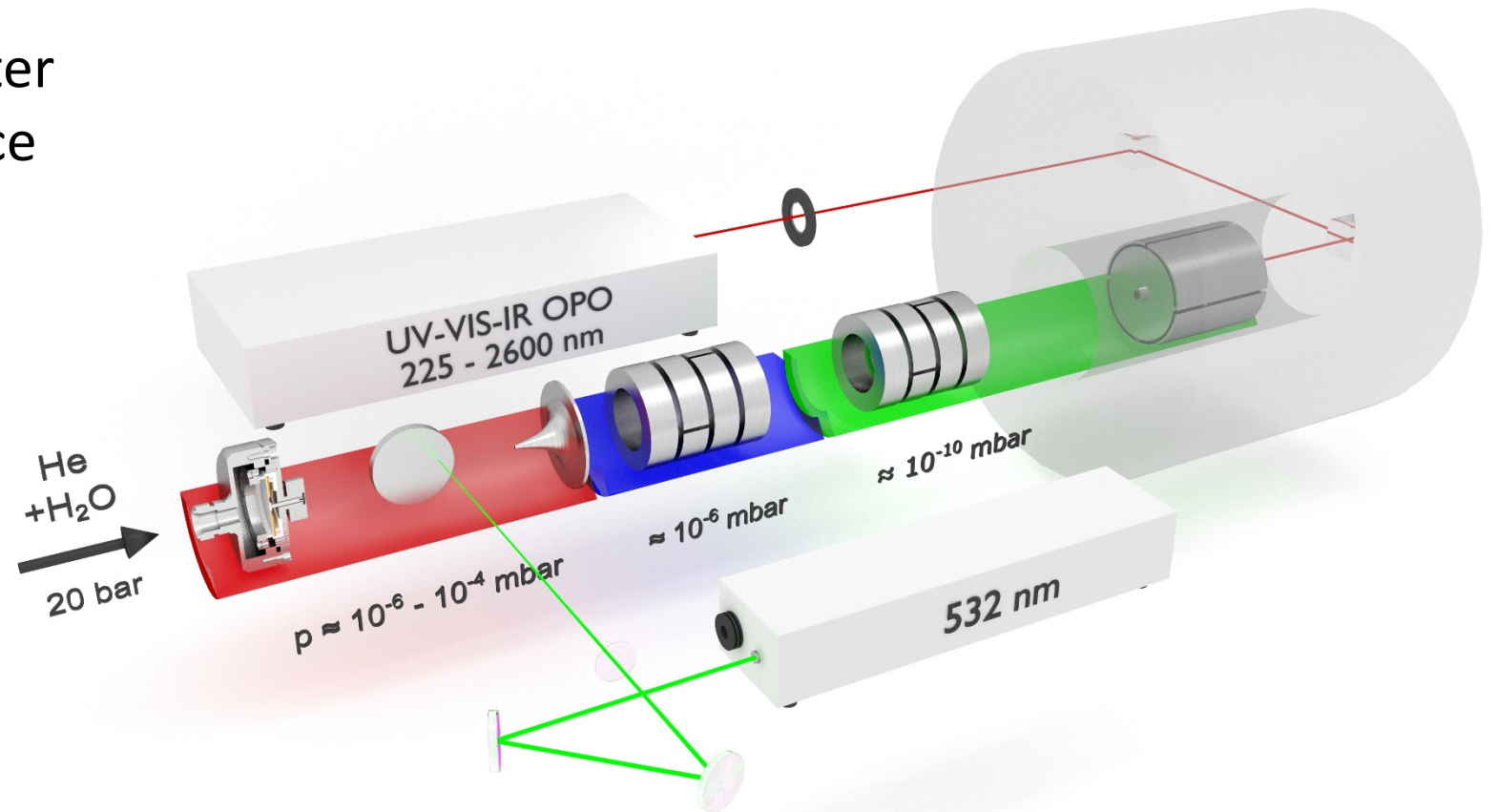
FWF



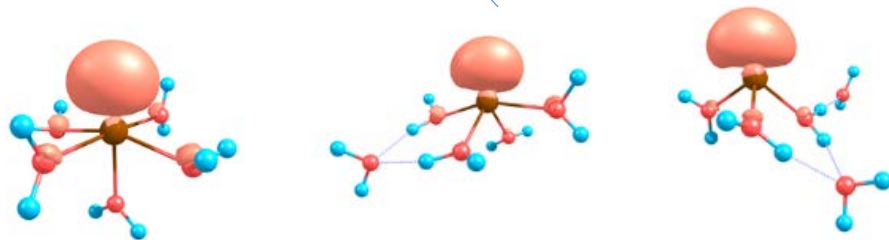
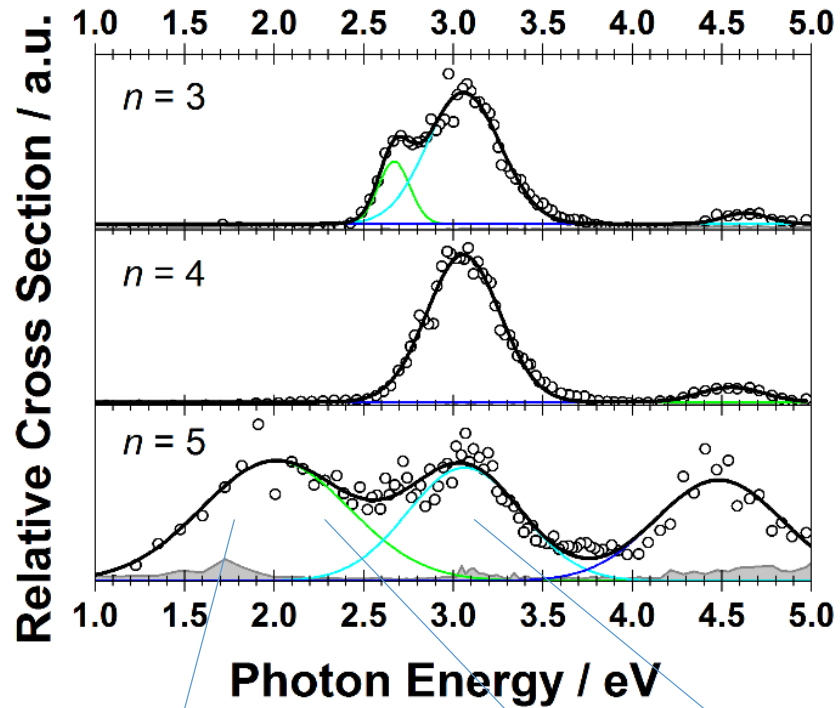
# Experimental Workhorse for Gas-phase Clusters

- FT-ICR mass spectrometer
- Laser vaporization source
- Cooled cell (T = 80 K)
- Ultra high vacuum
- Tunable laser system

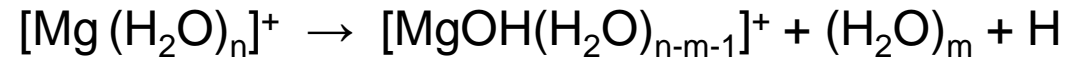
$$\omega_c = \frac{z}{m} B_0$$



# Hydrogen Formation at $\text{Zn}_2^+(\text{H}_2\text{O})_n$



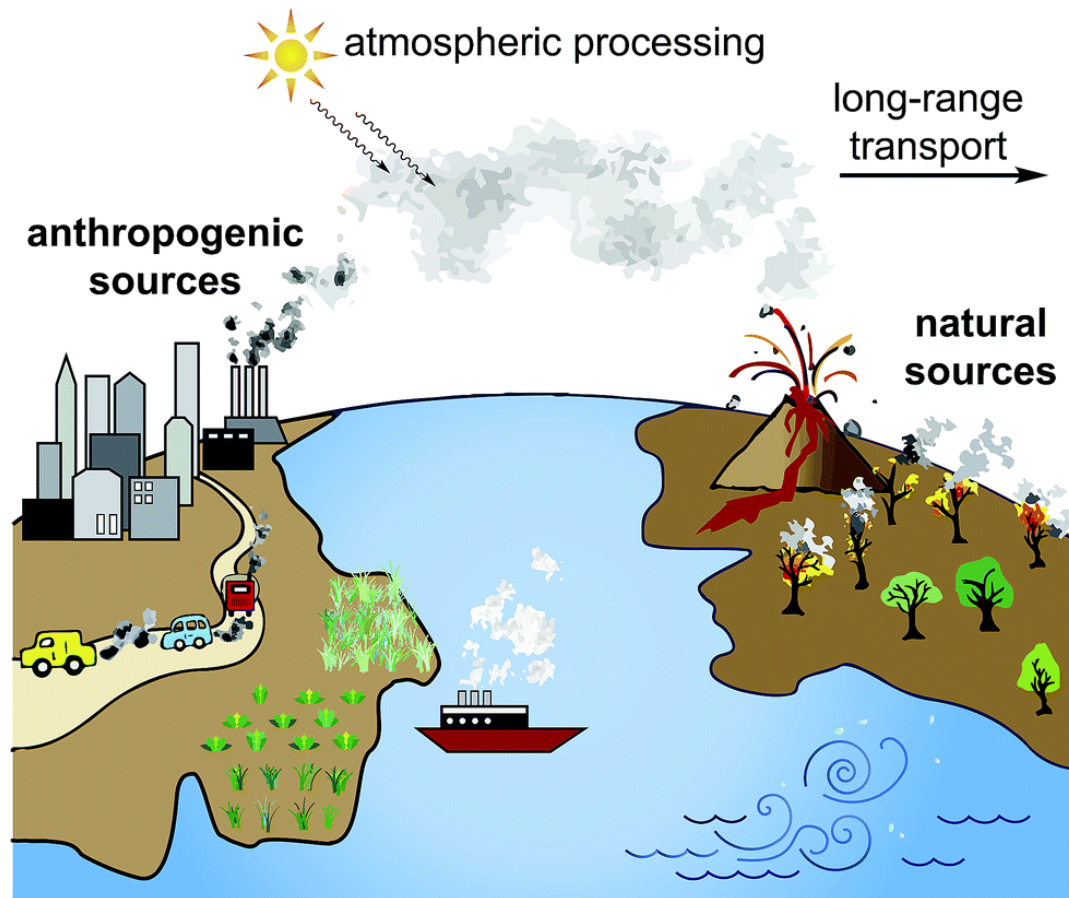
**What we know for Magnesium:**



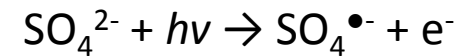
**The idea for  $\text{Zn}_2^+(\text{H}_2\text{O})_n$ :**

Photoexcitation of  $\text{Zn}_2^+$  leads to  $\text{Zn} + \text{Zn}^+$ , embedded in water: Chemistry of neutral Zn atom with  $\text{H}_2\text{O}$  can be probed directly by mass spectrometry and laser spectroscopy

# Laboratory studies of sea salt aerosols



Suggested problem:



$e^-$  may be transferred to  $\text{Na}^+$ ,  $\text{Mg}^{2+}$ , organic photosensitizer

investigate the light-triggered formation of  $\text{SO}_4^{\bullet-}$ , an important reactive ion in the atmosphere

# K-Regio-Projekt GALANT: Industrielle Reinstgasanalytik

- Untersuchung von Reaktionswegen zur selektiven chemischen Ionisation
- Entwicklung neuer Ionenquellen
- angewandte Forschung in Zusammenarbeit mit IONICON, Sunplugged und CGS

