

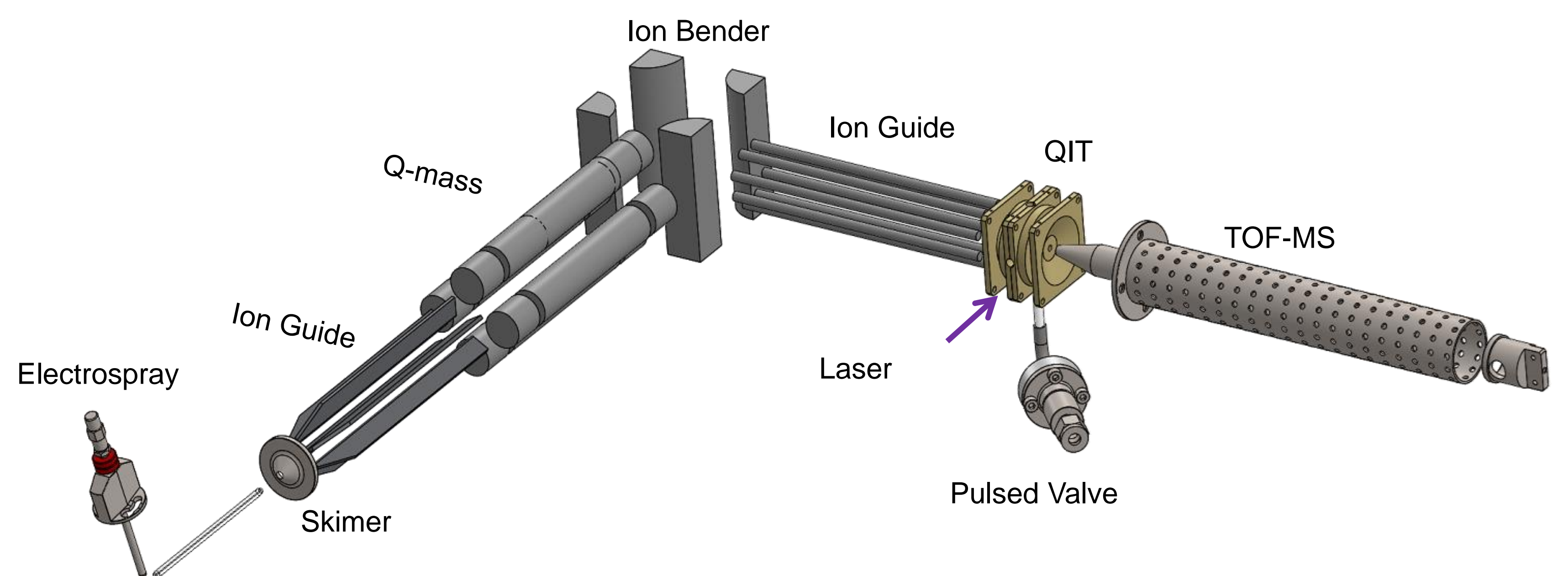
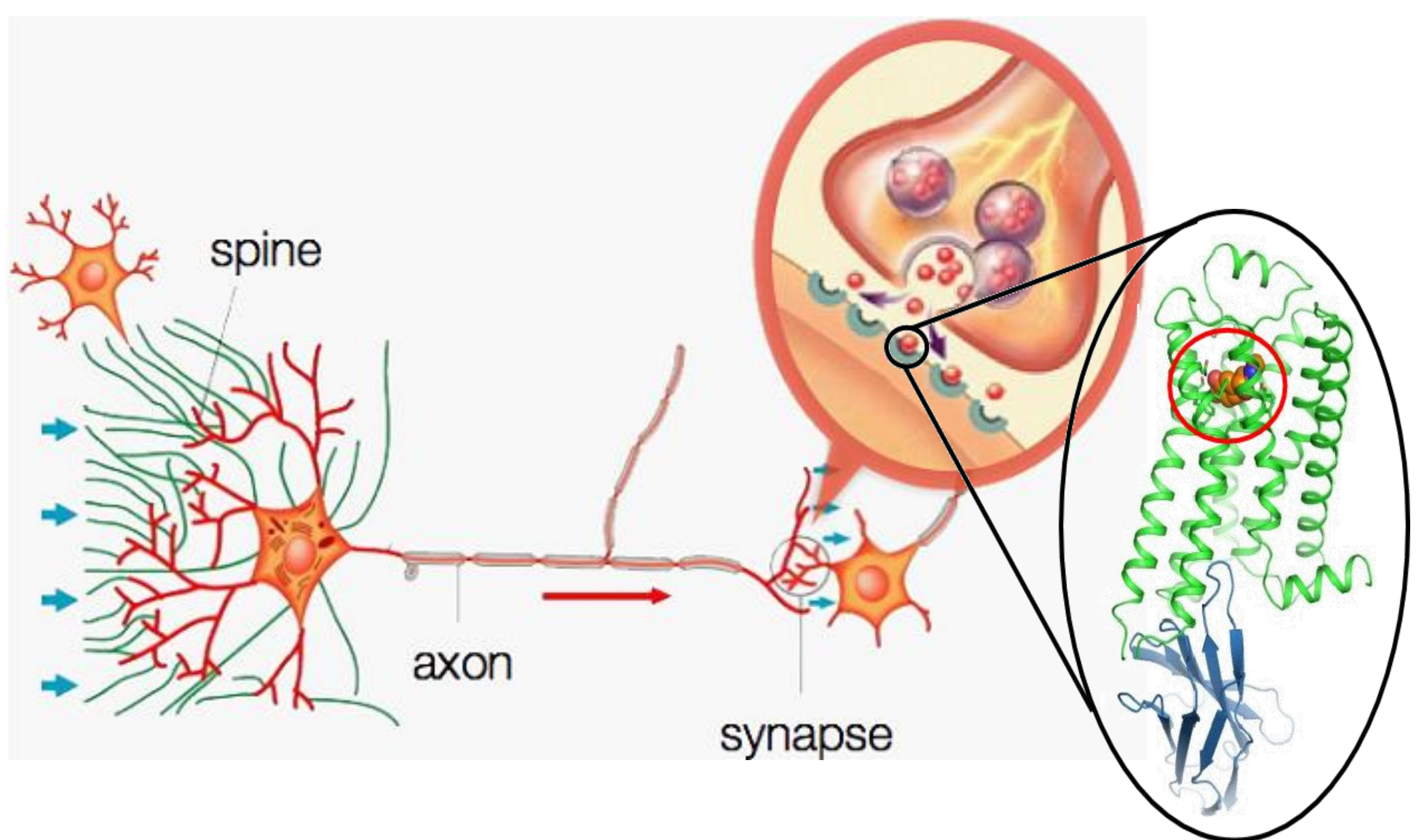


Probing Molecular Functions by Lasers

Molecular Functions Division, Laboratory for Chemistry and Life Science

<http://www.csd.res.titech.ac.jp/index.html>

- Cold Ion Trap Laser Spectroscopy for Biomolecules
- Bottom-up Approach to Molecular Recognition
- Picosecond Laser Spectroscopy for Chemical Reactions
- Development of Multi-color Laser Spectroscopy

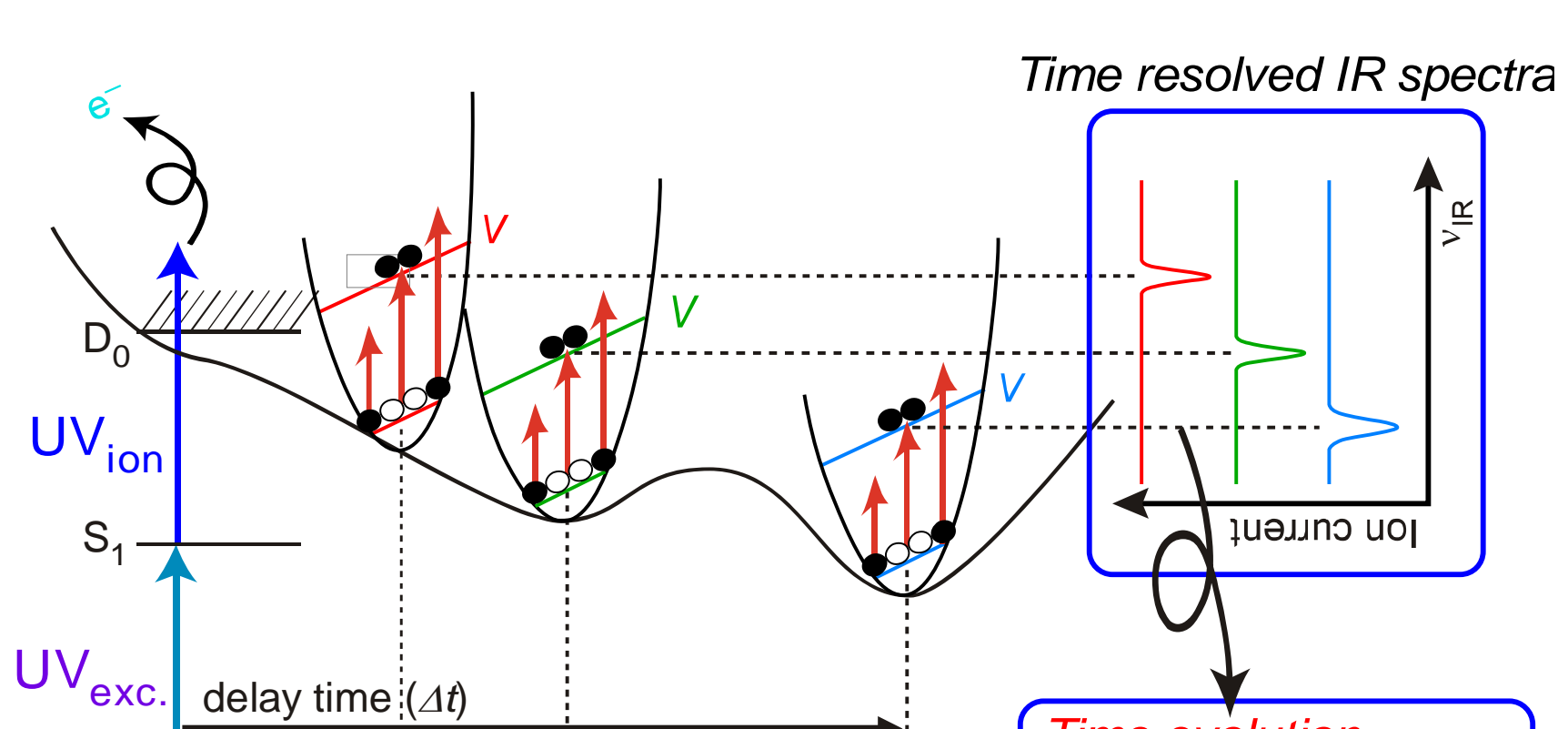
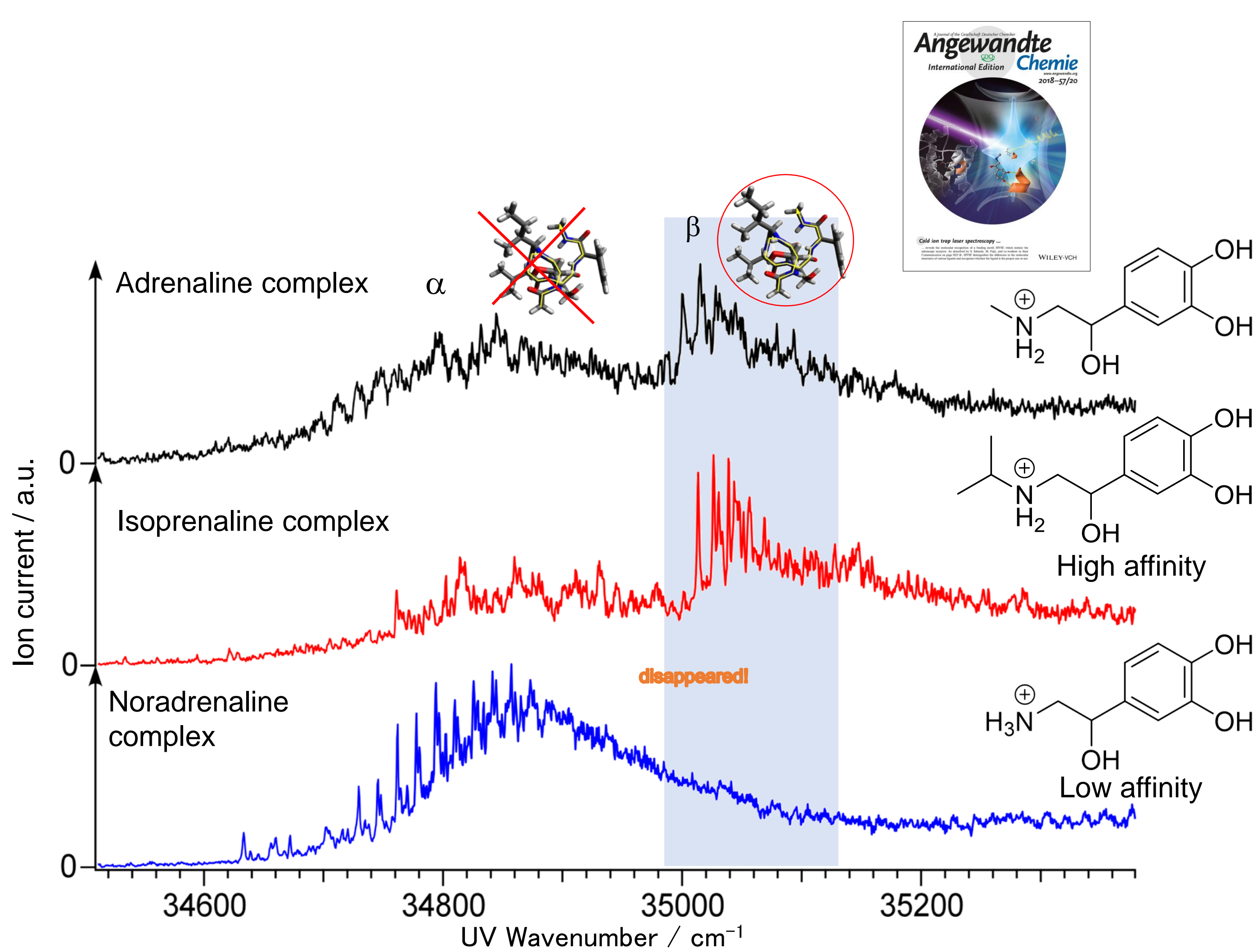


Molecular Recognition in Neurotransmission

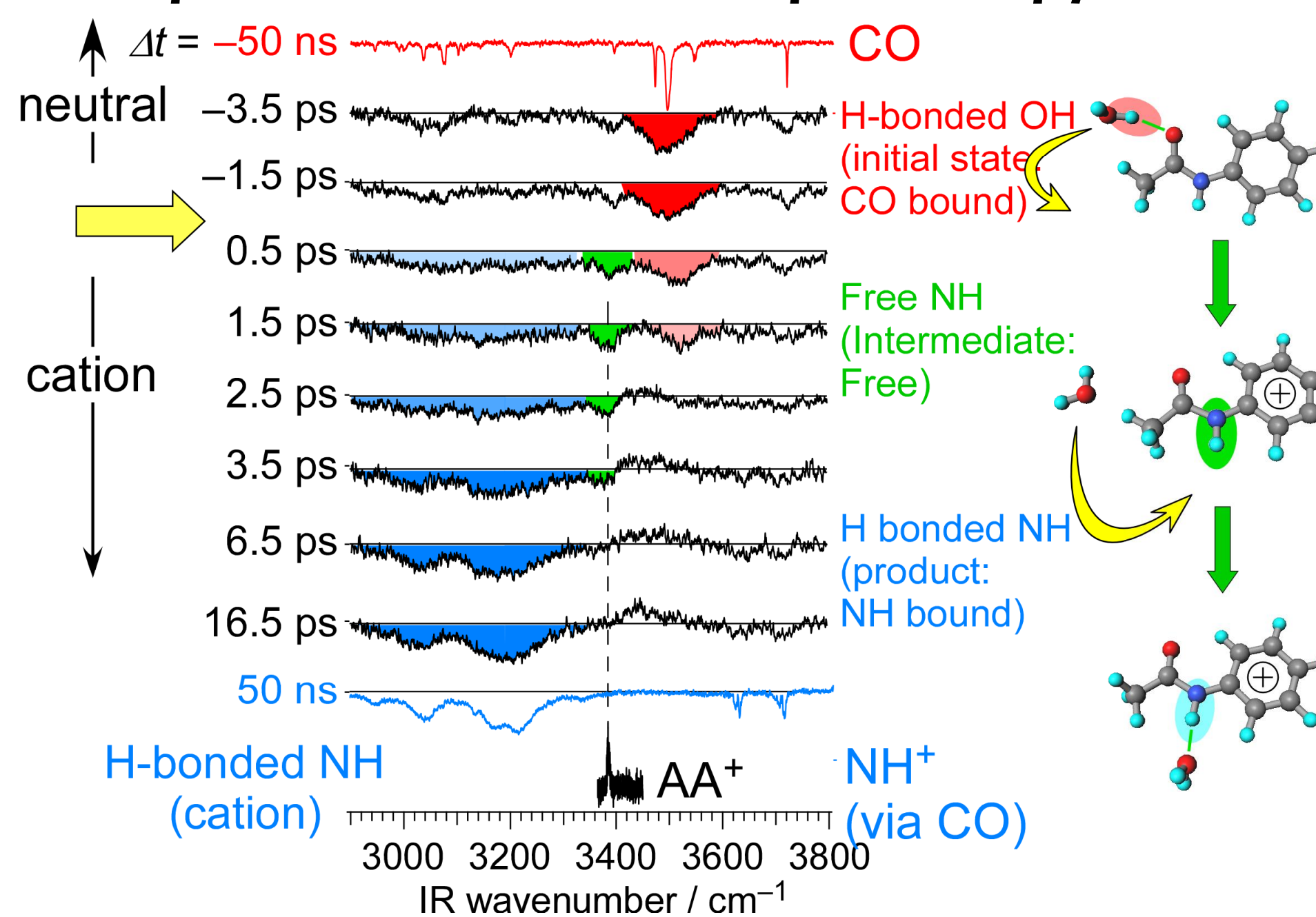
- Neurotransmitters / Receptors are Key & Lock relation
 - Fundamental Mechanism has not been established.
 - Bottom-up approach
- Study on molecular recognition by spectroscopy of binding motif in receptors and ligands

Electrospray / Cold Ion Trap Laser Spectrometer

- UV/IR spectra of biomolecules at low temperature gas phase
- Clear structural analysis of biomolecules and their clusters



Principle of Time-Resolved IR Spectroscopy



Picosecond Time-Resolved IR Spectra of Acetanilide-Water Cluster

Reaction Dynamics Probed by Three color Picosecond IR Spectroscopy

- Real-time probe of solvation dynamics at molecular level triggered by photoionization.
- Decoupling of electron and proton in H-atom transfer.

Very Important Paper

