Photochemical Charge Control in High Vacuum

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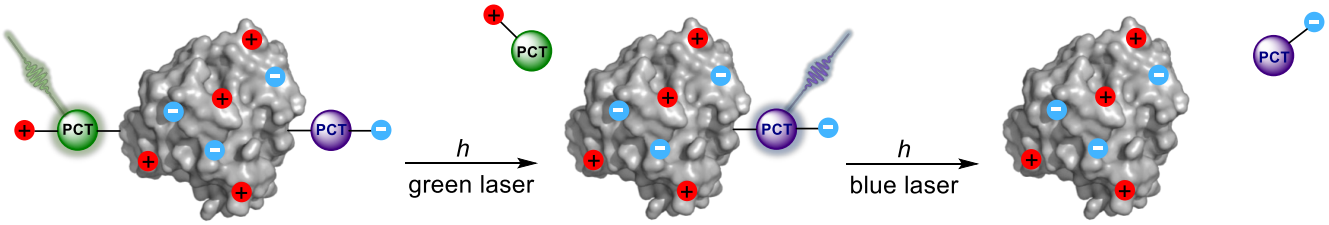
We synthesize, characterize and test tailored photo-active tags to softly charge and neutralize peptides and proteins on demand in high vacuum.[1,2.3] The work aims to enable analysis of an underexplored material class, namely neutral beams of isolated biopolymers.



Based on the well-researched bodipy chromophore,[4,5,6] we developed a bodipy pyridinium model compound for heterolytic cleavage in the gas-phase under irradiation at 532 nm. An optimized tag was attached to insulin under aqueous conditions, and the charge state of insulin efficiently reduced by photocleavage in high vacuum.

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