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Ultrafast Dynamics of Ionized Tryptophan in Aqueous Solution via Few-Femtosecond Transient Absorption Spectroscopy MUHAMMAD SHAFIQ BIN MOHD YUSOF, TUSHAR DEBNATH, ZHI HENG LOH, Nanyang Technological University — Few-femtosecond optical transient absorption spectroscopy elucidates ionization-induced vibrational coherences and ultrafast dynamics of small biomolecules in aqueous solution. Strong-field ionization of tryptophan (Trp) in basic medium by intense, few-cycle ($\sim$ 6-fs) laser pulses yields the tryptophan radical and the hydrated electron. The tryptophan radical appears at $\sim$ 580 nm in the transient absorption spectrum, overlapping with the broad absorption of the hydrated electron in the visible region. The ultrafast dynamics and vibrational coherences of the tryptophan radical will be presented.

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