Probing the dynamics and interactions of disordered proteins with single-molecule spectroscopy: From disordered complexes to phase separation

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The functions of proteins have traditionally been linked to their folded structures, but many proteins perform essential functions without being folded. Quantifying the highly dynamic and conformationally diverse ensembles of these intrinsically disordered proteins (IDPs) and their interaction mechanisms is an important aspect of understanding their functions. I will focus on highly charged IDPs and illustrate how single-molecule spectroscopy combined with simulations and other methods can be used to probe their dynamics, interactions, and phase separation.