

SPECTROSCOPY OF SiO AND SiO⁺ IN SUPPORT OF ULTACOLD MOLECULE STUDIES

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SiO⁺ was proposed as a candidate for ultracold molecule experiments. Cooling schemes required to prepare SiO⁺ in its ground state require knowledge of state energies, lifetimes and branching of selected SiO⁺ transitions. Knowledge of dissociative transitions is needed to probe state populations of SiO⁺ in the proposed experiments. Finally, efficient loading of SiO⁺ into a trap by photoionization requires studying spectroscopy of neutral SiO. In this talk, I will discuss recent progress in study of SiO and SiO⁺ spectroscopy in our lab and approaches used to address these studies.