

## FOURIER TRANSFORM MICROWAVE LABORATORY DETECTION OF HSiNH<sub>2</sub>

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HSiNH<sub>2</sub> has been detected by means of Fourier Transform Microwave spectroscopy through its fundamental rotational transition ( $J_{K_a, K_c} = 1_{0,1} \rightarrow 0_{0,0}$ ). The molecule was produced in a discharge of a mixture of silane and ammonia heavily diluted in neon in the throat of a pulsed nozzle prior to supersonic expansion. High level *ab initio* calculations at the CCSD(T) level of theory have guided our laboratory search. The fundamental rotational transition has been detected within 0.1% of the predicted frequency and shows expected hyperfine structure from the presence of the nitrogen nucleus. Confirmation of the assignment is provided by the detection of the same transition for several isotopic species at precisely the expected predicted frequency, with the same hyperfine splitting. Microwave-microwave double-resonance techniques have been used to detect a second rotational transition.