LABORATORY DETECTION OF THE NEW CARBON CHAIN RADICAL H_2CCCCN

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The cyanomethyl radical, H_2CCN, was first found in the interstellar medium and then detected in the laboratory in 1988, however, the longer members of this sequence have remained undetected. We report the first detection of the cyanopropynyl radical, H_2CCCCN, in a pulsed-discharge nozzle Fourier transform microwave spectrometer. Four rotational transitions (N=2-1 through 5-4) of both H_2CCCCN and $H_2CCCC^{15}N$ were measured and the complex fine and hyperfine structure was assigned. These results will be presented and the possibility of detecting the next member of the series will be discussed.