SPECTROSCOPIC STUDY OF 2,4,5-TRIMETHYLBENZENE

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ABSTRACT

Multi-substituted benzyl radicals is generated in the jet with a large amount of carrier gas (He) and vibronically cooled electronic emission spectra are observed in a corona excited supersonic expansion(CESE) apparatus. The spectra are analyzed in terms of progressions of the fundamental vibrational modes and molecular structures of multi-substituted benzyl radicals are calculated and compared with experimental data and precursors. For the first time the 2,4,5-trimetylbenzene radicals are generated in a jet and the vibronic emission spectra in the $D_1 \rightarrow D(0)$ transition have been recorded.

Keywords: 2,4,5-trimetylbenzene, Corona discharge, *ab initio* calculation.