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Chirped pulses of microwave radiation as a light source in Fourier transform microwave spectroscopy STEPHEN COOKE, University of North Texas, GARRY GRUBBS II, CHRISTOPHER DEWBERRY — With recent advances in digital-to-analog and analog-to-digital speeds the possibility of performing high resolution ($<$ 100 kHz), broadband ($>$ 2 GHz per acquisition event) pure rotational spectroscopy has been realized. We have constructed several spectrometers of this type and will demonstrate their benefits. Target systems include mixed halogenated systems, functionalized hydrocarbons, and heavy metal-containing systems. Information obtained relates to molecular geometric structures, group electronegativities, and molecular electronic structures.

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