



*Single crystal of bispicolinate Cu(II) complex, diluted in the isomorphous diamagnetic Zn host*

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**Field strength:** 14 MHz (328 mT)

**Why is this your favorite spectrum?**

This is an EPR-detected NMR spectrum of paramagnetic copper with frequencies above 100 MHz at a magnetic field of only 328 mT! The lowest frequencies at 14 MHz are proton NMR transitions. Higher nuclear frequencies are NMR transitions of copper-63 including both strong hyperfine coupling to its own unpaired electron and quadrupolar coupling.

This 2D electron spin echo envelope modulation (ESEEM) spectrum is acquired by applying two microwave chirp pulses over a bandwidth of almost 1 GHz centered at 9.5 GHz. The EPR echo signal is digitized with a 2 GHz sampling rate, enabling the first ultra-wideband EPR/NMR correlation spectrum. Previously, the excitation bandwidth of monochromatic pulses did not allow to obtain such spectra. Published in: Segawa, T. F.; Doll, A.; Pribitzer, S.; and Jeschke, G. J. *Chem Phys*, 143, 044201 (2015).