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Electroplated waveguides to enhance DNP and EPR spectra of silicon and diamond particles

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Table S1: Experimental T_{1e} relaxation times of different radicals at different temperatures, measured by LOD, 7 T. Samples: 50 mM 4-oxo-TEMP in 1:1 (*v*/*v*) water/glycerin, nano-diamonds (636428-1G, <10 nm, Aldrich), micro-diamonds (MSY 8-12 µm, Microdiamant AG), silicon particles (P28A002, 1-20 µm, Alfa Aesar).

Temperature	**T_{1e} TEMPO**	**T_{1e} nano-diamonds**	**T_{1e} micro-diamonds**	**T_{1e} silicon particles**
5 K	605.4 µs	77.0 µs	490.7 µs (99.3%) 17.0 µs (0.7%)	359.5 µs (99.6%) 8.8 µs (0.4%)
7 K	599.3 µs	55.4 µs	496.4 µs (99.4%) 14.2 µs (0.6%)	297.9 µs (96.1%) 15.9 µs (3.9%)
10 K	591.3 µs	37.5 µs	485.5 µs (98.9%) 24.5 µs (1.1%)	242.4 µs (87.0%) 19.6 µs (13.0%)
15 K	566.6 µs	27.3 µs	459.5 µs (99.1%) 17.7 µs (0.9%)	209.8 µs (90.6%) 12.6 µs (9.4%)
20 K	518.4 µs	22.4 µs	462.2 µs (99.5%) 11.6 µs (0.5%)	186.9 µs (90.6%) 9.4 µs (9.4%)

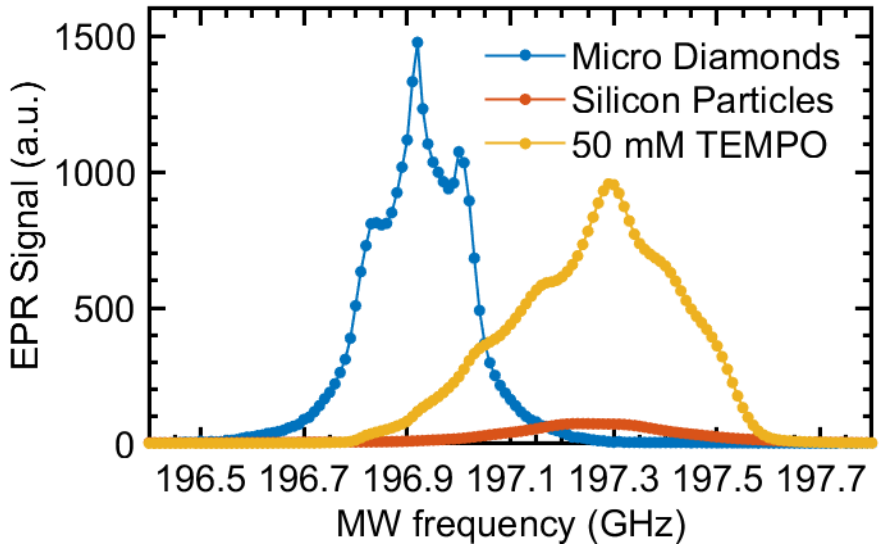

Fig. S1: LOD-EPR spectra of micro diamonds (blue), silicon particles (red) and 50 mM 4-oxo-TEMPO in 1:1 (*v*/*v*) water/glycerin (yellow), 7 T at 20 K, 200 mW microwave output power.

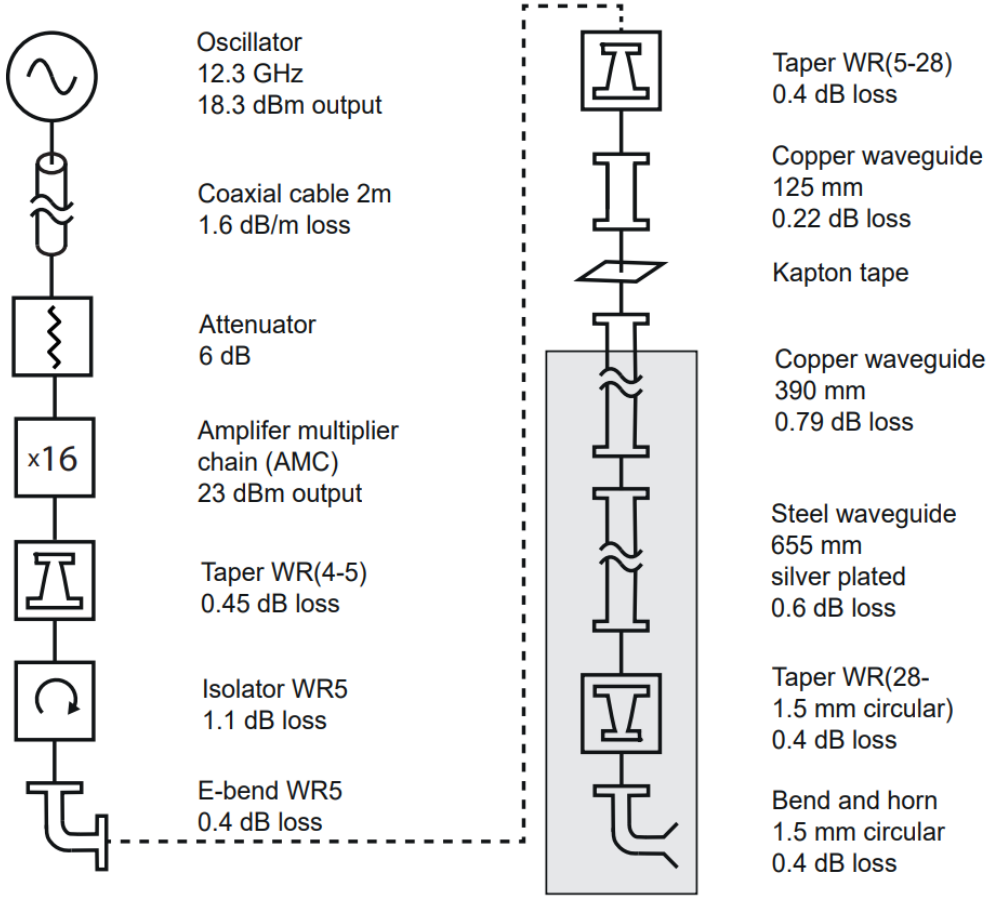

Fig. S2: Schematic depiction of the microwave chain with all components of the 7 T DNP polarizer. Components in the grey box are located inside the cryostat, which in turn sits in the 7 T magnet.