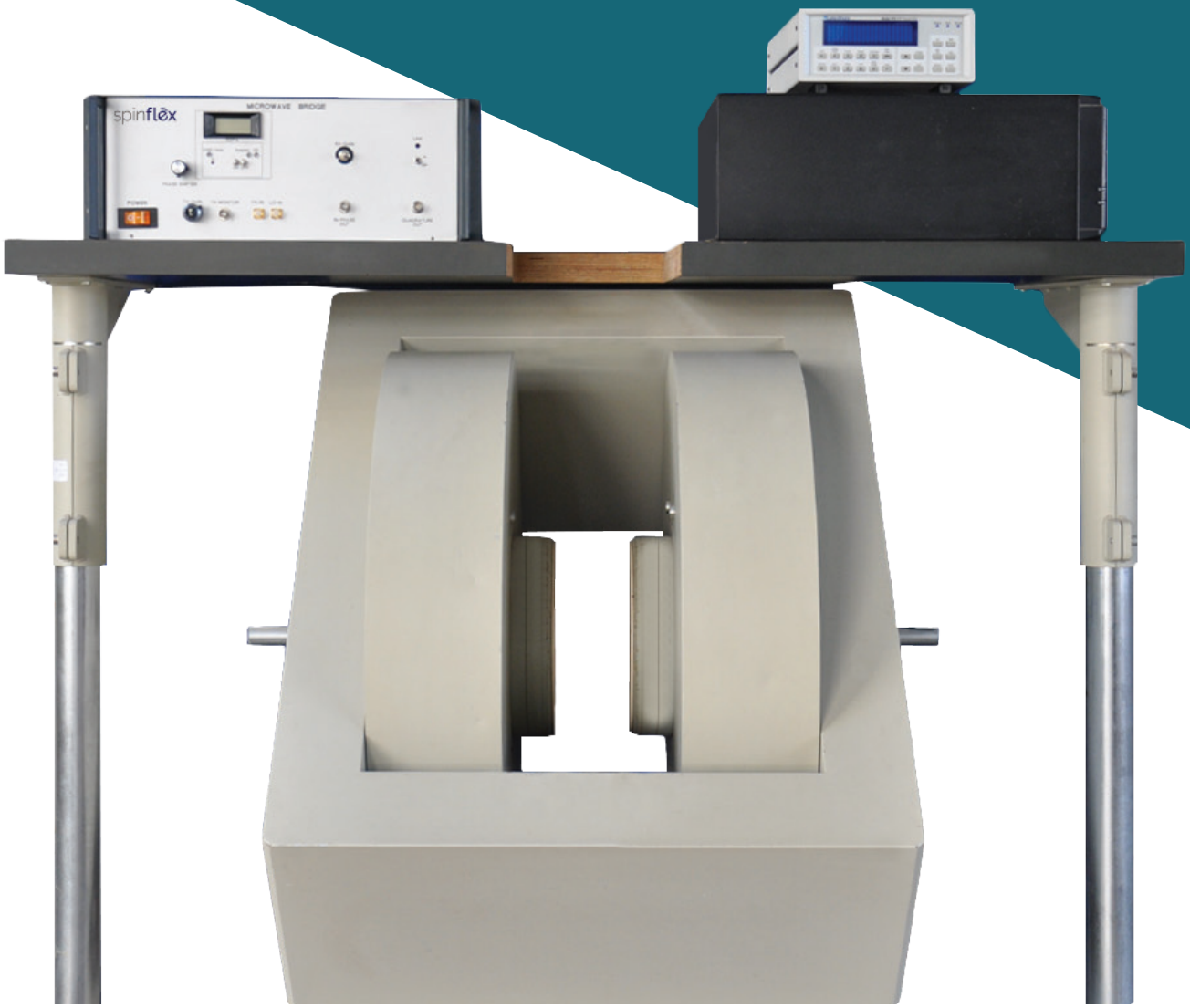
spinflex



spinUP

Advanced Pulsed Electric Spin Resonance Spectrometer

for Scientific and Industrial Applications

www.spin-flex.com | **info@spin-flex.com**

spinflex offers brand new pulsed ESR instruments at various frequency ranges: 2-6, 6-18, 32-38, and 92-96 GHz.
You can upgrade any existing CW ESR system to a new state-of-the-art pulsed ESR and ENDOR spectrometer.

- Flexible and user-friendly software
- Upgrade any CW system
- Affordable price
- Full personal support
- Compact and modular

About spinUP Upgrade

spinUP system can upgrade any existing CW ESR system to a new state-of-the-art pulsed ESR and ENDOR (electron-nuclear double resonance) spectrometer.
The upgraded system retains the original CW ESR spectrometer capability, in which the CW and Pulsed system share the same magnet and are interchangeable with the flip of a button.
The upgrade allows you to improve research capability and pursue the most advanced pulsed ESR techniques available today

spinUP Main spec

Parameter	s+c Band	C+X Band	Q Band	W Band
Frequency [GHz]	2÷6	6÷12	32÷38	92÷96
Max output [W]	30	30	10	1
Max output optional enhancement [W]	N/A	100*	125-250	N/A
Acquisition bandwidth [MHz]	250	250	250	250
AWG time resolution [ns]	0.5	0.5	0.5	0.5
Separate AWG channel for ENDOR	yes	yes	yes	yes
Min pulse length [ns]	5	5	5	5
Acquisition dead time [ns]	10-100	10-100	10-100	10-100
Time steps [ns]	2	2	2	2

* We can accommodate also user-supplied 1 KW TWT

spinUP software capabilities

Our software supports many different types of pulsed ESR spectroscopy, with pre-programmed sequences, such as: One-pulse FID; Two-pulse Hahn echo; Three-pulse inversion recovery; Three- and Four-pulse DEER, Pulsed ENDOR, CPMG, electrically-detected magnetic resonance (EDMR), optically-detected magnetic resonance (ODMR), and more.

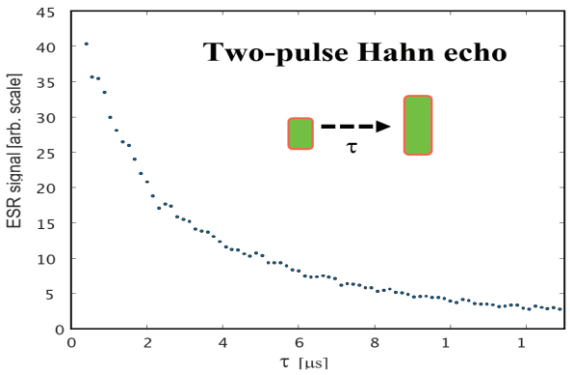
We also support many pre-defined types of phase-cycling, such as CYCLOPS, +/-, as well as any user-defines phase cycling procedure with as many as 128 steps.

Arbitrary pulses and complex timing changes can be programed through MATLAB™ scripts. The software also supports the real-time processing of the acquired data through pre-configured or user defined MATLAB™ scripts.

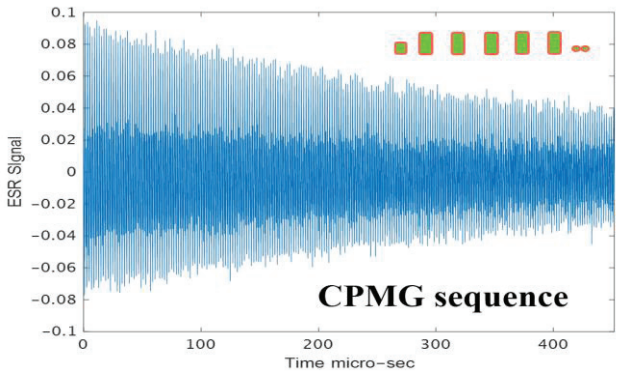
With spinflex software, you get to benefit from years of experiments that were run with our systems by leveraging an extensive library of pre-configured and pre-defined experiments sets with tested scripts. Can't find the setup or experiment you are looking for? The software is flexible and our team is always willing to add more modules at no extra cost.

Real experimental results

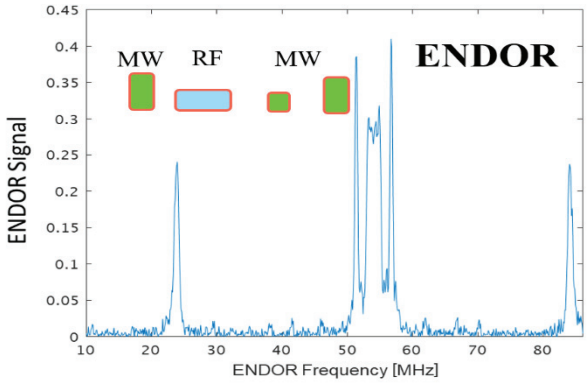
Spin-spin relaxation data of NV- center in diamond via two-pulse Hahn echo.



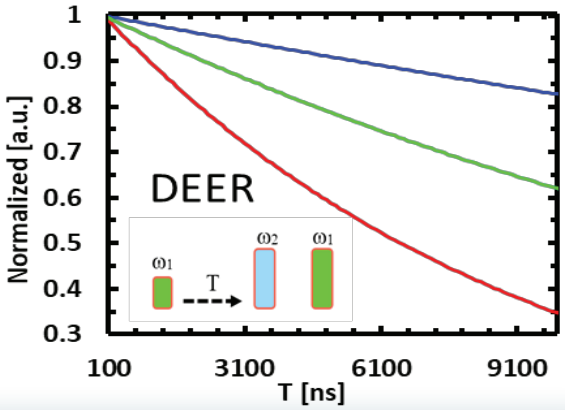
ESR signal from a sample of phosphorus dopes Si^{28} SiO_2, measured by a CPMG sequence with 226 π pulses.



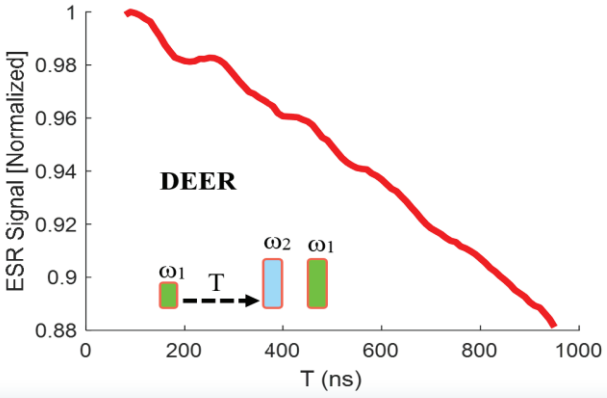
Davies ENDOR signal of Malonic acid single crystal, at Q-band.



3-pulse DEER decay of E' centers in γ-irradiated amorphous SiO2 (Dose of 1,10 and 100 kGray)



3-Pulse DEER data for nitroxide bi-radical measured at room temperature with Gaussian pump pulse (microwave power of 5 W).



Inversion recovery sequence:
Spin-lattice relaxation data of radical defects in teeth enamel via inversion recovery experiment.