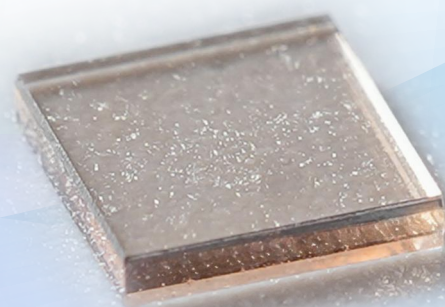


Ensemble NV Diamond

Ideal for high-sensitivity precision sensing and quantum simulation.

ViQium™ Ensemble NV Diamonds enable high-sensitivity magnetic and temperature sensing, quantum simulation, solid-state masers, and terahertz sources, supported by high NV density, long coherence, and strong fluorescence.



Product Parameters

Quantum Performance	Values
Center Type	Ensemble
NV Density	~ 0.5 – 2 ppm
T_2	~ 50 – 200 μ s
T_2^*	~ 300 – 600 ns
Notes: 1. NV density measured using ODMR system. 2. T_2 measured by Spin Echo. 3. T_2^* measured by FID.	

Thermal Properties	Values
Thermal Conductivity	> 2000 Wm ⁻¹ K ⁻¹
CTE (300 K)	1.0 ± 0.1 ppm · K ⁻¹
CTE (1000 K)	4.4 ± 0.1 ppm · K ⁻¹
Geometric Properties	Values
Standard Size	3 mm × 3 mm & 2 mm × 2 mm
Standard Thickness	0.5 mm
Polished Surface Roughness	Ra < 5 nm

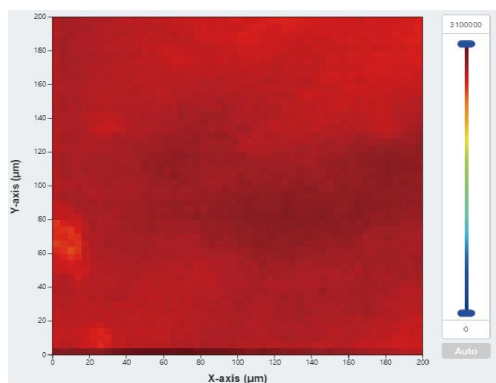


Fig 1. Confocal Fluorescence Image of Ensemble NV Diamond

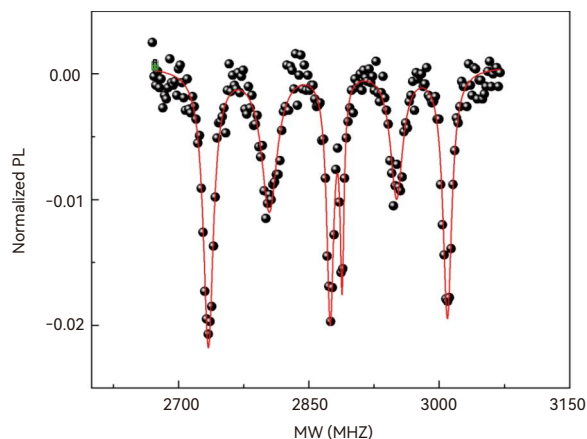


Fig 2. Continuous-Wave ODMR Spectrum of Ensemble NV Diamond

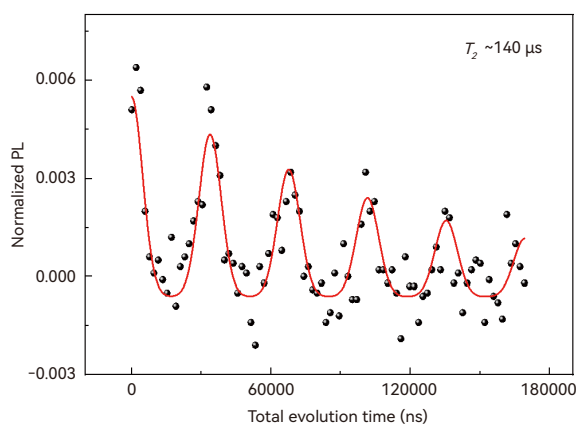


Fig 3. Spin Coherence Properties of Ensemble NV Diamond: T_2

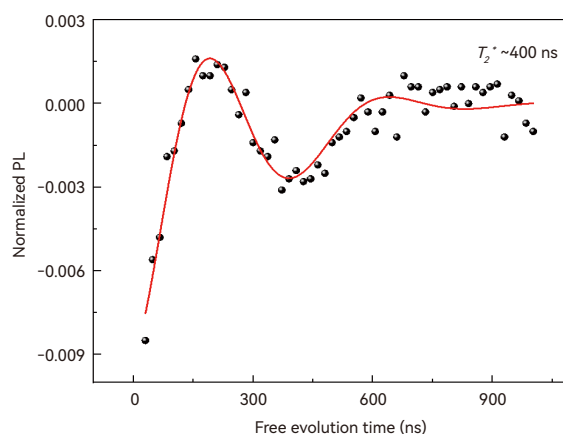


Fig 4. Spin Coherence Properties of Ensemble NV Diamond: T_2^*

ViQium™ Ensemble NV Diamond

No.	Product Code	Dimensions (mm)	Crystal Orientation	NV Density	T_2
1	ENV100F12	2 × 2 × 0.5	<100>	~ 500 ppb	~ 100 μs
2	ENV100F13	3 × 3 × 0.5	<100>	~ 500 ppb	~ 100 μs
3	ENV100F22	2 × 2 × 0.5	<100>	~ 1 ppm	~ 100 μs
4	ENV100F23	3 × 3 × 0.5	<100>	~ 1 ppm	~ 100 μs
5	ENV100F32	2 × 2 × 0.5	<100>	~ 1.5 ppm	~ 100 μs
6	ENV100F33	3 × 3 × 0.5	<100>	~ 1.5 ppm	~ 100 μs

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