

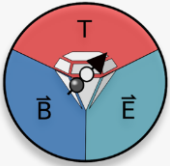


# Diatope

## Isotopically Engineered Diamond for Quantum Technologies

### Quantum Sensing

Diamond Nanosensor



- Healthcare
- Geo-Science
- Materials Science
- Chemistry & Life Sciences
- Space Science



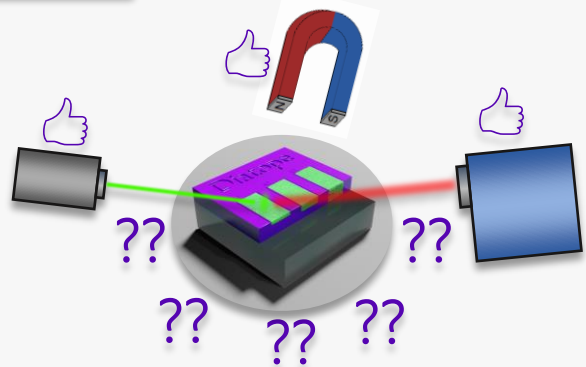
### Quantum Computation

Room Temperature Qubits



### The Problem

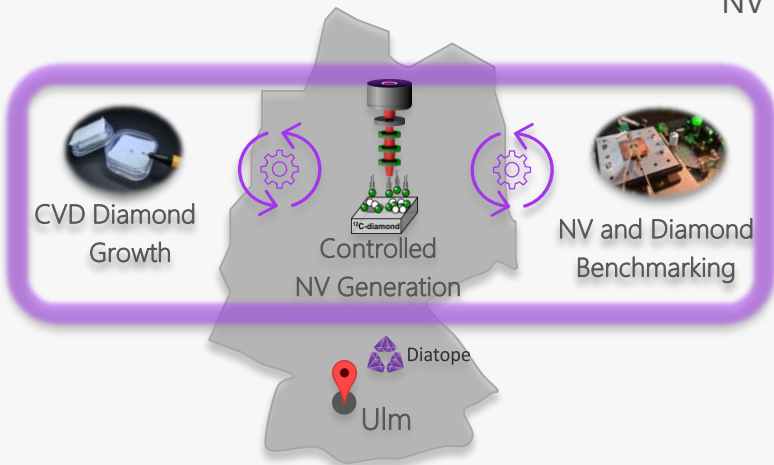
- NV Diamond hardware commercially not available
- No isotopically enriched material
- Specifications not optimized for application



### Our Solution

Our vision of an enabling quantum platform has led to the establishment of Diatope as a company dedicated to the development of commercially available diamond quantum hardware.

- Combine diamond growth, NV-generation and high-end spin analysis in one company
- Isotopic control of diamond material
- Feedback allows rapid product development
- Individual specification datasheet summarizes NV properties



## A New Era in Diamond Technology

We are driving technology to application by offering isotopically engineered diamond material with color centers designed for quantum sensing and quantum computing industry.

Founded as a spin-off from the Institute for Quantum Optics at Ulm University, led by world leading quantum scientist Prof. Fedor Jelezko, the team at Diatope GmbH has established itself as a key enabler for diamond quantum technologies.



**Dr. Christian Osterkamp**  
Founder, Quantum Materials

- CVD diamond growth
- Color center characterization
- Quantum control techniques



**Christoph Findler**  
Founder, Quantum Applications

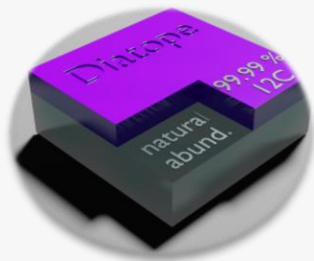
- Materials science
- Surface science
- Nanoscale quantum characterization



**Johannes Lang**  
Founder, CEO

- Ion implantation
- High temperature treatment
- Hands-on mentality and entrepreneurial mindset

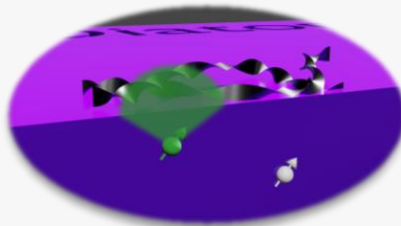
## Our Products – Isotopically Controlled Material Designed for Your Application



### Isotopically Engineered “Quantum Ready”

**<sup>12</sup>C purified**

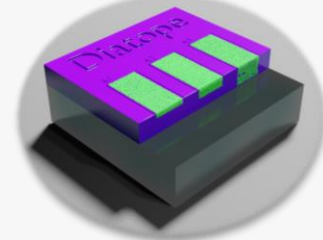
- “Magnetic Vacuum”
- The perfect base layer for your product



### Atomically Engineered “Quantum Grade”

**Controlled NV center creation  
with defined spin bath/Qubit coupling**

- Quantum Computation
- Quantum Sensing



### Benchmarking of NV centers

**Spin Density (P1, NV, ...), T<sub>2</sub>,  
T<sub>2</sub><sup>\*</sup>, NMR suitability etc.**

- Report on spin properties
- Magnetic field sensitivity

## Our Technology – Bringing Your Application to Markets

**Highly specialized CVD reactors** → **unique design** enables extremely pure growth

- Reactor for **isotopically controlled nm-thin layers**
- Design with higher growth rate for **high purity / N doping**

**(111)-oriented growth with perfectly aligned NV centers**

- **Record sensitivity** of  $0.26 \frac{nT \sqrt{\mu m^3}}{\sqrt{Hz}}$  (volume-normalized)

**Ion Implantation and Annealing Service**

- **Multiple** color center configurations on **one substrate**
- Annealing under **controlled UHV conditions** and **custom** heating ramp

**Unprecedented nm-precise depth control**

- Example Specs: depth  $20.4 \pm 1.4$  nm, T<sub>2</sub> ~ 100 μs, T<sub>2</sub><sup>\*</sup> ~ 5 μs

## Contact Us

**Diatope GmbH**

Isotopically Engineered Diamond  
for Quantum Technologies

 [www.diatope.com](http://www.diatope.com)  
 [info@diatope.com](mailto:info@diatope.com)  
 [in](#)

