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How diamond sensors can help to understand the magnetic sense of animals

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The ability of many animal species to orient themselves during long distance journeys around the globe is a fascinating topic. Although it has been known for decades that many of these species can sense the geomagnetic field and to use it as a navigation aid, the underlying sensory mechanisms are still poorly understood. One hypothesis is that magnetic particles might be part of such a sensor. Magnetic stray fields of such particles can be detected with the help of Optically Detected Magnetic Resonance (ODMR). In this method, fluorescent signals of defects in a diamond are readout while sweeping microwaves tuned to frequencies close to expected resonances. This allows us to detect very small magnetic fields at room temperature inside tissue sections.

Category

Other

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