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### **Towards a wearable magnetometer**

We have demonstrated, using a single crystal of diamond, spin manipulation, polarization, and reading of electrons using a microwave antenna. The microwave field is used to manipulate the orientation of electron spins through electron spin resonance tuned by an external magnetic field. The electron spin is initialized optically using laser radiation and the photoluminescence spin reading of the NV centers provides the information about the applied magnetic field.

We are also developing a method for manufacturing the material by irradiation followed by annealing in search of the optimum density of the color center for its application in magnetometry. As part of the roadmap towards a miniaturized embedded device, we are developing a compact configuration that integrates all components.

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