

14-2019-6698 | Fast, Room Temperature Single Pass Readout of NV-center Spin State in Diamond
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Background

Nitrogen vacancy (NV) color centers in diamond are a promising implementation for quantum sensors across a variety of use cases. The advantage to read out its spin state optically is a crucial property. Nevertheless, in order to obtain a high quality reading existing protocols require many repeat measurements, cold temperatures or long measurement periods.

Our innovation

A method to obtain a spin state readout with a single read operation without cryogenic requirements and enhance the signal to noise ratio

Opportunity

The field of quantum sensing is presently drawing enormous interest and resources. NV color centers in diamond is one popular implementation and therefore methods to improve the signal fidelity suggest an attractive opportunity to improve system performance. In addition, this scheme is strongly differentiated from the methods currently in use (red fluorescence) and therefore presents a more competitive and broader IP position.

Patent Status

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