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A new way to make diamond tip hosting an atomic sized defect[1]

TONY ZHOU, Harvard University, RAINER STOHR, University of Stuttgart, YULIYA DOVZHENKO, FRANCESCO CASOLA, AMIR YACOBY, Harvard University — The nitrogen-vacancy (NV) center in diamond has been fascinating people with its unique role in quantum information and magnetometry. NV magnetometry was used to investigate many fundamental physics studies and develop a number of industrial applications. One of the powerful aspects of NV magnetometry is the ability to scan in space to perform spatial magnetic field sensing with nano-meter resolution. As a new emerging scanning probe technique, it faces a huge challenge to be widely adopted due to its complexity in fabrication. Here, we report a new simple way of creating diamond tips with tools found in basic clean room facilities and mount the tips onto an experimental apparatus with common lab bench tools. Finally, scanning NV magnetometry was performed to demonstrate its application.

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