

## **Tunable biaxial strain device for low dimensional materials**

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Strain is attracting much interest as a mean to tune the properties of thin exfoliated two-dimensional materials and their heterostructures. While tunable uniaxial strain has been demonstrated in a range of devices, tunable biaxial strain is yet to be implemented. Here we present a device allowing the controlled application of uniaxial as well as biaxial in-plane strain. We demonstrate their performance on exfoliated 2H-MoS<sub>2</sub>, characterizing the response of this material to up to 1.6% strain using Raman spectroscopy. We model the devices using finite element analysis to understand the strain response, in particular its uniformity over the sample area.