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## **【172】 Spatial modulations of the density of states due to atomic defects in bulk ZrSe<sub>2</sub>**

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ZrSe<sub>2</sub> in its pristine bulk form is an insulator and does not support a CDW phase. However, a recent study of mono- and few-layer ZrSe<sub>2</sub> on graphene reports the observation of a 2x2 CDW driven by charge transfer from the substrate.[1]

We use cryogenic STM and STS to study in-situ cleaved bulk ZrSe<sub>2</sub> and present a spatial spectroscopic investigation of native defects and their influence on the electronic structure of ZrSe<sub>2</sub>. Our study finds spatial modulations in the LDOS consistent with the previously reported results, suggesting that a similar CDW phase in bulk ZrSe<sub>2</sub> may be driven by native atomic defects.

[1]Ren et al., Nano Letters 22 476-484 (2022)

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