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STM measurements of Charge Density Waves in S-doped NbSe₂ ULRICH WURSTBAUER, ETHAN ROSENTHAL, ERICK F. ANDRADE, CAR-LOS ARGUELLO, SUBBAIAH P. CHOCKALINGAM, Dept. of Physics, Columbia University, SHUANG JIA, ROBERT J. CAVA, Dept. of Chemistry, Princeton University, ABHAY N. PASUPATHY, Dept. of Physics, Columbia University — Recent scanning tunneling microscopy (STM) measurements have shown that crystal defects have a profound influence on the nature of the charge density wave (CDW) transition in the transition-metal dichalcogenides (TMD). In order to examine this effect systematically, we employ low temperature STM to visualize the CDW transition in intentionally doped TMD crystals. We use a newly designed homebuilt ultralow-loss, variable temperature STM to perform measurements on crystal samples of NbS_xSe_{2-x}. We describe the effect of the sulphur atoms on both the local and global charge order in this material.

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