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## **[113] Evolution of the CDW in Sulfur substituted 1T-TiSe<sub>2</sub>: A combined ARPES and STM/STS study**

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The transition-metal dichalcogenide TiSe<sub>2</sub> is a layered material with a charge density wave (CDW) transition temperature around 200 K. Its origin is still a matter of debate. Using angle-resolved photoemission spectroscopy (ARPES) and scanning tunneling microscopy and spectroscopy (STM/STS), the influence of sulfur concentration in TiSe<sub>2-x</sub>S<sub>x</sub> is studied. While TiS<sub>2</sub> does not show a CDW phase, the CDW in TiSe<sub>2-x</sub>S<sub>x</sub> is not strongly perturbed. With ARPES, we study the evolution of band dispersion and CDW gap size as a function of temperature and sulfur concentration. STM and STS monitor the long-range coherence of the CDW as a function of sulfur substitutions. These observations allow enhancing our understanding of CDW formation.

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