Abstract Submitted
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Controlling the morphology of MBE-grown WSe_2 on epitaxial graphene/SiC(0001).[1] LIWEI LIU, AFSANEH MOGHADAM, MICHAEL WEINERT, Univ of Wisconsin, Milwaukee, LIAN LI, West Virginia University — Controlling the morphology of transition metal dichalcogenides (TMDs) during molecular beam epitaxy is critical for their potential device applications. In this work, by systematically changing the substrate temperature and W/Se flux ratio, the growth of sub-monolayer to few layers WSe_2 on graphene/SiC(0001) is investigated by in situ scanning tunneling microscopy, x-ray photoelectron spectroscopy, and Raman spectroscopy. The results indicate that the morphology of the WSe_2 films can be controlled from fractal to compact triangular. These findings and their implication for the controlled growth of TMD heterostructures will be discussed at the meeting.

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