

Abstract Submitted  
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**MBE growth of topological insulator  $\text{Bi}_2\text{Se}_3$  on epitaxial graphene on 6H-SiC(0001)** Y. LIU, University of Wisconsin-Milwaukee, M. WEINERT, L. LI — In this work, we report results on the MBE growth of  $\text{Bi}_2\text{Se}_3$ , a prototypical topological insulator, on epitaxial graphene on 6H-SiC(0001). Step flow growth is observed, characterized by atomically smooth terraces that are 10 to 50 nm in width and separated by steps of 1-2 quintuple-layer in height. Two characteristic peaks at 130.21 and 171.48  $\text{cm}^{-1}$  are observed by Raman spectroscopy, corresponding to the in-plane  $E_g^2$  and out-of-plane  $A_{1g}^2$  vibrational modes, respectively. The close resemblance of the positions and line shapes of both peaks to that of bulk  $\text{Bi}_2\text{Se}_3$  demonstrates the very high quality of the film. Oscillations are also observed near the steps in  $dI/dV$  imaging, attesting to the metallic nature of the surface states of the topological insulator  $\text{Bi}_2\text{Se}_3$ .

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