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Growth of the topological insulator Bi₂Se₃ on Al₂O₃ by molecular beam epitaxy PHILLIP TABOR, CAMERON KEENAN, DAVID LEDERMAN, SERGEI URAZHIN, West Virginia University Department of Physics — We report the growth of single crystalline Bi₂Se₃ on Al₂O₃ (110) by molecular beam epitaxy. Previous studies utilizing silicon as a substrate demonstrate favorable structural, optical and transport properties, although this can include contributions from the substrate-film interface. In contrast, growth on Al₂O₃ may influence substrate-film interfacial contributions to structural and electronic properties. Films grown under a range of temperatures and relative selenium to bismuth deposition rates were characterized by ex-situ XPS, XRD, and Hall measurements and will be compared to previous measurements using silicon as a substrate.

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