

Abstract Submitted
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Deposition angle, energy, and substrate temperature dependence of Cd and Te₂ deposited on CdTe¹ INDIRAS KHATRI, JACQUES AMAR, University of Toledo — We study the energy, deposition angle, and substrate temperature dependence of the attachment probability and deposition site for Cd and Te₂ deposited on the Cd-terminated and Te-terminated (100) and (111) surfaces of zincblende CdTe. In general, deposition on the oppositely terminated surface leads to an attachment probability which is close to 1 and relatively independent of deposition conditions, while the dominant deposition mode corresponds to growth of the next layer. In contrast, deposition on the same terminated surface leads to a significantly lower attachment probability which generally decreases with increasing deposition angle, energy, and substrate temperature. We also find that deposition on the (111) surface leads to a significant excess Te sticking probability. In contrast, the excess Te attachment probability for the (100) surface is typically significantly smaller, and in some cases may even be negative while the dominant deposition mode for same termination corresponds to joining the first layer. These results imply that even for low deposition energies and substrate temperatures, deposition on the (100) surface is likely to create interstitials in the surface layer.

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