

Abstract Submitted  
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**A molecular-dynamics study of defects and failure mechanisms in strained heteroepitaxial interfaces**<sup>1</sup> JARROD E. SCHIFFBAUER, West Virginia University, Physics Department, MARTINA E. BACHLECHNER, West Virginia University, Physics Department — The formation and growth of pits and pit-like structures through a delamination-driven mechanism have been observed in the analysis of comprehensive molecular dynamics simulations of a laterally strained Si(111)/Si<sub>3</sub>N<sub>4</sub>(0001) interfacial system. These phenomena contribute to the ultimate mechanical failure of the simulated samples. Several factors play a key role the nucleation and growth of the pits including temperature and strain rate. Here we present an overview of the dependence of pit nucleation and morphology on both global and local conditions for a representative range of temperatures and applied strain rates.

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