

Abstract Submitted
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Void Growth and Coalescence Nanocrystalline Metals: Molecular Dynamics Modeling, Continuum Modeling, and Experiments DAVID BENSON, SIRIRAT TRAVIRATANA, MARC MEYERS, PARAG DIXIT, UCSD, ALICE KONIGES, DAN KALANTAR, LLNL — Fragmentation of the support structures in ICF experiments, leading to the damage of instrumentation and optics, is currently a concern as new research facilities are brought on line. The current research focuses on understanding the void formation and growth mechanisms. MD simulations in single and poly-crystalline nano-materials have been carried out with LAMMPS. Void growth occurred by the emission of shear dislocation loops. Continuum finite difference calculations of the same Voronoi-generated microstructure were also performed using ALE-AMR. The results of the calculations are compared to each other and to laser shock experiments in thin vanadium films. This research was supported by LLNL grant B558558.

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