

Abstract Submitted
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Roles of processing and mesostructure on dynamic properties of Al/W granular composites¹ PO-HSUN CHIU, CHIEN-WEI LEE, VITALI NESTERENKO, UCSD, UCSD TEAM — High density Al-W granular/porous composites were fabricated using (a) Cold Isostatic Pressing (CIPing) with subsequent Hot Isostatic Pressing (HIPing) with vacuum encapsulation or (b) CIPing followed by vacuum sintering plus HIPing without vacuum encapsulation. All samples had an identical weight ratio between Al and W with different porosities, size, shape and orientation of W component and also different size of Al particles. Their dynamic strength and fracture were investigated at strain rate 1000 1/s. Size of W and Al particles, bonding between Al particles and morphology of W inclusions had a strong effect on dynamic strength and shear instability of the materials.

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