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**Fragment structure from vapor explosions during the impact of molten metal droplets into a liquid pool** NADIA KOURAYTEM, ER QIANG LI, IVAN URIEV VAKARELSKI, SIGURDUR THORODDSEN, King Abdullah University of Science and Technology — High-speed video imaging is used in order to look at the impact of a molten metal drop falling into a liquid pool. The interaction regimes are three: film boiling, nucleate boiling or vapor explosion. Following the vapor explosion, the metal fragments and different textures are observed. It was seen that, using a tin alloy, a porous structure results whereas using a distinctive eutectic metal, Field's metal, micro beads are formed. Different parameters such as the metal type, molten metal temperature, pool surface tension and pool boiling temperature have been altered in order to assess the role they play on the explosion dynamics and the molten metal's byproduct.

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