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Integrating Blue Laser Manufacturing into LENS for Greater Material Flexibility

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Traditionally, laser based additive manufacturing is done with 1064nm IR laser systems. These laser systems work well for many iron, titanium, and nickel based alloys but it can be difficult to print metals that are more reflective at that wavelength such as copper, gold, silver, and even aluminum. Because the more reflective metals are very thermally and electrically conductive, there is motivation to be able to print them in a fully dense state for various aerospace and defense applications. This poster will go over modifications that were made to the LENS (Laser Engineered Net Shaping) system at Sandia National Laboratories that allowed for an expanded suit of materials to be printed. This poster will also show and discuss initial metallurgical results from the system.

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