

Laser additive manufacturing of refractory high entropy alloy and its resistance to ultra-high temperature oxidation

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Abstract This report presents the composition design of refractory high entropy alloy resistant to ultra-high temperature oxidation and the research progress of laser additive manufacturing technology. It is experimentally verified that certain refractory high entropy alloys can grow a single alumina scale under ultra-high temperature conditions, and the relevant results are expected to open up a new way for fabricating metallic coating to protect CMC against oxidation in ultra-high temperature environments.

Keywords refractory high entropy alloy; laser additive manufacturing; ultra-high temperature oxidation