Research progress on corrosion behavior of additive manufactured alloys

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Abstract Additive manufacturing (AM) techniques including powder bed fusion (PBF) and direct energy deposition (DED) have been widely employed to fabricate large complex alloy components. Due to the special processing characteristics such as high cooling rate and multiple thermal cycles, the additive manufactured alloys possess unique microstructures and corrosion behaviors. In this presentation, we share the research progress on corrosion behavior and mechanism of additive manufactured stainless steel, high-entropy alloy, aluminium alloy and magnesium alloy in our laboratory. It is hoped these results can help to promote the industrial applications of the additive manufactured alloys.

Keywords Additive manufacturing; Alloys; Corrosion behavior