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## Additive manufacturing of binary Ni-Ti shape memory alloys using selective electron beam melting – On the impact of TiC on functional properties

Shape memory alloys (SMAs), such as Ni–Ti, are promising candidates for actuation and damping applications. Although processing of Ni–Ti bulk materials is challenging, well-established processing routes (i.e. casting, forging, wire drawing, laser cutting) enabled application in several niche applications, e.g. in the medical sector. Additive manufacturing, also referred to as 4Dprinting in this case, is known to be highly interesting for the fabrication of SMAs in order to produce near-netshaped actuators and dampers. The present study investigated the impact of electron beam powder bed fusion (PBF-EB/M) on the functional properties of C-rich Ni50.9-Ti49.1 alloy. The results revealed a significant loss of Ni during PBF-EB/M processing. Process microstructure property relationships are discussed in view of the applied master alloy and powder processing route, i.e. vacuum induction-melting inert gas atomization (VIGA).