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Speaker 7

Hydrogen embrittlement of L-PBF manufactured 316L stainless steel

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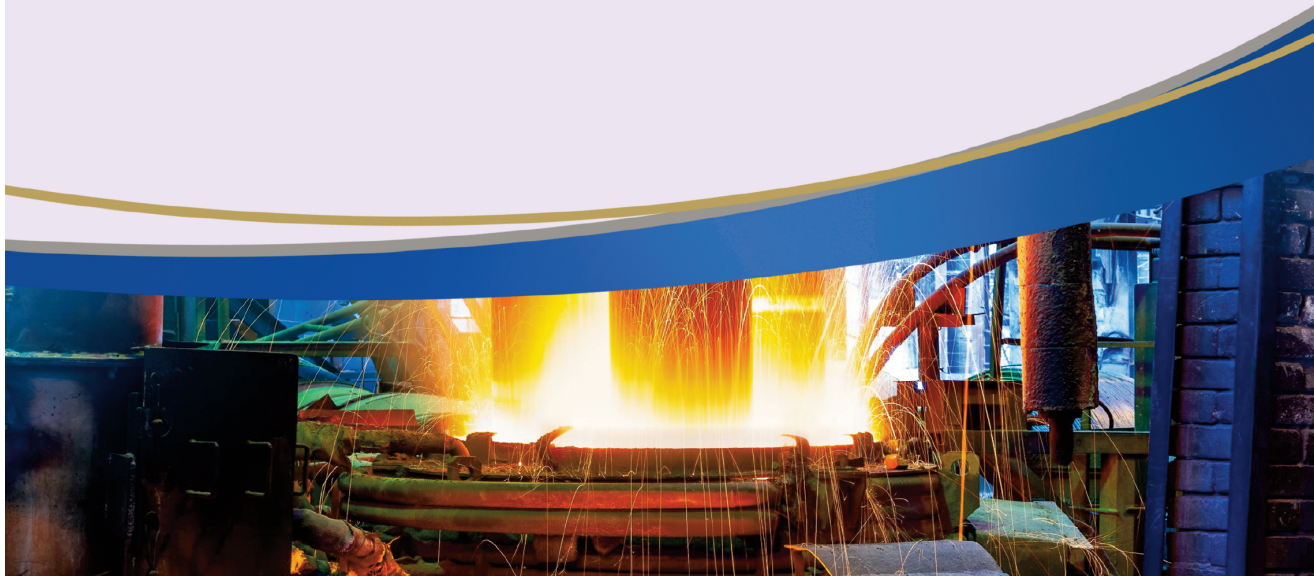
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ABSTRACT:

316L stainless steel (SS) can be employed as high-pressure or liquid hydrogen containers due to its good low-temperature performance and high corrosion resistance. However, the influence of additive manufacturing on the hydrogen embrittlement of 316L SS is still unclear. Laser powder bed fusion (L-PBF) manufactured samples and wrought samples of 316L SS were tested using slow strain rate tensile test and in-situ neutron diffraction. The deformation mechanisms of both materials were considered to be changed by hydrogen, but no significant changes in mechanical properties were found in L-PBF manufactured materials .



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