**Synergistic effects of Pt and Y addition in (Ni, Pt)CrAlY bond coat on oxide spallation resistance and growth of interdiffusion zone between bond coat and Ni-based single crystal superalloy**

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Fig. S1: WDS composition maps showing the elemental distribution in the top surface of the oxide layer in the oxidized Ni49Pt10Cr21.7Al19Y0.3 bond coat alloy after 100 h of oxidation at 1100 °C. Notably, the spinel phase is rich in Ni and Al and has been identified as NiAl2O4.

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Fig. S2: Isothermal oxidation of (a) -NiAl and (b) Ni(10Pt)50Al bond coat alloys at 1100 °C for 1000 h showing ridge structures [1].

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Fig. S3: Presence of voids at the β-Ni50Al bond coat/oxide interface [1].

**References**

[1] T. Baskaran, N. Esakkiraja, C. Samartha, P. Kumar, V. Jayaram, A. Paul, Effect of addition of Pt, Pd and Ir to β-NiAl-bond coat on oxidation resistance and growth of interdiffusion zone, Surf. Coat. Technol. 426 (2021) 127766.