

ABSTRACT

SUBSTRATE FEATURES FOR MITIGATING STRESS

An article may include an array of features formed in a substrate and may be coated by a thermal barrier coating (TBC). The array of features may mitigate thermal stress experienced by the coated article. In particular, the array of features may reduce or limit crack propagation at or above the interface of a thermally insulative layer and a bond coat in the TBC. In some embodiments, the array may be formed proximate to and substantially aligned with cooling holes formed in the substrate. In other embodiments, an article may include a first array of features formed in a first location of a substrate and a second array of features formed in a second location of a substrate. The first and second locations may be determined or selected based on a prediction of thermal stresses that the substrate will experience at the first and second locations during use.

FIG. 1B