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ABSTRACT OF THE DISCLOSURE

HYBRID THERMAL BARRIER COATING AND METHOD OF MAKING THE SAME

A superalloy article is disclosed having a thermal barrier coating. The article comprises a superalloy substrate, an adherent alumina layer on the substrate, and a ceramic, thermally insulating layer on the alumina layer. The ceramic layer has an overall thickness and comprises a relatively strain tolerant, columnar grain ceramic on the alumina layer and relatively more thermally insulating ceramic on the columnar grain ceramic. The alumina layer may be formed using an alumina forming layer such as an overlay or aluminide bond coat, or the superalloy may comprise a material that is capable of forming an alumina layer. The ceramic layers may be formed of a stabilized zirconia or other suitable material, and may have the same or different compositions.

FIGURE 1

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