



162162

THERMAL BARRIER COATING WITH IMPROVED STRENGTH AND FRACTURE TOUGHNESS

ABSTRACT OF THE DISCLOSURE

A thermal barrier coating (TBC) (26) for a component (10) intended for use in a hostile environment, such as the superalloy turbine, combustor and augmentor components of a gas turbine engine. The TBC (26) is formed of at least partially stabilized zirconia, preferably yttria-stabilized zirconia (YSZ), and exhibits improved strength and fracture toughness as a result of containing a dispersion of chromia precipitates or particles (32). The TBC (26) preferably consists essentially of YSZ and the chromia particles (32), which are preferably dispersed throughout the microstructure of the TBC (26), including the YSZ grains (30) and grain boundaries. The chromia particles (32) constitute at least 1 to about 10 volume percent of the TBC (26).

Figure 2



G00002