

FIELD REPAIRABLE HIGH TEMPERATURE SMOOTH WEAR COATING

ABSTRACT

A chemical composition and method for repairing a thermal barrier coating on a component designed for use in a hostile thermal environment, such as turbine, combustor and augmentor components of a gas turbine engine. The method repairs a thermal barrier coating on a component that has suffered localized damage to the thermal barrier coating. After cleaning the surface area of the component exposed by the localized spallation, a paste-like mixture of a ceramic composition comprising ceramic powders and nano-sized ceramic materials in a binder is applied to the surface area of the component, and is optionally smoothed using mechanical means. The composition is then allowed to dry and cure to form a dried coating having polymeric characteristics. Upon subsequent heating, the dried coating reacts to produce a glassy ceramic repair coating. Due to the thixotropic properties of the coating composition upon application to a component, the repair method can be performed in-situ while the component remains installed in its operating environment.

(FIGURE 2)