

FIELD REPAIRABLE HIGH TEMPERATURE SMOOTH WEAR COATING

ABSTRACT

A chemical composition (24) and method for repairing a thermal barrier coating (12) on a component (10) 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 (12) on a component (10) that has suffered localized damage to the thermal barrier coating (12). After cleaning the surface area of the component (10) exposed by the localized spallation, a paste-like mixture of a ceramic composition (24) comprising ceramic powders and nano-sized ceramic materials in a binder, further including an accelerant, is applied to the surface (22) of the component (10), and is optionally smoothed using mechanical means. The composition (24) is then allowed to dry and cure to form a dried repair coating (26) having polymeric characteristics. Upon subsequent heating, the dried coating (26) reacts to produce a glassy ceramic repair coating (26). Due to the thixotropic properties of the coating composition (24) upon application to a component (10), the repair method can be performed in-situ while the component (10) remains installed in its operating environment.

Fig. 2