MATERIAL SYSTEMS FOR REPAIR OF THERMAL BARRIER COATING AND METHODS THEREOF

ABSTRACT

Methods for repairing a thermal barrier coating (140) deposited on a component (100) with localized spallation (150) of the thermal barrier coating (140) includes depositing a primer slurry on a thermally grown oxide (132) of the component (100) exposed by the localized spallation (150), depositing a ceramic slurry on the primer slurry, and heating the primer slurry and the ceramic slurry. The primer slurry includes a primer that includes a metal or a metal oxide. The ceramic slurry includes a ceramic material, a ceramic slurry binder material, and a ceramic slurry fluid carrier. Heating the primer slurry and the ceramic slurry forms a first chemical bond (210) between the primer and the thermally grown oxide (132) and a second chemical bond (230) between the primer and the ceramic material.

[Figure 1]