

Title (en)

SUPERALLOY COMPONENTS HAVING COATINGS THEREON AND METHODS FOR PRODUCING THE SAME

Title (de)

SUPERLEGIERUNGSKOMPONENTEN MIT BESCHICHTUNGEN DARAUF UND VERFAHREN ZUR HERSTELLUNG DAVON

Title (fr)

COMPOSANTS EN SUPERALLIAGE AYANT DES REVÊTEMENTS SUR CEUX-CI ET LEURS PROCÉDÉS DE PRODUCTION

Publication

EP 4394082 A1 20240703 (EN)

Application

EP 23214207 A 20231205

Priority

US 202218146802 A 20221227

Abstract (en)

Methods are provided for producing components. The methods include applying a slurry or paste to a surface of a substrate, wherein the substrate includes a nickel-based superalloy, drying the slurry or paste applied to the surface to define a coated substrate, and performing a heat treatment on the coated substrate to simultaneously densify and/or crystallize the dried slurry or paste to thereby form a coating that is bonded to the surface and to age the substrate to achieve a specific hardness therein by controllably forming precipitates of an intermetallic phase within the substrate and/or controllably modifying a size distribution of the precipitates of the intermetallic phase within the substrate, wherein residual stress within the substrate are preserved during the heat treatment.

IPC 8 full level

C23C 24/08 (2006.01); **C23C 26/00** (2006.01); **C23C 28/04** (2006.01)

CPC (source: EP)

C23C 24/08 (2013.01); **C23C 26/00** (2013.01); **C23C 28/04** (2013.01); **C23C 28/042** (2013.01); **C23C 28/048** (2013.01)

Citation (applicant)

- US 11415004 B2 20220816 - MOHAJERI MAHDI [US], et al
- US 11136634 B2 20211005 - BRIDIER FLORENT [FR], et al

Citation (search report)

- [X1] US 2020230645 A1 20200723 - OVERHOLSER RONALD WALTER [US]
- [X1] EP 3473608 A1 20190424 - UNITED TECHNOLOGIES CORP [US]
- [XA1] US 2009297718 A1 20091203 - SARRAFI-NOOR REZA [US], et al
- [AD] WO 2017106970 A1 20170629 - ÉCOLE DE TECH SUPÉRIEURE [CA], et al

Designated contracting state (EPC)

AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC ME MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)

BA

Designated validation state (EPC)

KH MA MD TN

DOCDB simple family (publication)

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