

Title (en)

Lower cost high strength single crystal superalloys with reduced Re and Ru content

Title (de)

Kostengünstigere hochfeste Einzelkristall-Superlegierungen mit reduziertem Re- und Ru-Gehalt

Title (fr)

Superaliages monocristallins hautement résistants et peu onéreux avec une teneur réduite en Re et en Ru

Publication

EP 2218798 B1 20160914 (EN)

Application

EP 09252708 A 20091201

Priority

US 11871408 P 20081201

Abstract (en)

[origin: US2010135846A1] A first embodiment of a nickel based alloy consists essentially of from 3.0 to 5.2 wt % chromium, from 1.5 to 3.0 wt % molybdenum, from 6.0 to 12.5 wt % tungsten, from 5.0 to 11 wt % tantalum, from 5.5 to 6.5 wt % aluminum, from 11 to 14 wt % cobalt, from 0.001 to 1.75 wt % rhenium, from 0.2 to 0.6 wt % hafnium, up to 0.05 wt % yttrium, up to 3.0 wt % ruthenium, and the balance nickel. Another embodiment of a nickel based alloy consists essentially of from 1.0 to 3.0 wt % chromium, up to 2.5 wt % molybdenum, from 11 to 16 wt % tungsten, from 4.0 to 8.0 tantalum, from 5.7 to 6.5 wt % aluminum, from 11 to 15 wt % cobalt, from 2.0 to 4.0 wt % rhenium, from 0.2 to 0.6 wt % hafnium, up to 0.05 wt % yttrium, up to 3.0 wt % ruthenium, and the balance nickel.

IPC 8 full level

C22C 19/05 (2006.01)

CPC (source: EP US)

C22C 19/057 (2013.01 - EP US)

Citation (opposition)

Opponent : Siemens Aktiengesellschaft

- EP 0362661 A1 19900411 - GEN ELECTRIC [US]
- EP 1057899 A2 20001206 - GEN ELECTRIC [US]
- EP 1571297 A2 20050907 - UNITED TECHNOLOGIES CORP [US]
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- US 2004229072 A1 20041118 - MURPHY KENNETH S [US]
- US 2003041930 A1 20030306 - DELUCA DANIEL P [US], et al
- CN 1966750 A 20070523 - INST METAL RES CHINESE ACAD SC [CN]
- US 6419763 B1 20020716 - KONTER MAXIM [CH], et al
- US 4935072 A 19900619 - NGUYEN-DINH XUAN [US]
- US 2003075247 A1 20030424 - KOIZUMI YUTAKA [JP], et al
- US 4169742 A 19791002 - BUCHAKJIAN LEO JR [US], et al
- EP 0150917 A2 19850807 - GARRETT CORP [US]

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EP2314727A1; EP2305848A1; WO2013083101A1; US9850765B2; EP2314727B1

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DOCDB simple family (publication)

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DOCDB simple family (application)

US 62723209 A 20091130; EP 09252708 A 20091201; EP 16181107 A 20091201