

Title (en)
POLYCRYSTALLINE MATERIAL ELEMENT WITH IMPROVED WEAR RESISTANCE AND METHODS OF MANUFACTURE THEREOF

Title (de)
POLYKRISTALLINES MATERIAL MIT ERHÖHTER ABRIEBFESTIGKEIT UND HERSTELLUNGSVERFAHREN

Title (fr)
ELEMENT A BASE D'UN MATERIAU POLYCRISTALLIN PRESENTANT UNE MEILLEURE RESISTANCE A L'USURE ET SES PROCEDES DE PRODUCTION

Publication
EP 1488019 A1 20041222 (EN)

Application
EP 03702763 A 20030213

Priority
• GB 0300642 W 20030213
• US 31915702 P 20020328

Abstract (en)
[origin: US2003183426A1] The present invention provides a superhard polycrystalline diamond or diamond-like element with improved wear resistance. Collectively called PCD elements for the purposes of this specification, these elements are formed with a binder-catalyzing material in a high-temperature, high-pressure (HTHP) process. The diamond material is formed and integrally bonded to a substrate containing the catalyzing material during the HTHP process. The diamond body so formed has a working surface, a plurality of crystals being exposed at the working surface, and wherein the exposed crystals are substantially free of microfractures. The exposed parts of the exposed crystals are of rounded or domed form.

IPC 1-7
C22C 26/00; **C04B 35/52**

IPC 8 full level
B22F 3/24 (2006.01); **C04B 35/645** (2006.01); **E21B 10/56** (2006.01); **E21B 10/567** (2006.01)

CPC (source: EP US)
B22F 3/24 (2013.01 - EP US); **C04B 35/52** (2013.01 - EP US); **C04B 35/63** (2013.01 - EP US); **C04B 35/634** (2013.01 - EP US); **C04B 35/645** (2013.01 - EP US); **E21B 10/56** (2013.01 - EP US); **E21B 10/567** (2013.01 - EP US); **B22F 2003/247** (2013.01 - EP US); **B22F 2998/10** (2013.01 - EP US); **C04B 2235/405** (2013.01 - EP US); **C04B 2235/427** (2013.01 - EP US); **C04B 2235/5436** (2013.01 - EP US); **C04B 2235/5463** (2013.01 - EP US); **C04B 2235/78** (2013.01 - EP US)

C-Set (source: EP US)
B22F 2998/10 + **B22F 7/06** + **B22F 3/24**

Designated contracting state (EPC)
AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HU IE IT LI LU MC NL PT SE SI SK TR

DOCDB simple family (publication)
US 2003183426 A1 20031002; AU 2003205885 A1 20031013; CA 2445301 A1 20031009; EP 1488019 A1 20041222; WO 03083148 A1 20031009; ZA 200308160 B 20040916

DOCDB simple family (application)
US 24919903 A 20030321; AU 2003205885 A 20030213; CA 2445301 A 20030213; EP 03702763 A 20030213; GB 0300642 W 20030213; ZA 200308160 A 20031021