

Title (en)
Copper, copper alloy, and manufacturing method therefor

Title (de)
Kupfer sowie Kupferlegierung und Verfahren zur Herstellung

Title (fr)
Cuivre et alliage de cuivre et procédé de fabrication

Publication
EP 1245690 A1 20021002 (EN)

Application
EP 02006886 A 20020326

Priority
JP 2001091179 A 20010327

Abstract (en)
Copper and copper alloy comprises: a structure having fine crystal grains with grain size of 1 μ m or less after a final cold rolling with a reduction η , wherein η is expressed in the following formula and satisfying $\eta \geq 3$; and an elongation of 2% or more in a tensile test. $\langle DF \rangle \eta = \ln (T_0 / T_1) \langle DF \rangle$ T0: plate thickness before rolling, T1: plate thickness after rolling. <IMAGE>

IPC 1-7
C22F 1/08; **B21B 3/00**

IPC 8 full level
C22C 9/00 (2006.01); **B21B 3/00** (2006.01); **C22F 1/08** (2006.01)

CPC (source: EP KR US)
B21B 3/00 (2013.01 - EP US); **C22C 9/00** (2013.01 - KR); **C22F 1/08** (2013.01 - EP US); **B21B 2003/005** (2013.01 - EP US)

Citation (search report)

- [A] DE 19954375 A1 20000518 - NIPPON MINING CO [JP]
- [A] EP 0390374 A1 19901003 - NGK INSULATORS LTD [JP]
- [X] FERRASSE S ET AL: "MICROSTRUCTURE AND PROPERTIES OF COPPER AND ALUMINUM ALLOY 3003 HEAVILY WORKED BY EQUAL CHANNEL ANGULAR EXTRUSION", METALLURGICAL AND MATERIALS TRANSACTIONS A: PHYSICAL METALLURGY & MATERIALS SCIENCE, THE MINERALS, METALS AND MATERIALS SOCIETY, US, vol. 28A, no. 4, April 1997 (1997-04-01), pages 1047 - 1057, XP001002966, ISSN: 1073-5623
- [A] PATENT ABSTRACTS OF JAPAN vol. 1998, no. 01 30 January 1998 (1998-01-30)
- [A] PATENT ABSTRACTS OF JAPAN vol. 1999, no. 13 30 November 1999 (1999-11-30)
- [A] PATENT ABSTRACTS OF JAPAN vol. 2000, no. 12 3 January 2001 (2001-01-03)
- [A] PATENT ABSTRACTS OF JAPAN vol. 2000, no. 13 5 February 2001 (2001-02-05)
- [A] PATENT ABSTRACTS OF JAPAN vol. 2000, no. 05 14 September 2000 (2000-09-14)

Cited by
DE112005001197B4

Designated contracting state (EPC)
CH DE FR IT LI SE

DOCDB simple family (publication)
EP 1245690 A1 20021002; **EP 1245690 B1 20061011**; CN 1223690 C 20051019; CN 1386873 A 20021225; DE 60215240 D1 20061123; DE 60215240 T2 20070503; KR 100513943 B1 20050909; KR 20020076139 A 20021009; US 2002189729 A1 20021219; US 2008277032 A1 20081113

DOCDB simple family (application)
EP 02006886 A 20020326; CN 02119270 A 20020327; DE 60215240 T 20020326; KR 20020016015 A 20020325; US 10545402 A 20020326; US 13404308 A 20080605