Title (en)
METHOD FOR TREATING A METAL ELEMENT WITH ION BEAM

Title (de)
VERFAHREN ZUR BEHANDLUNG EINES METALLELEMENTS MIT EINEM IONENSTRAHL

Title (fr)
PROCEDE DE TRAITEMENT D'UNE PARTIE METALLIQUE PAR UN FAISCEAU D'IONS

Publication
EP 2376668 A1 20111019 (FR)

Application
EP 09797120 A 20091130

Priority
• FR 2009052335 W 20091130
• FR 0858182 A 20081201

Abstract (en)
[origin: WO2010063928A1] The present invention relates to a method for treating a metal element subjected to an ion beam, where: - the ions of the beam are selected from among boron, carbon, nitrogen, and oxygen; - the ion acceleration voltage, greater than or equal to 10 kV, and the power of the beam, between 1 W and 10 kW, as well as the ion load per surface unit are selected so as to enable the implantation of ions onto an implantation area with a thickness eI of 0.05 µm to 5 µm, and also enable the diffusion of ions into an implantation/diffusion area with a thickness eI + eP, of 0.1 µm to 1,000 µm; the temperature TZF of the area of the metal element located under the implantation/diffusion area is less than or equal to a threshold temperature TSD. In this manner, metal surfaces having remarkable mechanical characteristics are advantageously produced.

IPC 8 full level
C23C 14/06 (2006.01); **C23C 8/24** (2006.01); **C23C 8/36** (2006.01); **C23C 14/48** (2006.01)

CPC (source: EP US)
C23C 8/20 (2013.01 - EP US); **C23C 8/22** (2013.01 - EP US); **C23C 8/24** (2013.01 - EP US); **C23C 8/26** (2013.01 - EP US); **C23C 8/36** (2013.01 - EP US); **C23C 8/38** (2013.01 - EP US); **C23C 10/06** (2013.01 - EP US); **C23C 14/0641** (2013.01 - EP US); **C23C 14/48** (2013.01 - EP US)

Citation (search report)
See references of WO 2010063928A1

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

DOCDB simple family (publication)
FR 2939150 A1 20100604; **FR 2939150 B1 20111021**; EP 2376668 A1 20111019; US 2011236592 A1 20110929; WO 2010063928 A1 20100610

DOCDB simple family (application)
FR 0858182 A 20081201; EP 09797120 A 20091130; FR 2009052335 W 20091130; US 200913132190 A 20091130