

Title (en)  
CARBON FIBER SURFACE OILING AGENT CHANGING METHOD AND CARBON FIBER SURFACE OILING AGENT CHANGING APPARATUS

Title (de)  
KOHLENSTOFFFASEROBERFLÄCHEN-ÖLUNGSMITTELÄNDERUNGSVERFAHREN UND KOHLENSTOFFFASEROBERFLÄCHEN-  
ÖLUNGSMITTELÄNDERUNGSVORRICHTUNG

Title (fr)  
PROCÉDÉ DE MODIFICATION D'UN AGENT D'ENSIMAGE DE SURFACE DE FIBRES DE CARBONE ET APPAREIL DE MODIFICATION D'UN  
AGENT D'ENSIMAGE DE SURFACE DE FIBRES DE CARBONE

Publication  
**EP 3348685 A1 20180718 (EN)**

Application  
**EP 17000055 A 20170112**

Priority  
EP 17000055 A 20170112

Abstract (en)  
A carbon fiber surface oiling agent changing method and a carbon fiber surface oiling agent changing apparatus are provided. The carbon fiber surface oiling agent changing method includes providing a raw material step; performing a desizing step; performing a plasma surface treatment step; and performing a sizing step. In the plasma surface treatment step, the impurities that originally adhere to the surface of the carbon fiber (71) can be broken to form small molecules and blown away through the physical and chemical reaction of the plasma gas flow, enabling the surface of the carbon fiber (71) to be roughened and provided with functional groups, which is beneficial to achieve high-quality interface bonding of the carbon fiber (71) and the matrix resin in the subsequent sizing step, thereby enhancing the characteristics of carbon fiber composite materials.

IPC 8 full level  
**D01F 11/14** (2006.01); **D01F 11/16** (2006.01); **D06M 10/02** (2006.01); **D06M 101/40** (2006.01)

CPC (source: EP)  
**D01F 11/14** (2013.01); **D01F 11/16** (2013.01); **D06L 1/14** (2013.01); **D06M 10/025** (2013.01); **D06M 2101/40** (2013.01)

Citation (search report)  
• [X1] US 2010178825 A1 20100715 - SHAH TUSHAR K [US], et al  
• [X] US 2014030947 A1 20140130 - ARDIFF HENRY GERARD [US], et al  
• [Y] US 2015040823 A1 20150212 - WANG CHIH-YUNG [TW]  
• [A] WO 2015168360 A1 20151105 - 3M INNOVATIVE PROPERTIES CO [US]  
• [Y] MORENT ET AL: "Non-thermal plasma treatment of textiles", SURFACE AND COATINGS TECHNOLOGY, ELSEVIER BV, AMSTERDAM, NL, vol. 202, no. 14, 31 December 2007 (2007-12-31), pages 3427 - 3449, XP022517178, ISSN: 0257-8972, DOI: 10.1016/J.SURFCOAT.2007.12.027

Cited by  
CN113338027A

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 MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)  
BA ME

DOCDB simple family (publication)  
**EP 3348685 A1 20180718**

DOCDB simple family (application)  
**EP 17000055 A 20170112**