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[Continued on next page]

(54) Title: SUPERHYDROPHOBIC COATINGS AND METHODS FOR THEIR PREPARATION

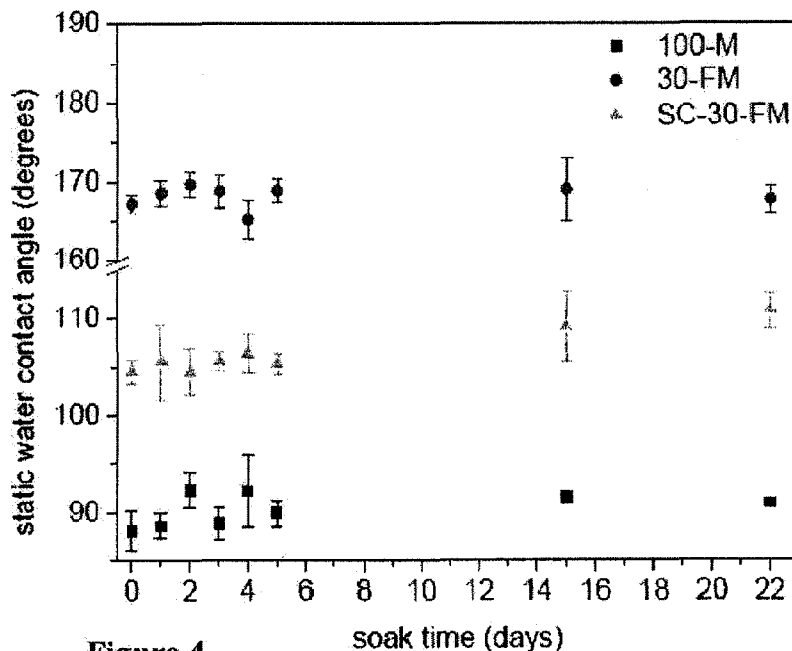


Figure 4

(57) Abstract: Superhydrophobic coatings and compositions and methods for preparing superhydrophobic coatings and compositions are described herein whereby the coatings and compositions are prepared under mild conditions, yet the methods are amenable to chemical functionalization of the coatings and components therein. The methods are useful for tuning and optimizing the physical properties of the coatings. In an embodiment, the coatings comprise nanostructured fluorinated silica colloids.

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EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU,  
LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK,  
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**A. CLASSIFICATION OF SUBJECT MATTER***C01B 33/149(2006.01)i, C01B 33/14(2006.01)i, C07F 7/04(2006.01)i*

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

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Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean utility models and applications for utility models

Japanese utility models and applications for utility models

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

eKOMPASS(KIPO internal) &amp; Keywords: superhydrophobic coating, superhydrophobic composition, silane, acid

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 2010-002859 A2 (STCUNM) 07 January 2010 See abstract; paragraphs [0015-0029]	1-44
A	US 6506496 B1 (DOMINIQUE FRUGIER et al.) 14 January 2003 See abstract; column 2, line 10-column 8, line 2	1-44
A	WO 2004-106252 A1 (NANOGATE COATING SYSTEMS GMBH) 09 December 2004 See abstract; claims 1-8	1-44
PX	BENJAMIN J. PRIVETT et al., Antibacterial fluorinated silica colloid superhydrophobic surfaces. Langmuir, 30 June 2011, Vol.27, pp.9597-9601 See experimental details; results and discussion	1-34,39-44

 Further documents are listed in the continuation of Box C. See patent family annex.

\* Special categories of cited documents:

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"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

International application No.

**PCT/US2012/040374**

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2010-002859 A2	07.01.2010	AU 2009-267062 A1 CA 2727920 A1 CN 102119197 A EP 2294152 A2 EP 2294152 A4 EP 2294152 B1 JP 2011-526835 A KR 10-2011-0042268 A US 2012-040577 A1 WO 2010-002859 A3	07.01.2010 07.01.2010 06.07.2011 16.03.2011 29.06.2011 14.11.2012 20.10.2011 26.04.2011 16.02.2012 14.05.2010
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