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(54) **METHOD FOR PREPARATION OF A SURFACE, METHOD FOR CHARACTERIZATION OF A SURFACE, COMPONENT, AND USE OF SUCH COMPONENT**

(57) A method is described for the preparation of a surface (2) such that it thermodynamically stable traps air when immersed in aqueous media, comprising the steps of: Providing a material, wherein the said material comprises the said surface (2); Connecting the material as a working electrode (4); Providing an electrolyte (6); Addition of H₂O₂ to the electrolyte (6); Providing a counter electrode (8); Applying a pre-defined voltage (V), wherein, upon application of the voltage (V), anodization of the working electrode (4) is carried out over a pre-defined time interval; Functionalizing the material by bringing it into contact with a fluorinated agent (10) and heating it to a pre-defined temperature. In addition, a method for characterizing a surface (2), a component (14), and uses for a component (14) are described.

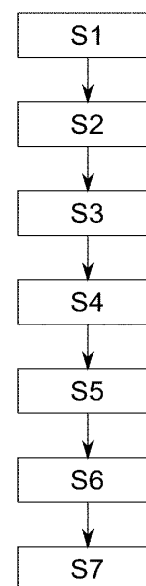


Fig. 1

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Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
X	CN 103 966 643 B (UNIV DALIAN TECH) 24 August 2016 (2016-08-24)	1,2,4-7, 10,12-15	INV. C25D11/08
Y	* claims 1,2,3 * * paragraph [0002] * * Embodiment 1 *	8,9,11	A61L27/06 C25D11/24 C25D11/26
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X	TESLER ALEXANDER B. ET AL: "Extremely durable biofouling-resistant metallic surfaces based on electrodeposited nanoporous tungstite films on steel", NATURE COMMUNICATIONS, [Online] vol. 6, no. 1, 1 December 2015 (2015-12-01), XP055853352, DOI: 10.1038/ncomms9649 Retrieved from the Internet: URL:https://www.nature.com/articles/ncomms 9649.pdf> [retrieved on 2024-07-29]	14	
Y	* section discussion; page 7 * * section surface fabrication; page 9 *	8,9	TECHNICAL FIELDS SEARCHED (IPC) C25D A61L

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EPO FORM 1503 03.82 (P04C01)

The present search report has been drawn up for all claims

Place of search

The Hague

Date of completion of the search

27 February 2025

Examiner

Lampert, Felix

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

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EUROPEAN SEARCH REPORT

Application Number
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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (IPC)
Y	KARPITSCHKA STEFAN ET AL: "Nonintrusive Optical Visualization of Surface Nanobubbles", PHYSICAL REVIEW LETTERS, vol. 109, no. 6, 1 August 2012 (2012-08-01), XP093252513, US ISSN: 0031-9007, DOI: 10.1103/PhysRevLett.109.066102 * left column; page 2 * * conclusion; page 4 * -----	11	
			TECHNICAL FIELDS SEARCHED (IPC)
The present search report has been drawn up for all claims			
Place of search The Hague		Date of completion of the search 27 February 2025	Examiner Lampert, Felix
CATEGORY OF CITED DOCUMENTS X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons & : member of the same patent family, corresponding document	



Application Number

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CLAIMS INCURRING FEES

The present European patent application comprised at the time of filing claims for which payment was due.

☐ Only part of the claims have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due and for those claims for which claims fees have been paid, namely claim(s):

☐ No claims fees have been paid within the prescribed time limit. The present European search report has been drawn up for those claims for which no payment was due.

LACK OF UNITY OF INVENTION

The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

see sheet B

☒ All further search fees have been paid within the fixed time limit. The present European search report has been drawn up for all claims.

☐ As all searchable claims could be searched without effort justifying an additional fee, the Search Division did not invite payment of any additional fee.

☐ Only part of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the inventions in respect of which search fees have been paid, namely claims:

☐ None of the further search fees have been paid within the fixed time limit. The present European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims, namely claims:

☐ The present supplementary European search report has been drawn up for those parts of the European patent application which relate to the invention first mentioned in the claims (Rule 164 (1) EPC).

**LACK OF UNITY OF INVENTION
SHEET B**

Application Number

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The Search Division considers that the present European patent application does not comply with the requirements of unity of invention and relates to several inventions or groups of inventions, namely:

1. claims: 1-9, 12-15

Method for the preparation of a surface by anodization in an electrolyte containing hydrogen peroxide and subsequently functionalising the surface by bringing it into contact with a fluorinated agent

2. claims: 10, 11

Method for characterizing a surface to assess the stability of air trapping on said surface

**ANNEX TO THE EUROPEAN SEARCH REPORT
ON EUROPEAN PATENT APPLICATION NO.**

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This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on
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27 - 02 - 2025

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
CN 103966643	B	24 - 08 - 2016	NONE

RU 2747434	C1	05 - 05 - 2021	NONE

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For more details about this annex : see Official Journal of the European Patent Office, No. 12/82