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AO, AT, AU, AZ, BA, BB, BG, BH, BN, BR, BW, BY,
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DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT,
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KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD,
ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI,
NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU,
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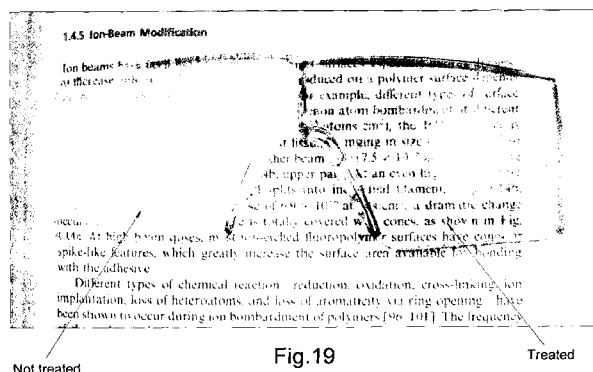
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(54) Title: HYDROPHILIC POLYMER SURFACE, PROCESS FOR PRODUCTION OF THE SAME, USES OF THE PROCESS
AND ITEMS COMPRISING SAID SURFACE



(57) Abstract: The present invention concerns a hydrophilic polymer surface preferably having a contact angle smaller than 20°. The surface comprises gold. The invention also concerns a process for the production of such a surface, comprising the following steps: a) preparation of a polymer surface; b) preferably cleaning of the polymer surface; and c) treatment of the preferably cleaned surface with a plasma treatment in combination with a cathode spray with a gold target. The description concerns also the use of the process to give anti-fogging and anti-light scattering characteristics to optical elements and items comprising said hydrophilic polymer surface.

INTERNATIONAL SEARCH REPORT

International application No
PCT/IB2013/000766

A. CLASSIFICATION OF SUBJECT MATTER
INV. C23C14/08 C23C14/20 C23C14/00
ADD.

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)
C23C

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

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

EPO-Internal, COMPENDEX, INSPEC, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	<p>REZNICKOVA A ET AL: "Nano-structuring of PTFE surface by plasma treatment, etching, and sputtering with gold", JOURNAL OF NANOPARTICLE RESEARCH, vol. 13, no. 7, 23 December 2010 (2010-12-23), pages 2929-2938, XP019917055, Springer-Verlag, Heidelberg [DE] ISSN: 1572-896X, DOI: 10.1007/S11051-010-0183-0 page 2930, right-hand column - page 2931, left-hand column; figure 3</p> <p style="text-align: center;">----- -/--</p>	1,3,5, 11,14,16



Further documents are listed in the continuation of Box C.



See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"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

"&" document member of the same patent family

Date of the actual completion of the international search

21 October 2013

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/IB2013/000766

Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fees, this Authority did not invite payment of additional fees.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

see annex

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- ☐ The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- ☐ No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-18

Hydrophilic polymer surface, process of making a hydrophilic polymer surface, use of the process, and item comprising the hydrophilic polymer surface

2. claim: 19

Method of storing a hydrophilic polymer surface

INTERNATIONAL SEARCH REPORT

International application No

PCT/IB2013/000766

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	SIEGEL J ET AL: "Annealing of gold nanostructures sputtered on polytetrafluoroethylene", NANOSCALE RESEARCH LETTERS, vol. 6, no. 1, 11 November 2011 (2011-11-11), pages 588-1-588-6, XP055036260, Springer-Verlag, Heidelberg [DE] ISSN: 1556-276X, DOI: 10.1186/1556-276X-6-588 cited in the application the whole document	1,2,7, 11,14,16
X	----- CHEN Y-S ET AL: "Electrochemical impedimetric biosensor based on a nanostructured polycarbonate substrate", INTERNATIONAL JOURNAL OF NANOMEDICINE, vol. 7, 5 January 2012 (2012-01-05), pages 133-140, XP055036325, Dove Medical Press, Princeton, NJ [US] DOI: 10.2147/IJN.S27225 cited in the application page 134, right-hand column - page 135, left-hand column	1,3,4, 11,14-17
X	----- KHANG G ET AL: "Platelet and cell interactions on gold sputter-deposited polymeric surfaces", BIOMEDICAL MATERIALS AND ENGINEERING, vol. 8, no. 5-6, 1 January 1998 (1998-01-01), pages 299-309, XP009162230, IOS Press, Amsterdam [NL] ISSN: 0959-2989 the whole document	1-3,7,9, 11,16,17
X	----- WO 2009/066080 A2 (NANOBIODESIGN LTD [GB]; GILARDI GIANFRANCO [GB]; FANTUZZI ANDREA [GB];) 28 May 2009 (2009-05-28) page 11, lines 10-17; example 1; table 1	1-3,5-7, 9,11,16, 17
A	----- WO 2012/033795 A1 (JOHNSON & JOHNSON VISION CARE [US]; PUGH RANDALL B [US]; OTTS DANIEL B) 15 March 2012 (2012-03-15) page 5, line 15 - page 8, line 12; figures 2,3	18
A	----- KRANIAS S: "Effect of drop volume on static contact angles", KRÜSS SURFACE SCIENCE NEWSLETTER - APPLICATION, no. 8, December 2004 (2004-12), pages 1-2, XP055074875, Krüss GmbH, Hamburg [DE] the whole document	6

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/IB2013/000766

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2009066080	A2	28-05-2009	NONE

WO 2012033795	A1	15-03-2012	AR 082926 A1 16-01-2013
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