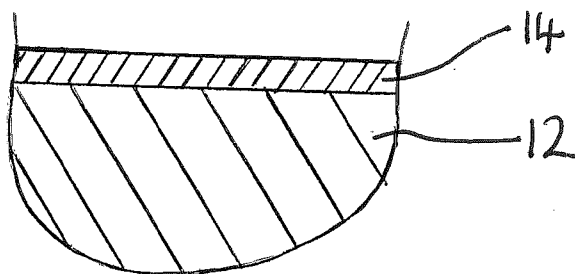




- (51) **International Patent Classification:**
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A61L 27/00 (2006.01) *B60B 5/00* (2006.01)
A63B 53/04 (2006.01)
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1104256.1 14 March 2011 (14.03.2011) GB
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- (75) **Inventor/Applicant (for US only):** PRENTICE, Thomas Campbell [GB/GB]; Zircotec Limited, 22 Nuffield Way, Abingdon, Oxfordshire OX14 1RL (GB).
- (74) **Agent:** DEMPSTER, Ben; Withers & Rogers LLP, 4 More London Riverside, London SE1 2AU (GB).
- (81) **Designated States (unless otherwise indicated, for every kind of national protection available):** AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, 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, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
- (84) **Designated States (unless otherwise indicated, for every kind of regional protection available):** ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, 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, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

[Continued on next page]

(54) **Title:** AN ARTICLE AND A METHOD OF MAKING AN ARTICLE



(57) **Abstract:** An article, such as a bicycle wheel (10), includes a substrate, at least a surface of the substrate being made of or containing a composite material comprising fibres dispersed in an organic matrix, for example a carbon fibre composite. A thermal sprayed first layer of coating material is provided on the surface, such as the braking area of the rim of the bicycle, the coating material of the first layer wholly comprising inorganic material and including at least one of the group comprising TiO₂, titanate, Al₂O₃ and aluminate.

Fig. 2



Published:

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4 April 2013

- *with international search report (Art. 21(3))*
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2012/050563

A. CLASSIFICATION OF SUBJECT MATTER
 INV. C23C4/10 A61L27/00 A63B53/04 B29C71/00 B60B5/00
 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 A61L A63B B29C B60B

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, 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	AYRAULT S ET AL: "Deposition of a ceramic coating on a thermoplastic polymer by atmospheric plasma and laser cladding", SURFACE AND COATINGS TECHNOLOGY, vol. 79, no. 1-3, 9 August 1994 (1994-08-09), pages 119-130, XP002677881, ELSEVIER SWITZERLAND ISSN: 0257-8972, DOI: 10.1016/0257-8972(95)02432-8 the whole document	1,3,51, 53
X	WO 2009/130229 A2 (ZIRCOTEC LTD [GB]; GRAHAM TERENCE [GB]; MCCABE ANDREW ROBERT [GB]; PRE) 29 October 2009 (2009-10-29) claims 1-3,12,18,48,70 ----- -/--	1-3,51, 53

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	"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
"E" earlier application or patent but published on or after the international filing date	"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
"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)	"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
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search 15 June 2012	Date of mailing of the international search report 04/02/2013
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Name and mailing address of the ISA/ European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Authorized officer Oliveras, Mariana
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INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2012/050563

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JP 62 256649 A (HITACHI CHEMICAL CO LTD) 9 November 1987 (1987-11-09) abstract -----	1-3

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

PCT/GB2012/050563

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
WO 2009130229	A2	29-10-2009	
		EP 2285999 A2	23-02-2011
		GB 2459372 A	28-10-2009
		US 2011039086 A1	17-02-2011
		WO 2009130229 A2	29-10-2009

JP 62256649	A	09-11-1987	NONE

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2012/050563

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.:

2, 3, 52, 53, 113-116(completely); 1, 51(partially)

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: 2, 3, 52, 53, 113-116(completely); 1, 51(partially)

organic substrat comprising a layer of inorganic material and including at least one of the group comprising TiO₂, titanate, Al₂O₃ and aluminate (and its manufacturing method)

2. claims: 24-32, 51, 73-89, 96-101

layer of inorganic material and including at least one of the group comprising TiO₂, titanate, Al₂O₃ and aluminate and its manufacturing method

3. claims: 4-23, 54-72

multilayer coating system and its manufacturing method

4. claims: 33, 39-44, 90, 102-107

bicycle wheel and its manufacturing method

5. claims: 34, 45, 46, 91, 108, 109

golf club and its manufacturing method

6. claims: 35-38, 47, 48, 92-95, 110

medical implant and its manufacturing method

7. claims: 49, 111

junction box and its manufacturing method

8. claims: 50, 112

carbon fiber mould and its manufacturing method
