

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
12 April 2012 (12.04.2012)



(10) International Publication Number
WO 2012/046082 A2

(51) International Patent Classification: Not classified

(21) International Application Number:
PCT/GB2011/051938

(22) International Filing Date:
10 October 2011 (10.10.2011)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
1016970.4 8 October 2010 (08.10.2010) GB

(71) Applicants (for all designated States except US): **University of Leeds** [—/GB]; Clarendon Road, Leeds Yorkshire LS2 9JT (GB). **The University Court of The University of St. Andrews** [—/GB]; College Gate, North Street, St. Andrews Fife KY16 9AJ (GB).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **SIBBETT, Wilson** [GB/GB]; University of St. Andrews, School of Physics and Astronomy, North Haugh, St. Andrews Fife KY16 9SR (GB). **BROWN, Christian Thomas Alcuin** [GB/GB]; University of St. Andrews, School of Physics and Astronomy, North Haugh, St. Andrews Fife KY16 9SR (GB). **JHA, Animesh** [GB/GB]; Institute for Materials Research, Houldsworth Building, University of Leeds, Clarendon Road, Leeds Yorkshire LS2 9JT (GB). **MILNE, Steven John** [GB/GB]; Institute for Materials Research, Houldsworth Building, University of Leeds, Clarendon Road, Leeds Yorkshire LS2 9JT (GB). **ROBINSON, Colin** [GB/GB]; Leeds Dental Institute, Clarendon Way, Leeds Yorkshire LS2 9LU (GB). **DUGGAL, Mandeep Singh** [GB/GB]; Leeds Dental Institute,

Clarendon Way, Leeds Yorkshire LS2 9LU (GB). **TOUMBA, Kyriacos Jack** [GB/GB]; Leeds Dental Institute, Clarendon Way, Leeds Yorkshire LS2 9LU (GB).

(74) Agent: **STUTTARD, Garry**; Tower North Central, Merion Way, Leeds Yorkshire LS2 8PA (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).

Published:

— without international search report and to be republished upon receipt of that report (Rule 48.2(g))



WO 2012/046082 A2

(54) Title: Composition

(57) Abstract: The present invention relates to a photosensitive composition comprising synthetic nanocrystalline hydroxyapatite or a synthetic precursor thereof doped with a rare earth ion, the use of the composition in restorative or cosmetic dentistry, a process for preparing the composition and a method of generating an image of an exposed dentinal surface of a tooth.