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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
15 April 2004 (15.04.2004)

PCT

(10) International Publication Number
WO 2004/030612 A3

(51) International Patent Classification[7]: H01L 27/25, 31/12, 33/00

(21) International Application Number:
PCT/US2003/027547

(22) International Filing Date:
3 September 2003 (03.09.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
0210868 3 September 2002 (03.09.2002) FR

(71) Applicant: **CORNING INCORPORATED** [US/US]; 1 Riverfront Plaza, Corning, NY 14831 (US).

(72) Inventors: **DAHMANI, Brahim**; 5 bis, rue Gabriel Peri, F-F-92120 Montrouge (FR). **GUZMAN, Guillaume**; 56 rue Grande, F-77250 Villecerf (FR).

(74) Agent: **BEALL, Thomas R**; Corning Incorporated, SP TI 3 1, Corning, NY 14831 (US).

(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VC, VN, YU, ZA, ZM, ZW.

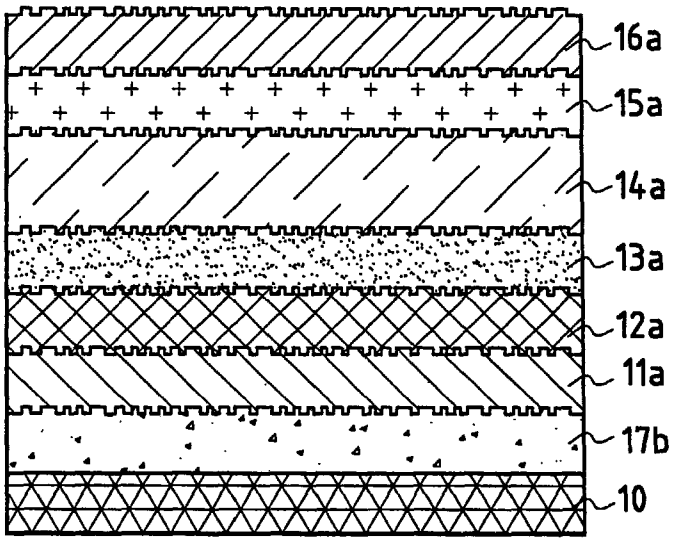
(84) Designated States *(regional)*: European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR).

Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
14 April 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: LIGHT EMITTING DIODE, SUPPORT & METHOD OF MANUFACTURE



(57) Abstract: A light emitting diode of the stacked-layer structure type, incorporating at least one layer made of an inorganic material between the layer forming the substrate (10) and a layer forming the light emitting layer (14), is provided, in which a periodic structure at the wavelength range emitted by the light emitting layer is printed. Also described is a method for generating a microstructure periodic with a wavelength range of the emitting layer of a light emitting diode. The method includes: depositing an inorganic material layer by a sol-gel process between the substrate and a light emitting layer, and printing the periodic structure onto the outer surface of this layer by soft lithography, as well as using this process for manufacturing a light emitting diode.

WO 2004/030612 A3