

CORRECTED VERSION

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
6 September 2002 (06.09.2002)

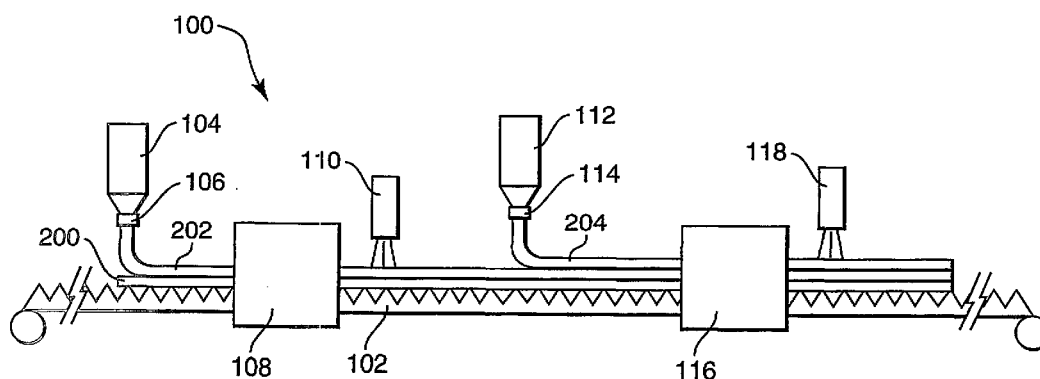
PCT

(10) International Publication Number
WO 02/069032 A3

- (51) International Patent Classification⁷: **G02F 1/1335**, G02B 5/30
- (21) International Application Number: PCT/US01/44716
- (22) International Filing Date:
29 November 2001 (29.11.2001)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
09/791,157 22 February 2001 (22.02.2001) US
- (71) Applicant: **3M INNOVATIVE PROPERTIES COMPANY** [US/US]; 3M Center, Post Office Box 33427, Saint Paul, MN 55133-3427 (US).
- (72) Inventors: **POKORNY, Richard, J.**; Post Office Box 33427, Saint Paul, MN 55133-3427 (US). **RADCLIFFE, Marc, D.**; Post Office Box 33427, Saint Paul, MN 55133-3427 (US). **WATSON, Philip, E.**; Post Office Box 33427, Saint Paul, MN 55133-3427 (US). **BOWLEY, Christopher, C.**; Post Office Box 33427, Saint Paul, MN 55133-3427 (US). **EBIHARA, Ikuko**; Post Office Box 33427, Saint Paul, MN 55133-3427 (US).
- (74) Agents: **BLACK, Bruce, E.** et al.; Office of Intellectual Property Counsel, Post Office Box 33427, Saint Paul, MN 55133-3427 (US).
- (81) Designated States (*national*): AE, AG, AL, AM, AT (utility model), AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ (utility model), CZ, DE (utility model), DE, DK (utility model), DK, DM, DZ, EC, EE (utility model), EE, ES, FI (utility model), 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, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK (utility model), SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report
- (88) Date of publication of the international search report:
27 March 2003

[Continued on next page]

(54) Title: OPTICAL BODIES CONTAINING CHOLESTERIC LIQUID CRYSTAL MATERIAL AND METHODS OF MANUFACTURE



(57) Abstract: An optical body includes a substrate and a cholesteric liquid crystal layer disposed on the substrate. The cholesteric liquid crystal layer has a non-uniform pitch along a thickness direction of the layer and comprises a crosslinked polymer material that substantially fixes the cholesteric liquid crystal layer. The crosslinking hinders diffusion of cholesteric liquid crystal material within the cholesteric liquid crystal layer. In other methods of making an optical body, a reservoir of chiral material is provided during the process over a first cholesteric liquid crystal layer to diffuse into the layer and provide a non-uniform pitch. Alternatively, two coating compositions can be disposed on a substrate where the material of the first coating composition is not substantially soluble in the second coating composition.



WO 02/069032 A3



(48) Date of publication of this corrected version:

20 November 2003

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.

(15) Information about Correction:

see PCT Gazette No. 47/2003 of 20 November 2003, Section II