(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 22 May 2008 (22.05.2008)

Date PCT

(10) International Publication Number WO 2008/060322 A3

(51) International Patent Classification: *B05D 3/06* (2006.01) *B28B 3/00* (2006.01)

(21) International Application Number:

PCT/US2007/008078

(22) International Filing Date: 2 April 2007 (02.04.2007)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

60/788,778 3 April 2006 (03.04.2006) US

- (71) Applicant (for all designated States except US): MOLEC-ULAR IMPRINTS, INC. [US/US]; 1807 West Braker Ln, Bldg. C-100, Austin, TX 78758-3605 (US).
- (72) Inventors: SHACKLETON, Steven, C.; 9801 Stonelake Blvd #723, Austin, TX 78759 (US). LAD, Pankaj B.; 1100 Long Meadow Ln, DeSoto, TX 75115 (US). MC-MACKIN, Ian M.; 7700 North Capital of Texas Highway #817, Austin, TX 78731 (US). XU, Frank Y.; 3814 Harvey Penick Dr., Round Rock, TX 78664 (US). SREENI-VASAN, Sidlgata V.; 10502 Grand Oak Drive, Austin, TX 78750 (US).
- (74) Agent: CARTER, Michael D.; P. O. Box 81536, Austin, TX 78708-1536 (US).

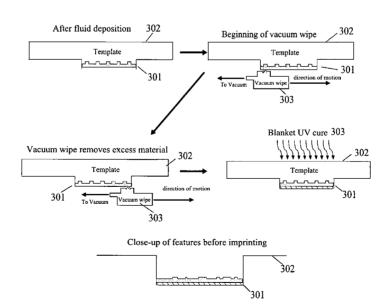
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, 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, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, MT, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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:

13 November 2008

(54) Title: NANO-FABRICATION METHOD AND SYSTEM



(57) Abstract: A method/process for curing imprint on a template prior to contact with a substrate. A curing process is used to adhere the imprint to a wafer or substrate. Monomer is deposited on a template and then partially cured using a UV exposure. The exposure is controlled so that the imprint is cured past the gel point, but still retains a thin liquid layer of uncured monomer at the surface that will bond with the wafer. Further, this partially cured layer enables the alignment adjustments between the template and the substrate to be performed after contact between the two without pulling any monomer out of the features.





INTERNATIONAL SEARCH REPORT

International application No.
PCT/US 07/08078

IPC(8) - B05D 3/06; B82B 3/00 (2008.04) USPC - 250/492.1, 432R; 977/890 According to International Patent Classification (IPC) or to both national classification and IPC		
B. FIELDS SEARCHED		
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched USPC - 250/492.1, 432R; 977/890; 977/887 IPC(8) - B05D 3/06; B82B 3/00 (2008.04)		
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) DialogWeb (command search), DialogPro(Engineering), WIPO; Web: Google, Google Scholar Search terms used: nanoimprint, UV cure imprint, template, monomer, nanoimprint lithography, partial UV cure, initiators, vacuum wiping		
C. DOCUMENTS CONSIDERED TO BE RELEVANT		
Relevant to claim No.		
1-14		
1-14		
6, 8, 13		
1-14		
1-14		
* 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		
tional "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		
the claimed invention cannot be ive step when the document is uch documents, such combination		
being obvious to a person skilled in the art locument published prior to the international filing date but later than "&" document member of the same patent family the priority date claimed		
Date of mailing of the international search report 17 SEP 2008		
ung		