

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
30 August 2007 (30.08.2007)

PCT

(10) International Publication Number
WO 2007/097709 A1

(51) International Patent Classification:
G02B 3/14 (2006.01) **G02B 1/06** (2006.01)

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(21) International Application Number:
PCT/SG2006/000036

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, 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, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date:
24 February 2006 (24.02.2006)

(25) Filing Language: English

(26) Publication Language: English

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(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, 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).

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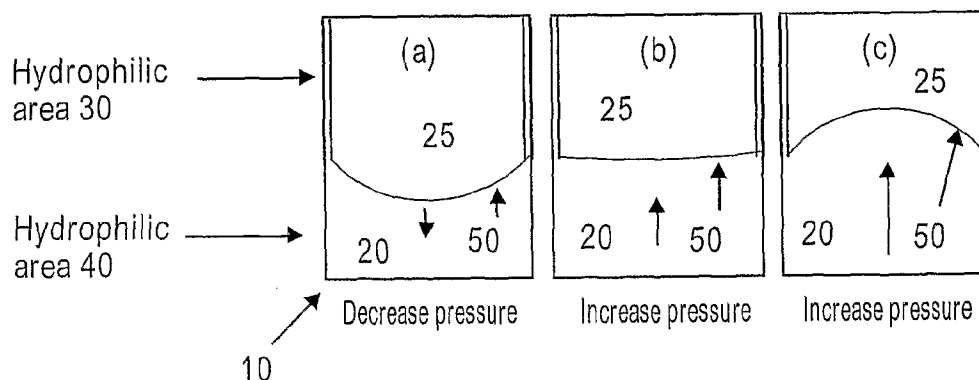
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Published:

— with international search report

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: METHOD FOR FORMING VARIABLE FOCUS LIQUID LENSES IN A TUBULAR HOUSING



Dynamic focus achieved when a liquid-liquid or liquid-air interface is shifted across a boundary of different surface energy areas

(57) Abstract: The present invention provides a variable focus fluid lens wherein the focal length is controllable by changing the contact angle of a fluid meniscus. A liquid (20), such as water, is filled in a tubular housing (10) with an internal surface including adjacent hydrophilic (40) and hydrophobic (30) areas or regions, wherein the boundary between the hydrophilic and hydrophobic regions constrains the liquid (20) and presents a meniscus (50) having a curvature defined, in part, by the static contact angle at the boundary. When a control pressure is applied to the liquid (20), the curvature of the meniscus (50) varies as the contact angle of the liquid changes at the boundary.

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