

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
12 October 2006 (12.10.2006)

(10) International Publication Number  
**WO 2006/107900 A2**

(51) International Patent Classification:

G01N 29/02 (2006.01) G01N 9/00 (2006.01)  
G01N 29/036 (2006.01) G01N 11/10 (2006.01)  
G01N 29/22 (2006.01) G01N 27/00 (2006.01)

CA 95051 (US). BENNETT, James [US/US]; 3100 Central Expressway, Santa Clara, CA 95051 (US). MATSIEV, Leonid [RU/US]; 3100 Central Expressway, Santa Clara, CA 95051 (US).

(21) International Application Number:

PCT/US2006/012374

(74) Agent: ROEDEL, John, K., Jr.; Senniger, Powers, Leavitt & Roedel, 1 Metropolitan Square, 16th Floor, St. Louis, MO 63102 (US).

(22) International Filing Date: 31 March 2006 (31.03.2006)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/667,818 1 April 2005 (01.04.2005) US

(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.

(71) Applicant (for all designated States except US): SYMYX TECHNOLOGIES, INC. [US/US]; 3100 Central Expressway, Santa Clara, CA 95051 (US).

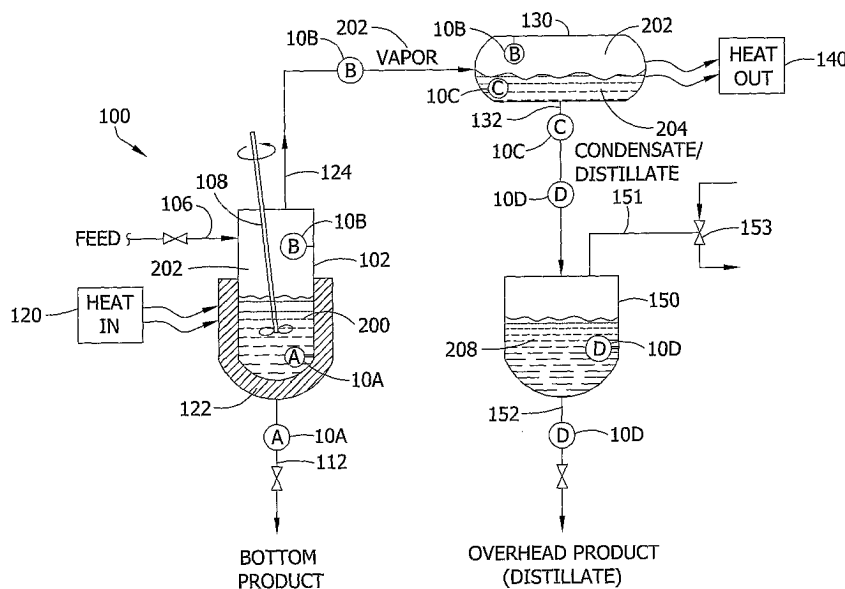
(72) Inventors; and

(75) Inventors/Applicants (for US only): CYPES, Stephen [US/US]; 3100 Central Expressway, Santa Clara, CA 95051 (US). UHRICH, Mark [US/US]; 3100 Central Expressway, Santa Clara, CA 95051 (US). CARLSON, Eric, D. [US/US]; 3100 Central Expressway, Santa Clara, CA 95051 (US). KOLOSOV, Oleg [GB/US]; 3100 Central Expressway, Santa Clara, CA 95051 (US). PADOWITZ, David [US/US]; 3100 Central Expressway, Santa Clara,

(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).

[Continued on next page]

(54) Title: MONITORING AND OPERATIONS INVOLVING UNIT SEPARATION AND REACTION OPERATIONS



(57) Abstract: Fluid sensor methods and systems adapted for monitoring and/or controlling distillation operations in fluidic systems, such as batch distillation operations or continuous distillation operations, are disclosed. Preferred embodiments are directed to process monitoring and/or process control for unit operations involving endpoint determination of a distillation, for example, as applied to a liquid-component-switching operation (e.g., a solvent switching operation), a liquid-liquid separation operation, a solute concentration operation, a dispersed-phase concentration operation, among others.

WO 2006/107900 A2