

(43) International Publication Date
27 December 2012 (27.12.2012)

(51) International Patent Classification:

C08F 293/00 (2006.01) *C08G 81/02* (2006.01)
C08G 73/06 (2006.01) *C07H 3/06* (2006.01)
G03F 7/00 (2006.01) *B82Y 40/00* (2011.01)

(21) International Application Number:

PCT/US2012/043491

(22) International Filing Date:

21 June 2012 (21.06.2012)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

61/499,354 21 June 2011 (21.06.2011) US
 13/528,314 20 June 2012 (20.06.2012) US

(71) Applicant (for all designated States except US): **BOARD OF REGENTS, THE UNIVERSITY OF TEXAS SYSTEM** [US/US]; 201 W. 7th Street, Austin, TX 78701 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **ELLISON, Christopher, John** [US/US]; 2103A Exposition Boulevard, Austin, TX 78751 (US). **CUSHEN, Julia** [US/US]; 2103A Exposition Boulevard, Austin, TX 78751 (US). **OTSUKA, Issei** [JP/FR]; 8 Avenue General Champon, F-38000 Grenoble (FR). **WILLSON, C., Grant** [US/US]; 2103A Exposition Boulevard, Austin, TX 78751 (US). **BATES, Christopher, M.** [US/US]; 1203 Ruth Avenue, Unit B, Austin, TX 78757 (US). **EASLEY, Jeffery, Alan** [US/US]; 7304 Guadalupe St., Austin, TX 78752 (US). **BORSALI, Redouane** [FR/FR]; CERMAV-CNSR, 601 Avenue De La Chimie, Domaine Universitaire De Grenoble-Saint Martin,

D'heres, F-BP53-38041 Grenoble Cedex 9 (FR). **FORT, Sebastien** [FR/FR]; CERMAV-CNSR, 601 Avenue De La Chimie, Domaine Universitaire De Grenoble-Saint Martin, D'heres, F-BP53-38041 Grenoble Cedex 9 (FR). **HALILA, Sami** [FR/FR]; 130 Le Bourg, F-38140 Beaucroissant (FR).

(74) Agents: **CARROLL, Peter, G.** et al.; Medlen & Carroll, LLP, 703 Market Street, Suite 340, San Francisco, CA 94103 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, 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, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, 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, LR, LS, MW, MZ, NA, RW, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

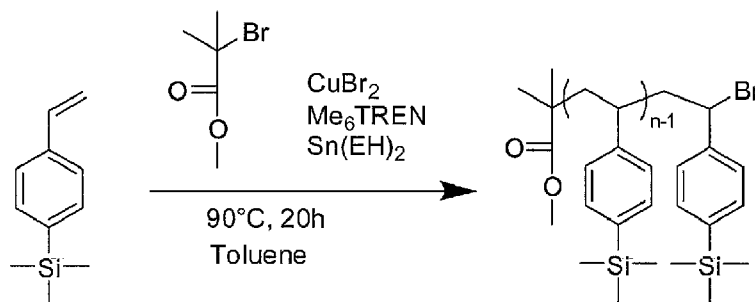
Published:

— with international search report (Art. 21(3))

[Continued on next page]

(54) Title: OLIGOSACCHARIDE/SILICON-CONTAINING BLOCK COPOLYMERS FOR LITHOGRAPHY APPLICATIONS

FIGURE 1



(57) Abstract: The present invention discloses diblock copolymer systems that self-assemble to produce very small structures. These co-polymers consist of one block that contains silicon and another block comprised of an oligosaccharide that are coupled by azide-alkyne cycloaddition.



-
- *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))*