(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
27 November 2003 (27.11.2003)

PCT

(10) International Publication Number
WO 03/098208 A1

(51) International Patent Classification[7]: G01N 30/00

(21) International Application Number: PCT/US03/15148

(22) International Filing Date: 14 May 2003 (14.05.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/381,137 15 May 2002 (15.05.2002) US

(71) Applicant *(for all designated States except US)*: **DOW GLOVAL TECHNOLOGIES INC** [US/US]; Washington Street, 1790 Building, Midland, MI 48674 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **SMITH, Patrick, B.** [US/US]; 5809 Woodbridge Lane, Midland, MI 48640 (US). **MEUNIER, David, M.** [US/US]; 406 East Chapel Lane, Midland, MI 48642 (US). **BAKER, Scott, A.** [US/US]; 149 Corkwood Lane, Lake Jackson, TX 77566 (US). **PRUD'HOMME, Robert, K.** [US/US]; 31 West Long Drive, Lawrenceville, NJ 08648 (US).

(74) Agent: **HALLDORSON, Burke, M.**; The Dow Chemical Company, Intellectual Property, P.O. Box 1967, Midland, MI 48641-1967 (US).

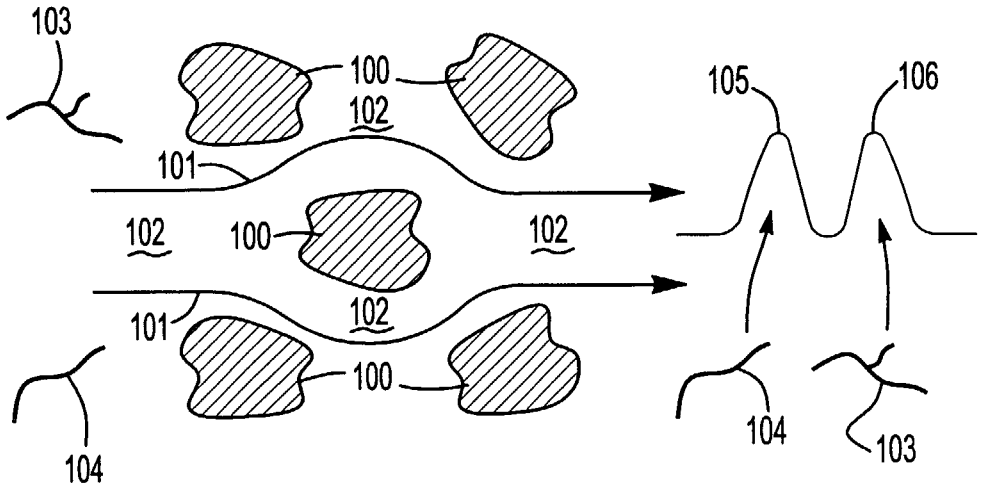
(81) Designated States *(national)*: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, 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, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

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: MOLECULAR TOPOLOGICAL FRATIONATION OF MACROMOLECULES



(57) Abstract: A process for characterizing a sample comprising a population of linear macromolecules of interest (104) and a population of long chain branched macromolecules of interest (103), the process including four steps. The first step is to provide a flow through separating medium (100) and a liquid eluant (101) in which the macromolecules of interest dissolve, the separating medium defining flow through channels (102), the eluant flow rate and the average diameter of the channels being in a range so that the linear macromolecules of interest elute before the long chain branched macromolecules of interest (105) (106). The second step is to introduce a sample into the liquid eluant. The third step is to flow the liquid eluant under pressure through the channels (102) of the separating medium (100). The fourth step is to differentiate the linear macromolecules of interest (104) from the long chain branched macromolecules of interest (103) based on their successive elution volumes established in the third step such as by determining the refractive index of the successive elution volumes or by subjecting the successive elution volumes to size exclusion chromatography.

WO 03/098208 A1