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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
19 August 2004 (19.08.2004)

PCT

(10) International Publication Number
WO 2004/069890 A2

(51) International Patent Classification[7]: C08G

(21) International Application Number:
PCT/US2004/003233

(22) International Filing Date: 4 February 2004 (04.02.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/444,759 4 February 2003 (04.02.2003) US

(71) Applicant *(for all designated States except US)*: **OSTEOTECH, INC.** [US/US]; 51 James Way, Eatontown, NJ 07724 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **KNAACK, David** [US/US]; 2 Bristel Road, Holmdel, NJ 07733-2717 (US). **WINTERBOTTOM, John, M.** [US/US]; 11 Ryans Way, Jackson, NJ 08527 (US). **KAES, David** [US/US]; 2198 Old Church Road, Toms River, NJ 08753-8008 (US). **BOYCE, Todd, M.** [US/US]; 515 Wellington Place, Aberdeen, NJ 07747 (US). **SHIMP, Lawrence, A.** [US/US]; 313 Route 79, Morganville, NJ 07751 (US).

(74) Agent: **NUGENT, Elizabeth, E.**; Choate, Hall & Stewart, Exchange Place, 53 State Street, Boston, MA 02109 (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, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, 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, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:
— *without international search report and to be republished upon receipt of that 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.

WO 2004/069890 A2

(54) Title: POLYURETHANES FOR OSTEOIMPLANTS

(57) Abstract: biological-based polyurethanes and methods of making the same. The polyurethanes are formed by reacting a biodegradable polyisocyanate (such as lysine diisocyanate) with an optionally hydroxylated biomolecule to form polyurethane. The polymers formed may be combined with ceramic and/or bone particles to form a composite, which may be used as an osteoimplant.