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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
4 August 2005 (04.08.2005)

PCT

(10) International Publication Number
WO 2005/069758 A3

(51) International Patent Classification:
A61N 1/30 (2006.01)

(21) International Application Number:
PCT/US2004/034923

(22) International Filing Date: 21 October 2004 (21.10.2004)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/535,275 9 January 2004 (09.01.2004) US

(71) Applicant *(for all designated States except US)*: **ALZA CORPORATION** [US/US]; 1900 Charleston Road, P.O. Box 7210, Mountain View, CA 94039-7210 (US).

(72) Inventors; and

(75) Inventors/Applicants *(for US only)*: **CHAN, Keith, T.** [US/US]; 1235 Balboa Court, Sunnyvale, CA 94086 (US). **CORMIER, Michel, J.N.** [US/US]; 278 Andsbury Ave., Mountain View, CA 94043 (US). **LIN, WeiQi** [US/US]; 72 Peter Coutts Circle, Palo Alto, CA 94305 (US).

(74) Agent: **FRANCIS, Ralph, C.**; Francis Law Group, 1942 Embarcadero, Oakland, CA 94606 (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.

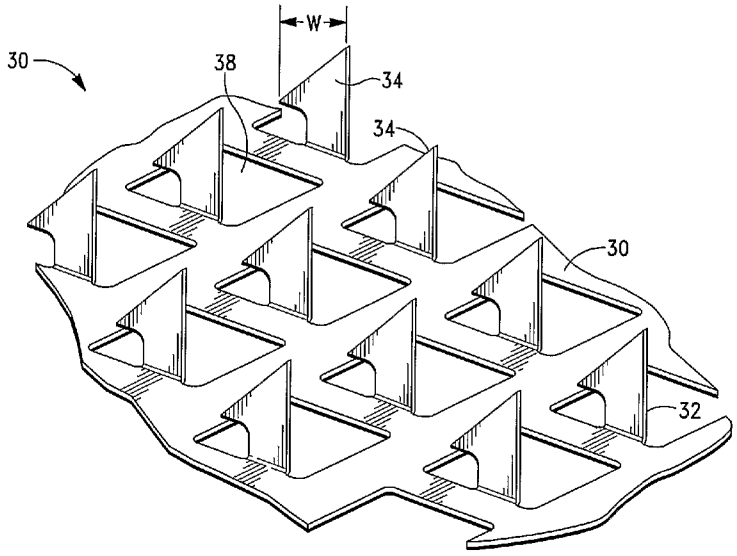
(84) Designated States *(unless otherwise indicated, for every kind of regional protection available)*: ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, 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).

Published:
— *with international search report*
— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

(88) Date of publication of the international search report:
18 May 2006

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: FREQUENCY ASSISTED TRANSDERMAL AGENT DELIVERY METHOD AND SYSTEM



(57) Abstract: An apparatus and method for transdermally delivering a biologically active agent comprising a delivery system having a microprojection member (or system) that includes a plurality of microprojections (or array thereof) that are adapted to pierce through the stratum corneum into the underlying epidermis layer, or epidermis and dermis layers, a formulation containing the biologically active agent and an oscillation inducing device. In one embodiment, the biologically active agent is contained in a biocompatible coating that is applied to the microprojection member. In a further embodiment, the delivery system includes a gel pack having an agent-containing hydrogel formulation that is disposed on the microprojection member after application to the skin of a patient. In an alternative embodiment, the biologically active agent is contained in both the coating and the hydrogel formulation.

WO 2005/069758 A3