



- (51) International Patent Classification:
C09J 5/02 (2006.01)
- (21) International Application Number:
PCT/US2012/024992
- (22) International Filing Date:
14 February 2012 (14.02.2012)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
13/069,373 22 March 2011 (22.03.2011) US
- (71) Applicant (for all designated States except US): **THE BOEING COMPANY** [US/US]; 100 North Riverside Plaza, Chicago, Illinois 60606-2016 (US).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **DAN-JUMBO, Eugene A.** [US/US]; 3333 189th Place, SE, Bothell, Washington 98012 (US). **BALDWIN, Joel P.** [US/US]; 6741A 24th Ave., NW, Seattle, Washington 98117 (US).
- (74) Agents: **SATERMO, Eric K** et al.; The Boeing Company, PO Box 2515, MC 110-SD54, Seal Beach, California 90740-1515 (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, MD, 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))
- 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))

- (88) Date of publication of the international search report:
22 November 2012

(54) Title: METHOD OF PROMOTING ADHESION AND BONDING OF STRUCTURES AND STRUCTURES PRODUCED THEREBY

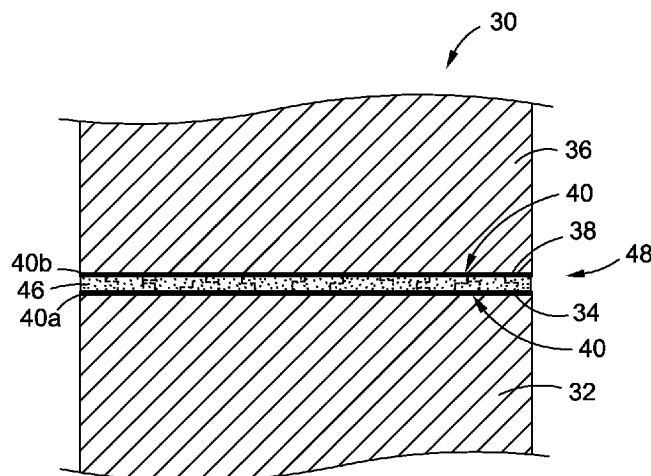


FIG. 2B

(57) Abstract: The disclosure provides in one embodiment a method of promoting adhesion on a composite surface. The method comprises providing a composite structure having at least one composite surface to be bonded. The method further comprises preparing the at least one composite surface. The method further comprises providing a chemical derivatization compound containing active functional groups that promote adhesion. The method further comprises depositing the chemical derivatization compound on the prepared composite surface to form a functional group-adhesive promoter derivatized layer. The method further comprises applying an adhesive layer to the derivatized layer. The method further comprises heat curing the adhesive layer to result in a bond with another structure made of a composite, a metal, or a combination thereof.

