

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
8 March 2007 (08.03.2007)

PCT

(10) International Publication Number  
**WO 2007/027670 A1**

(51) International Patent Classification:

H01L 23/427 (2006.01)

(21) International Application Number:

PCT/US2006/033661

(22) International Filing Date: 28 August 2006 (28.08.2006)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

11/218,973 2 September 2005 (02.09.2005) US

(71) Applicant (for all designated States except US): **HONEYWELL INTERNATIONAL INC.** [US/US]; PO BOX 2245, 101 Columbia Road, Morristown, NJ 07962 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **RUCHERT, Brian** [US/US]; HONEYWELL INTERNATIONAL INC., PO BOX 2245, 101 Columbia Road, Morristown, NJ 07962 (US). **FLINT, James Patrick** [US/US]; HONEYWELL INTERNATIONAL INC., PO BOX 2245, 101 Columbia Road, Morristown, NJ 07962 (US). **TOWNSEND, Richard** [US/US]; HONEYWELL INTERNATIONAL INC., PO BOX 2245, 101 Columbia Road, Morristown, NJ 07962 (US).

(74) Agents: **THOMPSON, Sandra P.** et al.; Buchalter Nemer, 18400 Von Karman Ave., Ste. 800, Irvine, CA 92612-0514 (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, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, 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, 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, IS, IT, LT, LU, LV, 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

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: THERMAL INTERFACE MATERIALS, METHODS OF PREPARATION THEREOF AND THEIR APPLICATIONS

(57) Abstract: Thermal interface materials are described herein that include at least one phase change material, and at least one solvent, solvent mixture or combination thereof, wherein the at least one solvent, solvent mixture or combination thereof at least partially solvates the at least one phase change material. Methods of producing thermal interface materials are also described that include providing at least one phase change material; providing at least one solvent, solvent mixture or combination thereof, wherein the at least one solvent, solvent mixture or combination thereof at least partially solvates the at least one phase change material; and physically coupling the at least one phase change material and the at least one solvent, solvent mixture or combination thereof.



WO 2007/027670 A1