

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

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
24 January 2002 (24.01.2002)

PCT

(10) International Publication Number
WO 02/06366 A1

(51) International Patent Classification⁷: **C08G 14/04**,
73/24, 63/78, 63/87

NALEWAJEK, David [US/US]; Honeywell International Inc., P.O. Box 2245, 101 Columbia Road, Morristown, NJ 07962 (US).

(21) International Application Number: PCT/US01/22213

(22) International Filing Date: 12 July 2001 (12.07.2001)

(74) **Agent: FISH, Robert**; Fish & Associates, LLP, 1440 N. Harbor Blvd., Suite 706, Fullerton, CA 92835 (US).

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
09/619,237 19 July 2000 (19.07.2000) US

(81) **Designated States (national)**: AE, AG, AL, AM, AT, AT (utility model), AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, CZ (utility model), DE, DE (utility model), DK, DK (utility model), DM, DZ, EC, EE, EE (utility model), ES, FI, FI (utility model), 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, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

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

(84) **Designated States (regional)**: ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, 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.

(72) **Inventors; and**

(75) **Inventors/Applicants (for US only): LAU, Kreisler** [US/US]; Honeywell International Inc., P.O. Box 2245, 101 Columbia Road, Morristown, NJ 07962 (US). **LIU, Feng Quan** [US/US]; Honeywell International Inc., P.O. Box 2245, 101 Columbia Road, Morristown, NJ 07962 (US). **KOROLEV, Boris** [US/US]; Honeywell International Inc., P.O. Box 2245, 101 Columbia Road, Morristown, NJ 07962 (US). **BROUK, Emma** [US/US]; Honeywell International Inc., P.O. Box 2245, 101 Columbia Road, Morristown, NJ 07962 (US). **ZHEREBIN, Ruslan** [UA/US]; Honeywell International Inc., P.O. Box 2245, 101 Columbia Road, Morristown, NJ 07962 (US).

(54) **Title:** LOW DIELECTRIC CONSTANT MATERIALS WITH POLYMERIC NETWORKS

(57) **Abstract:** A low dielectric constant material has a polymeric network that is fabricated from a first and a second component. The first component comprises a polymeric strand, and the second component comprises a molecule having a central portion with at least three arms extending from the central portion, wherein each of the arms includes a backbone with a reactive group. The first component and the second component form the polymeric network in a reaction that involves at least one of the reactive groups when the first and second components are thermally activated. Contemplated low dielectric constant materials are advantageously employed in the fabrication of electronic devices, and particularly contemplated devices include integrated circuits



WO 02/06366 A1