

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

(19) World Intellectual Property
Organization

International Bureau

(43) International Publication Date
29 August 2024 (29.08.2024)



(10) International Publication Number
WO 2024/175523 A1

(51) International Patent Classification:

G03F 7/004 (2006.01) C08G 59/68 (2006.01)
C08F 2/50 (2006.01) C08G 65/10 (2006.01)

LU, LV, MC, ME, MK, MT, NL, NO, PL, PT, RO, RS, SE,
SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, KM, ML, MR, NE, SN, TD, TG).

(21) International Application Number:

PCT/EP2024/054110

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))

(22) International Filing Date:

19 February 2024 (19.02.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

63/486,058 21 February 2023 (21.02.2023) US

(71) Applicant: **MERCK PATENT GMBH** [DE/DE]; Frankfurter Straße 250, 64293 Darmstadt (DE).

(72) Inventors: **DAMMEL, Ralph R.**; c/o EMD Performance Materials Corp., 70 Meister Avenue, Branchburg, New Jersey 08876 (US). **LARBIG, Gregor**; c/o EMD Performance Materials Corp., 70 Meister Avenue, Branchburg, New Jersey 08876 (US). **SI, Kun**; c/o EMD Performance Materials Corp., 70 Meister Avenue, Branchburg, New Jersey 08876 (US).

(74) Agent: **RIPPEL, Hans Christoph**; Patentanwälte Isenbruck Bösl Hörschler PartG mbB, Seckenheimer Landstraße 4, 68163 Mannheim (DE).

(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, BN, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CV, CZ, DE, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IQ, IR, IS, IT, JM, JO, JP, KE, KG, KH, KN, KP, KR, KW, KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, MG, MK, MN, MU, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PA, PE, PG, PH, PL, PT, QA, RO, RS, RU, RW, SA, SC, SD, SE, SG, SK, SL, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, WS, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, CV, GH, GM, KE, LR, LS, MW, MZ, NA, RW, SC, SD, SL, ST, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, 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,

(54) Title: ACCEPTOR-SUBSTITUTED EUV PAGS WITH HIGH ELECTRON AFFINITY

(57) Abstract: Compounds of structure (I) are described wherein, R_1 , R_2 , R_{1a} and R_{2a} are independently selected from H, nitro, cyano, and an alkylsulfonyl, wherein at least two of R_1 , R_2 , R_{1a} and R_{2a} are independently selected from nitro, cyano, and an alkylsulfonyl, and X- is not a halide, tosylate, trifluoromethylsulfonate, tetrafluoroborate, an aryl-substituted borates, hexafluorophosphate, hexafluoroarsenate, acetate, trifluoroacetate, methane sulfonate, C-2 to C-20 linear unsubstituted alkyl sulfonates, naphthalenesulfonate, and camphorsulfonate. Also described are EUV negative and positive chemically amplified photoresist compositions containing said compound and the process of using these photoresist to pattern a substrate.



WO 2024/175523 A1