



- (51) **International Patent Classification:**
H01L 21/027 (2006.01) *H01L 21/683* (2006.01)
- (21) **International Application Number:**
PCT/US2014/071698
- (22) **International Filing Date:**
19 December 2014 (19.12.2014)
- (25) **Filing Language:** English
- (26) **Publication Language:** English
- (30) **Priority Data:**
61/919,781 22 December 2013 (22.12.2013) US
- (71) **Applicant:** APPLIED MATERIALS, INC. [US/US];
3050 Bowers Avenue, Santa Clara, California 95054 (US).
- (72) **Inventor:** FOAD, Majeed A.; 640 Sheraton Drive,
Sunnyvale, California 94087 (US).
- (74) **Agent:** ISHIMARU, Mikio; Ishimaru & Associates LLP,
2055 Gateway Place, Suite 700, San Jose, California 95110
(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, BN, 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, IR, IS, JP, KE, KG, KN, KP, KR,
KZ, LA, LC, LK, LR, LS, LU, LY, MA, MD, ME, MG,
MK, MN, 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, 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, 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, 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, KM, ML, MR, NE, SN, TD, TG).

Published:

— with international search report (Art. 21(3))

- (54) **Title:** EXTREME ULTRAVIOLET LITHOGRAPHY SYSTEM HAVING CHUCK ASSEMBLY AND METHOD OF MANUFACTURING THEREOF

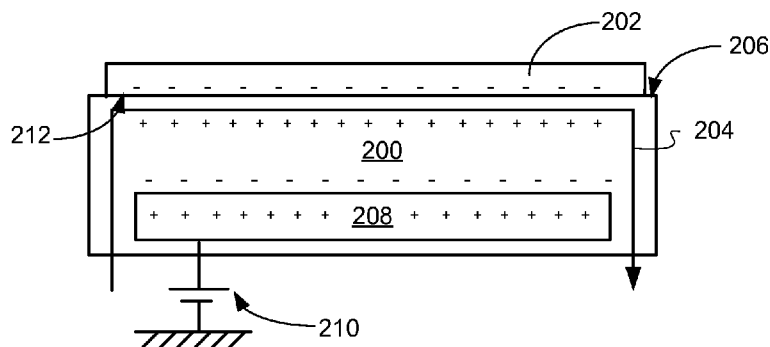


FIG. 2

- (57) **Abstract:** An EUV lithography system and method of manufacturing thereof includes: an EUV light source; a chuck being thermally conducting and smooth having a surface with a predetermined chuck flatness; and a reflective lens system for directing EUV light from the EUV light source over the surface of the chuck.