

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
11 August 2022 (11.08.2022)



(10) International Publication Number
WO 2022/169963 A1

(51) International Patent Classification:

H01J 37/32 (2006.01) **H02M 7/44** (2006.01)
H03H 7/38 (2006.01)

(21) International Application Number:

PCT/US2022/015099

(22) International Filing Date:

03 February 2022 (03.02.2022)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

17/169,220 05 February 2021 (05.02.2021) US

(71) Applicant: **APPLIED MATERIALS, INC.** [US/US];
3050 Bowers Avenue, Santa Clara, California 95054 (US).

(72) Inventors: **HAMMOND, IV, Edward P.**; c/o Applied Materials, Inc., Law Dept., M/S 1269, 3050 Bowers Avenue, Santa Clara, California 95054 (US). **TRACHUK, Yury**; c/o Applied Materials, Inc., Law Dept., M/S 1269, 3050 Bowers Avenue, Santa Clara, California 95054 (US). **DZILNO, Dmitry A.**; c/o Applied Materials, Inc., Law Dept., M/S 1269, 3050 Bowers Avenue, Santa Clara, California 95054 (US).

(74) Agent: **DOUGHERTY, Chad M.** et al.; Patterson + Sheridan LLP, 24 Greenway Plaza, Suite 1600, Houston, Texas 77046 (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, DJ, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IR, IS, IT, JO, JP, KE, KG, KH, KN, KP, KR, KW, 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, 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, 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: RF POWER DELIVERY ARCHITECTURE WITH SWITCHABLE MATCH AND FREQUENCY TUNING

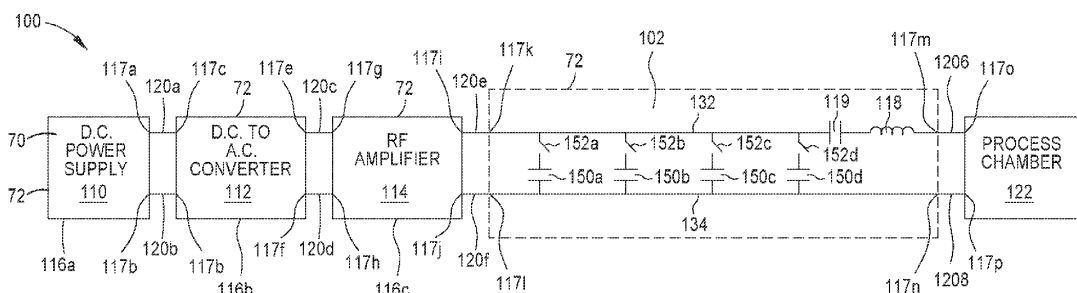


FIG. 1

(57) Abstract: A power supply circuit includes a switchable match, a high and a low voltage bus connectable to the load such that the load is in series between the busses, at least two capacitors having a fixed capacitance connectable between the high and the low voltage bus and a plurality of solid state switches equal in number to the number of capacitors having a fixed capacitance connectable between the high and the low voltage bus, each switch configured and arranged to connect or disconnect one of the capacitors between the high and the low voltage bus into electrical communication between the high and the low voltage bus, and a variable frequency power supply including a high voltage output connection, the high voltage connection connected to the high voltage bus.

WO 2022/169963 A1