

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
13 October 2022 (13.10.2022)



(10) International Publication Number
WO 2022/216833 A1

(51) International Patent Classification:
H05H 1/00 (2006.01)

(21) International Application Number:
PCT/US2022/023686

(22) International Filing Date:
06 April 2022 (06.04.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
63/172,619 08 April 2021 (08.04.2021) US

(71) Applicant: **TAE TECHNOLOGIES, INC.** [US/US];
19631 Pauling, Foothill Ranch, California 92610 (US).

(72) Inventors: **BINDERBAUER, Michl W.**; 10 Crespi Circle, Ladera Ranch, California 92694 (US). **PUTVINSKI, Sergei**; 26721 Calle Juanita, Dana Point, California 92624 (US). **SMIRNOV, Artem N.**; 27 Arborside Way, Mission Viejo, California 92692 (US). **GOTA, Hiroshi**; 91 Long Meadow, Irvine, California 92620 (US). **ROCHE, Thomas**; 101 W. Avenida Gaviota, Apt. B, San Clemente,

California 92672 (US). **MEEKINS, Michael**; 27712 Ridgetop Road, Silverado, California 92676 (US).

(74) Agent: **ROBERTS, Kenneth S.**; ONE LLP, 23 Corporate Plaza, Suite 150, Newport Beach, California 92660 (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, JM, 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,

(54) Title: SYSTEM AND METHODS FOR FORMING AND MAINTAINING HIGH ENERGY AND TEMPERATURE FRC PLASMA VIA NEUTRAL BEAM INJECTION

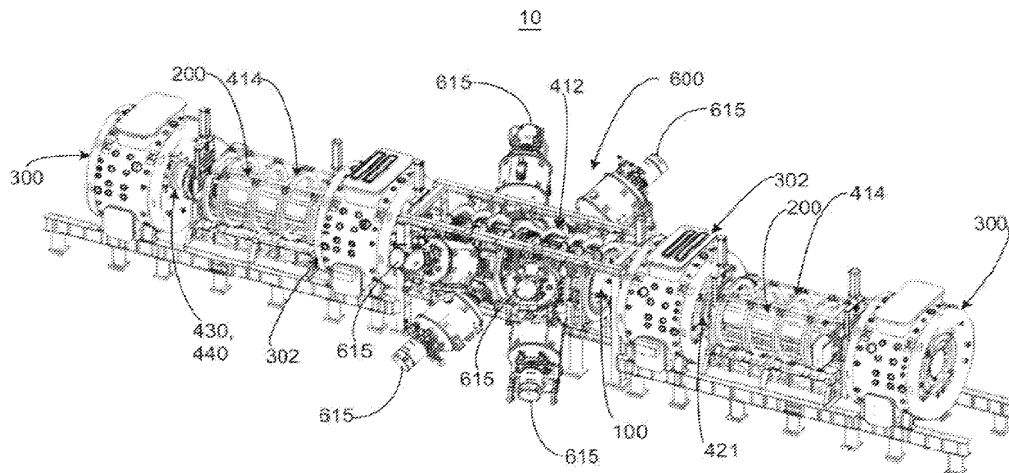


FIGURE 3E

(57) Abstract: A high performance field reversed configuration (FRC) system includes a central confinement chamber, divertors coupled to the ends of the chamber, neutral beam injectors positioned about the chamber, and a magnetic system comprising quasi-dc coils axially positioned along the FRC system components.

[Continued on next page]

WO 2022/216833 A1

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))*
- *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))*