



(51) International Patent Classification:

B22F 9/14 (2006.01) *B33Y 40/00* (2020.01)
B22F 9/04 (2006.01) *B05B 1/34* (2006.01)
B29C 64/314 (2017.01) *B22F 1/065* (2022.01)

(21) International Application Number:

PCT/SG2024/050170

(22) International Filing Date:

22 March 2024 (22.03.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

10202300785U 23 March 2023 (23.03.2023) SG

(71) Applicant: **AGENCY FOR SCIENCE, TECHNOLOGY AND RESEARCH** [SG/SG]; 1 Fusionopolis Way, #20-10, Connexis North, Singapore 138632 (SG).

(72) Inventors: **SOH, Verner**; c/o Institute of Materials Research and Engineering, 2 Fusionopolis Way, #08-03, Innovis, Singapore 138634 (SG). **WUU, Delvin**; c/o Institute of Materials Research and Engineering, 2 Fusionopolis Way, #08-03, Innovis, Singapore 138634 (SG). **WANG, Pei**; c/o Institute of Materials Research and Engineering, 2 Fusionopolis Way, #08-03, Innovis, Singapore 138634 (SG).

(74) Agent: **PATEL, Upasana**; Marks & Clerk Singapore LLP, Tanjong Pagar Post Office, P.O. Box 636, Singapore 910816 (SG).

(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, 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, 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).

Declarations under Rule 4.17:

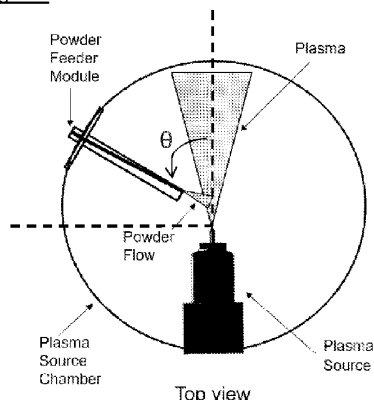
— of inventorship (Rule 4.17(iv))

Published:

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

(54) Title: METHOD FOR FEEDING MATERIAL INTO PLASMA FOR SPHEROIDIZATION

Figure 2



(57) Abstract: Method for feeding material into plasma for spheroidization There is provided a method for producing a spheroidized powder from a feed stream comprising metal powder, the method comprising feeding a first feed stream comprising metal powder into a plasma chamber at a first angle offset from plasma flow within the plasma chamber; and melting and spheroidizing the metal powder within the plasma chamber to form spheroidized powder, wherein the first angle offset from plasma flow is in a direction against the plasma flow. There is also provided a nozzle for feeding a feed stream into a plasma chamber.