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

(19) World Intellectual Property Organization
International Bureau

(43) International Publication Date
03 November 2022 (03.11.2022)

WIPO | PCT

(10) International Publication Number
WO 2022/231420 A1

(51) International Patent Classification:
B22F 12/58 (2021.01) *B33Y 10/00* (2015.01)
B22F 12/55 (2021.01) *B33Y 30/00* (2015.01)
B22F 12/53 (2021.01)

(21) International Application Number:
PCT/MY2022/050030

(22) International Filing Date:
26 April 2022 (26.04.2022)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:

PI 2021002275	26 April 2021 (26.04.2021)	MY
PI 2021006359	22 October 2021 (22.10.2021)	MY
PI 2022002158	25 April 2022 (25.04.2022)	MY

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(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, 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).

Declarations under Rule 4.17:
— *as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))*
— *of inventorship (Rule 4.17(iv))*

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))*
— *in black and white; the international application as filed contained color or greyscale and is available for download from PATENTSCOPE*

(54) Title: SLURRY FEEDSTOCK FOR EXTRUSION-BASED 3D PRINTING OF FUNCTIONALLY GRADED ARTICLES AND CASTING METAL/CERAMIC ARTICLE UNDER LOW PRESSURE AT ROOM TEMPERATURE, METHODS, AND SYSTEM THEREFOR

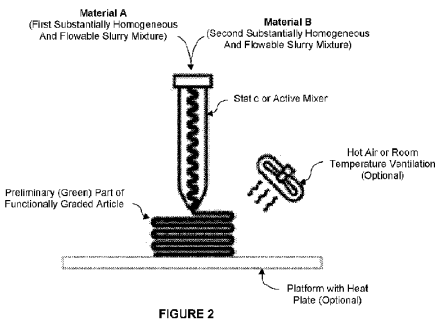


FIGURE 2

(57) Abstract: The present invention discloses a slurry feedstock for extrusion-based three-dimensional, 3D, printing of a functionally graded article, and/or for casting an article under a low pressure at a room temperature, a method of preparing the same, a method of extrusion-based 3D printing and/or casting, and a system therefor. The slurry feedstock comprises a build material comprising a metal, a ceramic or any combinations thereof, an organic polymer binder, an additive and a volatile organic solvent. The build material mixed with the additive and the organic polymer binder dissolved with the volatile organic solvent form a first pre-mix and a second pre-mix, respectively, that are mixed to form a substantially homogeneous and flowable slurry mixture that is used for producing articles.

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