

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

(19) World Intellectual Property
Organization
International Bureau

(43) International Publication Date
12 December 2024 (12.12.2024)



(10) International Publication Number
WO 2024/250078 A1

(51) International Patent Classification:

B29C 64/336 (2017.01) *B29C 64/209* (2017.01)
B29C 35/08 (2006.01) *B29C 64/35* (2017.01)
B29C 64/112 (2017.01) *C09D 11/101* (2014.01)
B29C 64/129 (2017.01) *C09D 11/102* (2014.01)

(21) International Application Number:

PCT/AU2024/050609

(22) International Filing Date:

10 June 2024 (10.06.2024)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

2023901844 09 June 2023 (09.06.2023) AU

(71) Applicant: **UNIVERSITY OF TASMANIA** [AU/AU];
Churchill Avenue, Sandy Bay, Tasmania 7001 (AU).

(72) Inventors: **GUPTA, Vipul**; c/o University of Tasmania,
Churchill Avenue, Sandy Bay, Tasmania 7001 (AU).

NOROUZI, Ahmad Reza; c/o University of Tasmania,
Churchill Avenue, Sandy Bay, Tasmania 7001 (AU).

(74) Agent: **GRIFFITH HACK**; GPO Box 1285, Melbourne,
Victoria 3001 (AU).

(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, 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, 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,

(54) Title: METHODS AND SYSTEMS FOR FABRICATING THREE-DIMENSIONAL OBJECTS BY ADDITIVE MANUFACTURING

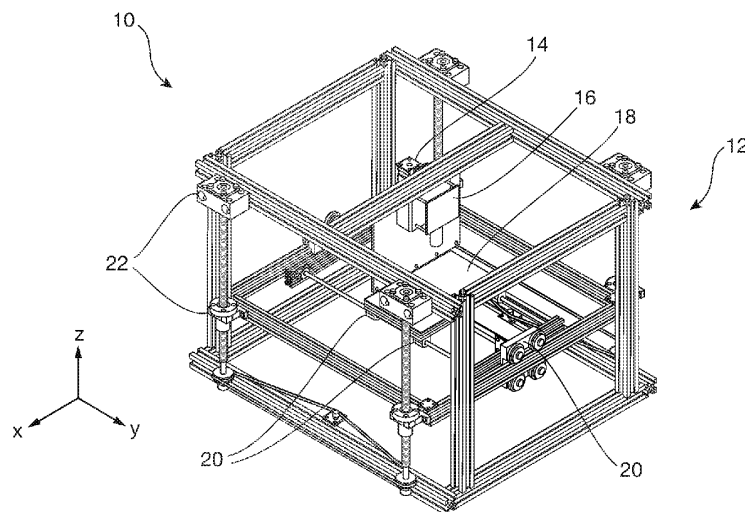


Figure 1A

(57) Abstract: A hybrid Direct Ink Writing and photo-curing system and methods of using same, including a method for fabricating a three-dimensional object layer-by-layer upon a work surface using one or more photocurable inks, the work surface configured to be moveable relative to an ink deposition arrangement and a light source, the method comprising forming a layer of the three-dimensional object, said forming of a layer comprising: depositing photocurable ink; and selectively exposing the deposited ink to the light source, to thereby cure at least a portion of the deposited ink; the cured portion forming at least part of a layer of the three-dimensional object.

[Continued on next page]

WO 2024/250078 A1

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).

Published:

- *with international search report (Art. 21(3))*
- *in black and white; the international application as filed
contained color or greyscale and is available for download
from PATENTSCOPE*