

CORRECTED VERSION

**(19) World Intellectual Property
Organization**
International Bureau



(10) International Publication Number

WO 2020/172244 A8

(43) International Publication Date
27 August 2020 (27.08.2020)

WIPO | PCT

(51) International Patent Classification:

<i>C23C 16/54</i> (2006.01)	<i>H01L 21/673</i> (2006.01)
<i>C23C 14/56</i> (2006.01)	<i>H01L 21/677</i> (2006.01)
<i>H01L 21/67</i> (2006.01)	

(21) International Application Number:

PCT/US2020/018786

(22) International Filing Date:

19 February 2020 (19.02.2020)

(25) **Filing Language:** English

(26) **Publication Language:** English

(30) Priority Data:

62/807,612 19 February 2019 (19.02.2019) US

(71) Applicant: VEECO INSTRUMENTS INC. [US/US]; 1 Terminal Drive, Plainview, NY 11083 (US).

(72) Inventors: PACIER, Michael, W.; 96 Electric Avenue, Leominster, MA 01453 (US). SERSHEN, Michael, J.;

18 Mt. Vernon Street, Cambridge, MA 02140 (US). **BERTUCH, Adam, F.**; 27 Boardman Lane, South Hamilton, MA 01982 (US). **LECORDIER, Laurent**; 16 Cliff Street, #16, Arlington, MA 02476 (US). **BUDEN, Thousif Ahamad, Khan Hosakote**; No. 27, Ground Floor, 9th Main Road, BTM I St Stage, Old Gurappanapalya, Bangalore 560029, Karnataka (IN). **RAO, Ramesh Prasad, Manchaladore Narahari**; No. 775 " Chiguru" 15th B' Main, 1st Stage, 1st Phase, Gokula, Mathikere, Bangalore 560054 (IN).

(74) **Agent: MCGRATH, Kevin, C.;** Downs Rachlin Martin PLLC, 199 Main Street, Burlington, VT 05401 (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, JO, JP, KE, KG, KH, KI, KP,

(54) Title: AUTOMATED BATCH PRODUCTION THIN FILM DEPOSITION SYSTEMS AND METHODS OF USING THE SAME

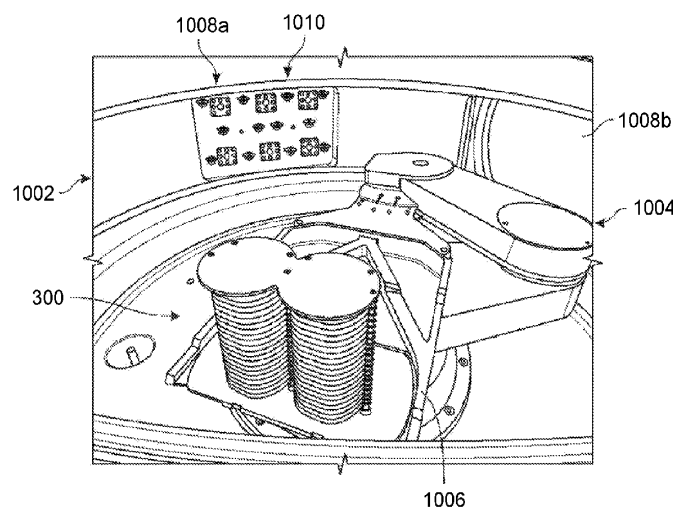


FIG. 10

(57) Abstract: Fully automated batch production thin film deposition systems configured to deliver uniformity combined with high throughput at a low cost-per-wafer. In some examples, systems of the present disclosure include automated safe wafer handling via low-impact batch transfer via transportable wafer racks loaded with a plurality of wafers. In some examples, systems include a modular pre- heat & cool-down architecture that enables a flexible thermal management solution tailored around particular specifications.

[Continued on next page]

WO 2020/172244 A8

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))*

(48) Date of publication of this corrected version:

12 August 2021 (12.08.2021)

(15) Information about Correction:

see Notice of 12 August 2021 (12.08.2021)