UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

3D Systems Corporation et al.,

Petitioner

v.

Intrepid Automation, Inc.,
Patent Owner.

Inter Partes Review (IPR) Proceeding Number: 2025-01241
U.S. Patent No. 11,014,301

Exhibit Number: **Exhibit 1002 for Petitioner**

Exhibit Title: Excerpts from the Prosecution History of the ’301 Patent (“the Prosecution History”) including:

- Non-Final Office Action dated October 6, 2020
- Examiner's Interview Summary dated December 1, 2020
- Response dated December 15, 2020
- Notice of Allowance dated January 15, 2021

Date of Filing: July 8, 2025

Filed By: Petitioner 3D Systems Corporation et al.,

Description of Exhibit: : Excerpts from the Prosecution History of the ’301 Patent (“the Prosecution History”) in the Petition for Inter Partes Review, demonstrating the anticipation of claims 1- 20 of U.S. Patent No. 11,014,301

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/938,298	07/24/2020	Ben Wynne	INTRP003C1	1008

67362 7590 10/06/2020
MLO
12707 High Bluff Drive, Suite 200
San Diego, CA 92130

EXAMINER
LIU, XUE H

ART UNIT	PAPER NUMBER
1742	

NOTIFICATION DATE	DELIVERY MODE
10/06/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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heather@mlo-ip.com

Office Action Summary	Application No. 16/938,298	Applicant(s) Wynne et al.	
	Examiner XUE H LIU	Art Unit 1742	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2a)☐ This action is **FINAL.** 2b) ☑ This action is non-final.

3)☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

4)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims*

5) ☑ Claim(s) 1-20 is/are pending in the application.

5a) Of the above claim(s) _____ is/are withdrawn from consideration.

6) ☐ Claim(s) _____ is/are allowed.

7) ☑ Claim(s) 1-20 is/are rejected.

8) ☐ Claim(s) _____ is/are objected to.

9) ☐ Claim(s) _____ are subject to restriction and/or election requirement

* If any claims have been determined allowable, you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to **PPHfeedback@uspto.gov.**

Application Papers

10)☐ The specification is objected to by the Examiner.

11)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:

a)☐ All b)☐ Some** c)☐ None of the:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

** See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☑ Notice of References Cited (PTO-892)

2) ☑ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b) Paper No(s)/Mail Date 7-24-20

3) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date _____.

4) ☐ Other: _____.

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Claim Rejections - 35 USC § 103

In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

> A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-7, 11-14, 16-17 and 20 is/are rejected under 35 U.S.C. 103 as being unpatentable over Ueda et al. (2016/0368221) in view of Hull et al. (2008/0169586), Kobayashi (2016/0121547), Saruhashi et al. (2015/0202805) and Ueno (US 7,318,718).

Regarding claims 1 and 11, Ueda et al. discloses an additive manufacturing system 10 and a method, comprising:

An image projection system 14 comprising a plurality of image projectors 14A, 14B that project a composite image 32 onto a build area 30 within a resin pool 23 (fig. 1-3, para 32-39), wherein each of the image projectors projects a sub-image 32A, 32B, 32C onto a portion 30A, 30B, 30C of the build area

(fig. 3-4, para 38-40), and the composite image comprises a plurality of sub-images 32A, 32B, 32C arranged in an array (fig. 3-4 and para 38-40); and

A display subsystem 16;

Wherein:

The display system controls the image projection system and each of the image projectors to adjust properties and alignment of the position of each sub-image in the array (fig. 1-4, para 33 and 40-49);

Two or more adjacent sub-images 32A, 32C in the array overlap at two or more sub-image edges 32B (para 38-40, 53 and fig. 3-4, 7-8, 12-13).

Ueda et al. does not teach the properties of each sub-image in the array are adjusted using a stack of filters comprising: an irradiance mask that normalizes irradiance; a gamma adjustment mask that adjusts sub-image energy by mapping a plurality of pixel intensity levels to an addressable range of reactivity for curing the resin, thereby reducing aliasing artifacts of curved or smooth surfaces; a warp correction filter that provides geometric correction; and an edge blending bar at one or more sub-image edges. However, Hull et al. teaches an imager assembly that incorporates two or more individual imagers in an array and accounts for variation in the intensity and alignment of adjacent imagers A, B (abstract, 15B). Hull et al. teaches blending the pixels at the border 752 (fig. 15, 16A, para 20 and claim 1) allows one to create large objects by additive manufacturing process (para 20). Therefore, it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify Ueda et al. with the teaching of Hull et al. in order to produce three-dimensional objects having large cross-sections.

Ueno teaches an optical stereolithographic apparatus wherein the controller contains a distortion aberration correcting unit for correcting the stereolithographic data so as to prevent distortions in shape of the three-dimensional object (claims 4, 9, 23, 28, fig. 8). It would have been

obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify Ueda et al. with the distortion aberration correcting unit as taught by Ueno in order to prevent distortions in shape of the three-dimensional object.

Kobayashi teaches adjusting the energy of light from the projector 31 to prevent the photo-curable resin 23 from curing excessively for the blocks 84A, 84B and 84C that are irradiated with light for a larger number of times (para 10, 12, 60, 65, 77, fig. 6-12). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify Ueda et al. with the teaching of Kobayashi in order to prevent the phot-curable resin from curing excessively.

Saruhashi et al. teaches in fig. 3, a graph showing a relationship between irradiation energy per unit area (irradiation energy density) and cured thickness of a predetermined resin. Saruhashi further teaches adjusting the irradiation energy density of the light based on this relationship (fig. 3, para 43-51) in order to cure the resin liquid 51. It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to modify Ueda et al. with a gamma adjustment mask that adjusts sub-image energy by mapping a plurality of pixel intensity level to an addressable range of reactively for curing the resin in order to ensure the energy is sufficient to cure the resin.

Regarding claims 2 and 12, Hull et al. teaches the plurlaty of pixel intensity levels comprises levels from 0 to 255 since Hull et al. teaches using DLP imagers (para 85).

Regarding claims 3 and 13, it would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to create a transfer function that maps an operating energy range of a printed layer to a control system operating range, wherein the control system operating range is a quantized set of values in order to ensure the energy is sufficient to cure the resin since Saruhashi et al. teaches the relationship between irradiation energy and cured thickness of the resin.

Regarding claims 4 and 14, Saruhashi et al. teaches the gamma adjustment mask comprises a logarithmic relationship between a cure depth of the resin and energy per unit area in the build area (fig. 3 and para 29, 42, 57).

Regarding claim 5, Ueda et al. does not teach the resin is selected from the group consisting of acrylates, epoxies, methacrylates, urethanes, silicone, vinyls, and combinations thereof. However, the resin is not part of the additive manufacturing system since it is not positively recited.

Regarding claims 6 and 16, it would have been obvious to optimize the overlap of adjacent sub-areas within the percentage of from 1% to 5% since Ueda et al. teaches that the percentage of overlap is a function of distance between the projectors (para 53).

Regarding claims 7 and 17, it would have been obvious to optimize the overlap of adjacent sub-areas within the percentage of from 50% to 100% since Ueda et al. teaches that the percentage of overlap is a function of distance between the projectors (para 53).

Regarding claims 10 and 20, Hull et al. teaches the edge blending bar comprises a blending distance and a function selected from the group consisting of: linear, sigmoid and geometric (fig. 15B, 16A and para 152-154).

Claims 8-9 and 18-19 is/are rejected under 35 U.S.C. 103 as being unpatentable over Ueda et al. in view of Hull et al, Kobayashi, Saruhashi et al., and Ueno as applied to claim 1 above, and further in view of Ueda (20180139426).

Regarding claims 8 and 18, Ueno does not teach wherein the warp correction filter corrects skew in projected images that are caused by variation in alignment within the build area. However, Ueda teaches a filter that corrects distortion of the image projected (fig. 2-12 and para 50-51). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed

invention to modify Ueno with the teaching of Ueda in order to correct for distortion of the image projected.

Regarding claims 9 and 19, Ueda teaches the warp correction filter corrects skew in projected images that are caused by variation in projector optics (fig. 2-12 and para 50-51).

Claim 15 is/are rejected under 35 U.S.C. 103 as being unpatentable over Ueda et al. in view of Saruhashi et al., Kobayashi, Ueno, and Hull et al. as applied to claim 11 above, and further in view of Du Toit (WO2016/179661).

Regarding claim 15, Ueda et al. does not teach the resin is selected from the group consisting of acrylates, epoxies, methacrylates, urethanes, silicone, vinyls, and combinations thereof. However, Du Toit teaches that resins that can be used in the 3D printing process can be those based on monomers of olefins, vinylics, acrylate, methacrylate, styrenes (page 7, line 19-29). It would have been obvious to one of ordinary skill in the art before the effective filing date of the claimed invention to use a resin such as acrylates, epoxies, methacrylates, urethane, silicone, or vinyls in the method of Ueda et al. since Du Toit teaches that these are resins that can be used in the 3D printing process.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to XUE H LIU whose telephone number is (571)270-5522. The examiner can normally be reached on 1PM - 10PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 5702721176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/X.H.L/
Examiner, Art Unit 1742

/JEFFREY M WOLLSCHLAGER/
Primary Examiner, Art Unit 1742

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/938,298	07/24/2020	Ben Wynne	INTRP003C1	1008

67362 7590 12/07/2020
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EXAMINER
LIU, XUE H

ART UNIT	PAPER NUMBER
1742	

NOTIFICATION DATE	DELIVERY MODE
12/07/2020	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

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Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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heather@mlo-ip.com

Examiner-Initiated Interview Summary	**Application No.** 16/938,298	**Applicant(s)** Wynne et al.		
	Examiner XUE H LIU	**Art Unit** 1742	**AIA (First Inventor to File) Status** Yes	**Page** 1 of 1

All Participants (applicant, applicants representative, PTO personnel)	**Title**	**Type**
XUE H LIU	Examiner	Telephonic
David Jackrel	Attorney of Record	
Ben Wynne	Inventor	
Ivan Chousal	Inventor	

Date of Interview: 01 December 2020

Issues Discussed:

35 U.S.C. 103

Regarding claims 1 and 11, Kobayashi's teaching of the limitation "normalizes irradiance" was discussed . Claims 1 and 11 were also discussed regarding the limitation "a gamma adjustment mask that adjusts sub-image energy by mapping a plurality of pixel intensity levels to an addressable range of reactivity for curing the resin". It was agreed that Saruhashi et al. and Hull et al. does not teach the limitation of "a plurality of pixel intensity levels". Regarding claims 10 and 20, the rejection over Hull et al. was discussed. The examiner recommended that claim 10 be further amended since the functional limitations of the filters are not positively recited.

/XUE H LIU/ Examiner, Art Unit 1742	/JEFFREY M WOLLSCHLAGER/ Primary Examiner, Art Unit 1742

Applicant is reminded that a complete written statement as to the substance of the interview must be made of record in the application file. It is the applicants responsibility to provide the written statement, unless the interview was initiated by the Examiner and the Examiner has indicated that a written summary will be provided. See MPEP 713.04
Please further see:
MPEP 713.04
Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews, paragraph (b)
37 CFR § 1.2 Business to be transacted in writing

Applicant recordation instructions: It is not necessary for applicant to provide a separate record of the substance of interview.

Examiner recordation instructions: Examiners must summarize the substance of any interview of record. A complete and proper recordation of the substance of an interview should include the items listed in MPEP 713.04 for complete and proper recordation including the identification of the general thrust of each argument or issue discussed, a general indication of any other pertinent matters discussed regarding patentability and the general results or outcome of the interview, to include an indication as to whether or not agreement was reached on the issues raised.

REMARKS

This amendment is in response to the Office Action dated October 6, 2020. Claims 1 and 5 are currently amended. Claims 1-20 are pending in prosecution.

Applicant thanks the Examiner for the courtesy of the Examiner Interview conducted by telephone on December 1, 2020 with David Jackrel, Ben Wynne and Ivan Chousal. Distinctions between the present claims 1, 10, 11 and 20 and the cited references Kobayashi (2016/0121547), Saruhashi et al. (2015/0202805) and Hull et al. (2008/0169586) were discussed. It was agreed that Saruhashi et al. (2015/0202805) and Hull et al. (2008/0169586) do not teach the limitation of "a plurality of pixel intensity levels."

I. Amendments to the Claims

Claim 1 has been amended to clarify that the additive manufacturing system comprises the stack of filters, support for which may be found throughout the specification as filed, for example in original claim 1 and [0044].

Claim 5 has been amended to recite that the additive manufacturing system comprises the resin pool, support for which may be found throughout the specification as filed, for example in [0048] and [0053].

No new matter has been added hereby.

II. Rejections Under 35 U.S.C. 103

Claims 1-7, 11-14 (note, Applicant assumes this to be 10-14), 16-17 and 20 were rejected under 35 U.S.C. 103 as being unpatentable over Ueda et al. (2016/0368221, hereinafter "Ueda") in view of Hull et al. (2008/0169586, hereinafter "Hull"), Kobayashi (2016/0121547, hereinafter "Kobayashi"), Saruhashi et al. (2015/0202805, hereinafter "Saruhashi") and Ueno (US 7,318,718, hereinafter "Ueno").

Claims 8-9 and 18-19 were rejected under 35 U.S.C. 103 as being unpatentable over Ueda in view of Hull, Kobayashi, Saruhashi, and Ueno as applied to claim 1 above, and further in view of Ueda (2018/0139426, hereinafter "Ueda 2").

Claim 15 was rejected under 35 U.S.C. 103 as being unpatentable over Ueda in view of Saruhashi, Kobayashi, Ueno, and Hull as applied to claim 11 above, and further in view of Du Toit (WO2016/179661, hereinafter "Du Toit").

Applicant traverses the 103 rejections, and claim 1 has been amended for clarity to expedite prosecution. The stack of filters comprises the irradiance mask, the gamma adjustment mask, the warp correction filter, and the edge blending bar. Claim 1 recites limitations for the stack of filters that are not described by, or obvious from, the cited prior art. For example, claim 1 recites that the stack of filters comprises "a gamma adjustment mask configured to adjust sub-image energy by **mapping a plurality of pixel intensity levels to an addressable range of reactivity** for curing the resin." Claim 1 further recites that the gamma adjustment mask with the recited configuration reduces "aliasing artifacts of curved or smooth surfaces." As agreed in the Examiner Interview, the cited art, such as Saruhashi and Hull, does not teach all of the limitations in claim 1.

Claim 11 includes similar limitations for the set of filters, including limitations on the irradiance mask, the gamma adjustment mask, the warp correction filter, and the edge blending bar. As with claim 1, the cited art, such as Saruhashi and Hull, does not teach all of the limitations in claim 11.

In light of the present amendments and remarks, Applicant respectfully requests that the rejections of claims 1 and 11, claims 2-10 dependent on claim 1, and claims 12-20 dependent on claim 11, under 35 U.S.C. 103 be withdrawn.

III. Conclusion

The Applicant believes that all claims now pending in this application are in condition for allowance. The expedient issuance of a formal Notice of Allowance is respectfully requested. If any issues remain, the Examiner is asked to telephone the undersigned, thereby simplifying and expediting the examination and prosecution process.

Respectfully submitted,

MLO

/David B. Jackrel/

David B. Jackrel
Reg. No. 76,731

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Electronic Acknowledgement Receipt

EFS ID:	41382198
Application Number:	16938298
International Application Number:	
Confirmation Number:	1008
Title of Invention:	MULTIPLE IMAGE PROJECTION SYSTEM FOR ADDITIVE MANUFACTURING
First Named Inventor/Applicant Name:	Ben Wynne
Customer Number:	67362
Filer:	David Bryan Jackrel
Filer Authorized By:	
Attorney Docket Number:	INTRP003C1
Receipt Date:	15-DEC-2020
Filing Date:	24-JUL-2020
Time Stamp:	12:12:47
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		20201215_INTRP003C1_Amend.pdf	144221 63993753e8e7e04c4aa8f922ae6170ffb1b3f79a	yes	8

	Multipart Description/PDF files in .zip description		
	Document Description	**Start**	**End**
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
	Claims	2	5
	Applicant Arguments/Remarks Made in an Amendment	6	8
Warnings:			
Information:			
	Total Files Size (in bytes):	144221	

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New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

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NOTICE OF ALLOWANCE AND FEE(S) DUE

67362 7590 01/15/2021

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EXAMINER
LIU, XUE H

ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 01/15/2021

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/938,298	07/24/2020	Ben Wynne	INTRP003C1	1008

TITLE OF INVENTION: MULTIPLE IMAGE PROJECTION SYSTEM FOR ADDITIVE MANUFACTURING

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	04/15/2021

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

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Alexandria, Virginia 22313-1450

By fax, send to: (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

67362 7590 01/15/2021

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San Diego, CA 92130

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/938,298	07/24/2020	Ben Wynne	INTRP003C1	1008

TITLE OF INVENTION: MULTIPLE IMAGE PROJECTION SYSTEM FOR ADDITIVE MANUFACTURING

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	$600	$0.00	$0.00	$600	04/15/2021

EXAMINER	ART UNIT	CLASS-SUBCLASS
LIU, XUE H	1742	264-401000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❑ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❑ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
2 _____
3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❑ Individual ❑ Corporation or other private group entity ❑ Government

4a. Fees submitted: ❑ Issue Fee ❑ Publication Fee (if required) ❑ Advance Order - # of Copies _____

4b. Method of Payment: *(Please first reapply any previously paid fee shown above)*

❑ Electronic Payment via EFS-Web ❑ Enclosed check ❑ Non-electronic payment by credit card (Attach form PTO-2038)

❑ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

❑ Applicant certifying micro entity status. See 37 CFR 1.29

❑ Applicant asserting small entity status. See 37 CFR 1.27

❑ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.
NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.
NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____

UNITED STATES PATENT AND TRADEMARK OFFICE

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
16/938,298	07/24/2020	Ben Wynne	INTRP003C1	1008

67362 7590 01/15/2021

MLO
12707 High Bluff Drive, Suite 200
San Diego, CA 92130

EXAMINER	
LIU, XUE H	

ART UNIT	PAPER NUMBER
1742	

DATE MAILED: 01/15/2021

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450. Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 16/938,298	Applicant(s) Wynne et al.	
	Examiner XUE H LIU	Art Unit 1742	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☑ This communication is responsive to 12-15-20.
   ☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☑ The allowed claim(s) is/are 1-20 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see **http://www.uspto.gov/patents/init_events/pph/index.jsp** or send an inquiry to **PPHfeedback@uspto.gov.**

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

   Certified copies:

   a) ☐ All b) ☐ Some *c) ☐ None of the:

   1. ☐ Certified copies of the priority documents have been received.
   2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
   3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

   * Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
   ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

   Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.
5. ☐ Examiner's Amendment/Comment
6. ☑ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/JEFFREY M WOLLSCHLAGER/
Primary Examiner, Art Unit 1742

DETAILED ACTION

Notice of Pre-AIA or AIA Status

The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Reasons for Allowance

The following is an examiner's statement of reasons for allowance: Regarding claims 1 and 11, the prior art does not teach the gamma adjustment mask adjusts sub-image energy by mapping a plurality of pixel intensity levels to an addressable range of reactivity for curing the reins, thereby reducing aliasing artifacts of curved or smooth surface, in combination with other features recited in the claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to XUE H LIU whose telephone number is (571)270-5522. The examiner can normally be reached on 1PM - 10PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at http://www.uspto.gov/interviewpractice.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on 5702721176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see https://ppair-my.uspto.gov/pair/PrivatePair. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/X.H.L/
Examiner, Art Unit 1742

/JEFFREY M WOLLSCHLAGER/
Primary Examiner, Art Unit 1742