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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
13/964,938	08/12/2013	Donald K. Smith	EGQ-005CP3C1	1022

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EXAMINER	
MCCORMACK, JASON L	

ART UNIT	PAPER NUMBER
2881	

NOTIFICATION DATE	DELIVERY MODE
07/17/2014	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.

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ASML 1310

Office Action Summary	Application No. 13/964,938	Applicant(s) SMITH, DONALD K.	
	Examiner JASON MCCORMACK	Art Unit 2881	AIA (First Inventor to File) Status No

-- 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 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, 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 *17 June 2014*.

☐ 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) *1-30* 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5a) Of the above claim(s) _____ is/are withdrawn from consideration.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) *1-30* 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/08)

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

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 6/17/2014 have been fully considered but they are not persuasive.

Regarding applicant's argument (beginning on page 9) that Wester fails to disclose a pressurized plasma chamber; Wester discloses "a vacuum pump 118 removes exhaust plasma gas from the chamber 120" [0005]. Since it is impossible for the vacuum pump 118 of Wester to form a perfect vacuum, the chamber inherently has some gas pressure and is therefore pressurized as required by claim 1. It is believed from applicant's specification and the response that applicant intends for the chamber to operate above atmospheric pressure (particularly since paragraph [0069] describes that the chamber operates "at a pressure of greater than 10 atmospheres to produce a high brightness light"). However, MPEP 2111.01 describes that "the claims must be interpreted as broadly as their terms reasonably allow. In re American Academy of Science Tech Center, 367 F.3d 1359, 1369, 70 USPQ2d 1827, 1834 (Fed. Cir. 2004)". Such an interpretation of the term "pressurized" is not unreasonable since, for example, Kisa U.S. Patent No. 4,738,748 describes in its claim 11 "an airtight vacuum pressurized reaction chamber having a vacuum created therein". Clearly, one of ordinary skill in the art at the time of the invention would recognize that a chamber that is pressurized to a vacuum condition is still considered "pressurized". For this reason, the current rejection in view of Wester remains proper.

If, however, the claims were to be amended and/or interpreted that the term "pressurized" referred to "above atmospheric pressure", Bykanov et al. U.S. PGPUB No. 2006/0097203 describes that "In a typical LPP setup, it may be desirable to maintain a relatively strong vacuum in the chamber 806, and thus, the amount of etchant introduced into the chamber 806 is limited. As a consequence, the allowable etchant flow rate and pressure are generally too small to effectively heat the window 800 to a temperature sufficient to achieve a reasonable reaction rate between the etchant and debris deposits. For example, HBr gas at 600 degrees C. and at a pressure of 1 to 2 torr in the gas cone can only transport about 1 Watt of heating power at typical flow rates. On the other hand, when applying a heated gas to the outside surface 808, an elevated (greater than 1 atm) pressure can be used allowing the mass flow to be significantly higher and a power in the range of about 10.sup.1-10.sup.2 W is feasible" [0063]. It would have been obvious to one possessing ordinary skill in the art at the time of the invention to have combined Wester and Bykanov, since Bykanov describes that a typical low-pressure system (such as that of Wester) may be modified by the application of a heated gas outside of a laser irradiation window to operate at pressures greater than 1 atm (above atmospheric pressure), in order to prevent the buildup of undesirable debris on delicate optical systems, and to "significantly" increase the power of the ultraviolet beam output from the plasma. However, Examiner maintains that such an interpretation need to apply to the present claim language.

Applicant cited Tejnil U.S. PGPUB No. 2005/0243390 (on page 10) as evidence that pressurizing the chamber of Wester would prevent the light source of Wester from

producing EUV light. As stated, above, the chamber of Wester may already be considered “pressurized”. Additionally, as stated, above, it would have been obvious to operate the chamber of Wester above atmospheric pressure in order to prevent debris buildup in the plasma chamber. The portion of Tejnil cited in applicant's remarks pertains to "EUV imaging" and is silent regarding chamber pressures of a plasma chamber during the formation of a plasma. Further, Tejnil states that EUV imaging "may" be carried out in a near vacuum. As stated, above, it is Examiner's position that a "near vacuum" is pressurized above a vacuum state. Additionally, this portion of Tejnil merely states that EUV imaging may be in a vacuum, thereby leaving the possibility that it may not be performed in a vacuum. Tejnil does not include a specific teaching that EUV radiation cannot or should not be formed except in a vacuum.

Applicant cites (on page 10) the entry "extreme ultraviolet radiation" in McGraw-Hill Dictionary of Scientific and Technical Terms; this merely teaches that extreme ultraviolet radiation may sometimes be referred to as "vacuum ultraviolet radiation" and is silent regarding the conditions of a plasma chamber in which such radiation may be formed - particularly in the field of a laser produced plasma.

Applicant contends (on page 10) that claim 1 relates to high brightness light in a wavelength between 290 and 400 nm. It is noted that the brightness and wavelength are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Applicant’s claims do not distinguish the difference between EUV radiation and high brightness radiation, but

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