Notice of Allowability	Application No. 13/024,027	Applicant(s) SMITH ET AL.	
	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--

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 *4/12/2013*.
   ☐ 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 *1-8 and 56-74*. 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: _____.

   Interim copies:

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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 *4/29/2013* .
5. ☒ Examiner's Amendment/Comment
6. ☒ Examiner's Statement of Reasons for Allowance
7. ☐ Other _____.

/JASON MCCORMACK/
Examiner, Art Unit 2881

EXAMINER'S AMENDMENT

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with applicant's representative Gerald Worth on 4/29/2013.

The application has been amended as follows:

Claim 58. A method for producing light comprising: providing a light source comprising a pressurized chamber having a gas disposed therein; an ignition source comprising electrodes for exciting the gas, the excited gas having at least one strong absorption line at an infrared wavelength; and at least one laser ~~for providing~~ configured to provide energy to the excited gas at a wavelength ~~near~~ within 10 nm of a strong absorption line of the excited gas within the chamber to sustain a plasma and produce ~~a high brightness~~ an at least substantially continuous, plasma-generated light; exciting with the ignition source the gas within the chamber; tuning the laser to a first wavelength to provide energy to the excited gas in the chamber to produce the ~~high brightness~~ light, the excited gas absorbing energy near the first wavelength; and tuning the laser to a second wavelength to provide energy to the excited gas in the chamber to maintain the ~~high brightness~~ light, the excited gas absorbing energy near the second wavelength.

Claim 67. A light source comprising: a pressurized chamber having a gas disposed therein; an ignition source comprising electrodes for exciting the gas, the excited gas having at least one strong absorption line at an infrared wavelength; and at least one laser ~~for providing~~ configured to provide energy to the excited gas at a wavelength ~~near~~ within 10 nm of a strong absorption line of the excited gas within the chamber to sustain a plasma and produce ~~a high brightness~~ an at least substantially continuous, plasma-generated light, wherein the chamber has one or more walls and the at least one laser provides energy to the gas within the chamber to produce a plasma that generates a light emitted through the walls of the chamber, the light source further comprising: a dichroic mirror directed toward the plasma, the dichroic mirror selectively reflecting at least one wavelength of light such that the light generated by the plasma is not substantially reflected toward the at least one laser.

Claim 68. A light source comprising: a pressurized chamber having a gas disposed therein; an ignition source comprising electrodes for exciting the gas, the gas having at least one strong absorption line at an infrared wavelength; and at least one laser ~~for providing~~ configured to provide energy to the excited gas at a wavelength ~~near~~ within 10 nm of a strong absorption line of the excited gas within the chamber to sustain a plasma and produce ~~a high brightness~~ an at least substantially continuous, plasma-generated light; the at least one laser provides energy to the excited gas within the chamber to produce the ~~high brightness~~ light having a first spectrum, the light source

further comprising; an optical element disposed within the path of the ~~high brightness~~ light to modify the first spectrum of the ~~high brightness~~ light to a second spectrum.

2. The following is an examiner's statement of reasons for allowance:

Cheymol et al. U.S. PGPUB No. 2006/039435 and Kusunose U.S. PGPUB No. 2002/0080834 discloses irradiating Xenon gas with an infrared laser (see explanation in Final Office Action 12/12/2012). However, as discussed in the interview 3/13/2013, these light sources utilize an extremely high-powered drive laser source to create a short pulse of ultraviolet light from a plasma. The high power nature of the drive laser prohibits the formation of sustained plasma (see, for example, [0002] of Kusunose). Further, while Cheymol and Kusunose disclose an infrared laser irradiating a gas having at least one strong absorption line in the infrared, there is no explicit teaching that the wavelength is selected to be within 10 nm of the strong absorption line of the excited gas.

Conrad 4,152,625 discloses that a high powered infrared laser [col. 1; line 56] can be used to "maintain [a] plasma" [Abstract] where the laser may be irradiating xenon gas [col. 2; line 6]. Also there are electrodes "providing electrical discharge" [col. 2; line 26]. However, there is no disclosure of selecting a wavelength to be within 10 nm of the strong absorption line of an excited gas.

Further, a search of the prior art did not reveal an explicit teaching of the claimed wavelength or of a motivation to optimize a laser's wavelength to within 10 nm of the

strong absorption line of an excited gas for the purpose of generating a sustained plasma.

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."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JASON MCCORMACK whose telephone number is (571)270-1489. The examiner can normally be reached on Monday - Thursday 7:00am - 3:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571)272-2293. 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 http://pair-direct.uspto.gov. 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.

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