Notice of Allowability	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--

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 *3/5/2015*.
   ☐ 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 *1-4,8,9,13-20,26-28 and 31-39*. 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 2/11/2015,3/11/2015
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 _____.

/NICOLE IPPOLITO/
Primary Examiner, Art Unit 2881

1. The present application is being examined under the pre-AIA first to invent provisions.

DETAILED ACTION

Response to Arguments

2. Applicant's arguments see pages 7-8, filed 3/5/2015, with respect to the amendments to claim 13, and the filing of the terminal disclaimer have been fully considered and are persuasive. The rejections of claims 1-4, 8, 9, 13-20, 26-28, and 31-39 have been withdrawn.

Allowable Subject Matter

3. Claims 1-4, 8, 9, 13-20, 26-28, and 31-39 are allowed.

Regarding independent claims 1, 13, 26, and 32; Manning U.S. PGPUB No. 2006/0152128 discloses a lamp with "inner pressure to about 10 or 11 atm… The higher gas pressure essentially contained the expansion of the plasma during operation, confining the arc discharge" [0028] having "A sparker electrode 124 is positioned inside the envelope for generating a preionization of the gas, in order to obtain a more uniform discharge. The discharge across the arc gap can generate light that is reflected by a mirror assembly 126 positioned relative to the arc gap and/or transmitted through the light transmitting window 106" [0004]. The generated light has "a spectrum on the order of about 190 nm to about 4000 nm" [0018]. However, Manning does not disclose at least one substantially continuous laser for providing energy within a wavelength range from about 700 nm to 2000 nm to the ionized gas to sustain a plasma within the chamber to produce a plasma-generated light having wavelengths greater than 50 nm.

Cross et al. U.S. Patent No. 4,780,608 discloses that "Recently, free-standing continuous discharges have been produced by focusing the output of a sufficiently powerful cw-CO_2 laser into inert gases, molecular gases and mixtures thereof at atmospheric pressures or above… Although cw-laser radiation can maintain the continuous optical discharge, the output power of such light sources is generally insufficient to initiate the discharge. Consequently, such plasmas can be initiated using conventional electrode sparks or by the spark produced by a focused laser pulse superimposed on the focal volume of the cw-laser beam used to maintain the plasma" [col. 1; lines 30-52]. However, Cross is concerned with producing ions and does not describe that light is produced by the plasma, Cross does not describe a transparent region of the chamber allowing at least a portion of a plasma-generated light to exit the chamber, as claimed in claim 1 (and does not explicitly describe the claimed pressure, laser wavelength, or plasma-generated light wavelength values).

One of ordinary skill in the art at the time of the invention would not have combined Manning and Cross since they belong to different fields of endeavor; namely, Manning uses a plasma to generate light in a light source, while Cross uses a plasma to generate ions. Further, if Manning and Cross were combined, the references still fail to disclose at least one substantially continuous laser for providing energy within a wavelength range from about 700 nm to 2000 nm to the ionized gas to sustain a plasma within the chamber to produce a plasma-generated light having wavelengths greater than 50 nm (Cross does not disclose the wavelength of the disclosed laser, and does not disclose that the laser sustains the plasma for producing light, and therefore cannot

disclose that light having wavelengths greater than 50 nm can be produced by a plasma sustained by a laser).

The prior art fails to disclose at least one substantially continuous laser for providing energy within a wavelength range from about 700 nm to 2000 nm to an ionized gas to sustain a plasma within a chamber having greater than atmospheric pressure to produce a plasma-generated light having wavelengths greater than 50 nm, as claimed in independent claim 1, with similar limitations in independent claims 13, 26, and 32.

Regarding dependent claims 2-4, 8, 9, 14-20, 27-28, and 31, 33-39; these claims are allowable at least for their dependence, either directly or indirectly upon independent claims 1, 13, 26, and 32.

Conclusion

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.

/JASON MCCORMACK/
Examiner, Art Unit 2881

/NICOLE IPPOLITO/

Primary Examiner, Art Unit 2881