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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/510,959	10/09/2014	Donald K. Smith	EGQ-005CP3C3	5575
42532	7590	11/12/2014	EXAMINER	
PROSKAUER ROSE LLP ONE INTERNATIONAL PLACE BOSTON, MA 02110			MCCORMACK, JASON L	
			ART UNIT	PAPER NUMBER
			2881	
			NOTIFICATION DATE	DELIVERY MODE
			11/12/2014	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.

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

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Office Action Summary

Application No.
14/510,959

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 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 10/9/2014.
 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/08a and/or PTO/SB/08b)
- 3) Interview Summary (PTO-413) Paper No(s)/Mail Date. _____

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

DETAILED ACTION

Specification

2. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Light Source for Generating Light from a Laser-Sustained Plasma in an Above-Atmospheric Pressure Chamber.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of pre-AIA 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 15 is rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by Cross et al. U.S. Patent No. 4,780,608.

Regarding claim 15, Cross discloses a light source comprising a pressurized chamber in which a laser sustained plasma emits plasma-generated light produced by the laser sustained plasma by providing at least substantially continuous laser energy to an ionized medium within the chamber and maintaining the chamber at a pressure that is greater than atmospheric pressure “free-standing continuous discharges have been produced by focusing the output of a sufficiently powerful cw-CO₂ laser into inert gases,

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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].

Claim Rejections - 35 USC § 103

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

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1, 2, 3, 4, 7, 8, 9, 10, 13, and 14 are rejected under pre-AIA 35 U.S.C. 103(a) as being unpatentable over Kane et al. U.S. Patent No. 6,541,924 in view of Cross et al. U.S. Patent No. 4,780,608.

Regarding claim 1, Kane discloses a light source "The embodiments of the invention provide methods of and systems for generating light usually ultraviolet light or vacuum ultraviolet light" [col. 6; lines 14-16] comprising: a pressurized chamber "The lamp comprises a discharge chamber" [Abstract] having a gas at a pressure greater than atmospheric pressure "Typically the gas pressure in the discharge chamber is in

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the range of from about 1.001 atmospheres-3 atmospheres” [col. 7; lines 13-15]; an ignition source for ionizing a gas “a discharge gas in said chamber” [col. 1; line 41] within the chamber “two electrodes disposed with respect to the chamber for discharging electrical energy therebetween” [Abstract]. Kane discloses the claimed invention except that while Kane discloses that it is known to use a laser for providing energy to an ionized gas to sustain a plasma “More commonly, laser-based sources of high-peak power UV radiation are used for such applications” [col. 8; lines 6-8], there is no explicit disclosure of at least one laser for providing energy to the ionized gas to sustain a plasma within the chamber to produce a plasma-generated light.

Cross discloses that “free-standing continuous discharges have been produced by focusing the output of a sufficiently powerful cw-CO₂ 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].

It would have been obvious to one possessing ordinary skill in the art at the time of the invention to have combined Kane and Cross in order to maintain the light emitted from a plasma for a desired amount of time after the plasma is initially produced by an electrode discharge.

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