	ed States Paten	T AND TRADEMARK OFFICE	UNITED STATES DEPAR United States Patent and Address: COMMISSIONER I P.O. Box 1450 Alexandria, Virginia 22 www.uspto.gov	TMENT OF COMMERCE Trademark Office °OR PATENTS 313-1450
APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
14/448,258	07/31/2014	Donald K. Smith	EGQ-005CP3C2	8145
42532 7590 12/15/2014 PROSKALIER ROSELLP			EXAMINER	
ONE INTERNATIONAL PLACE BOSTON, MA 02110			MCCORMACK, JASON L	
			ART UNIT	PAPER NUMBER
			2881	
			NOTIFICATION DATE	DELIVERY MODE
			12/15/2014	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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	Application No. 14/448,258	Applicant(s) SMITH, DONALD K.	
Office Action Summary	Examiner JASON MCCORMACK	Art Unit 2881	AIA (First Inventor to File) Status No
The MAILING DATE of this communication app Period for Reply	bears on the cover sheet with the o	corresponden	ce address
 A SHORTENED STATUTORY PERIOD FOR REPLY THIS COMMUNICATION. Extensions of time may be available under the provisions of 37 CFR 1.1 after SIX (6) MONTHS from the mailing date of this communication. If NO period for reply is specified above, the maximum statutory period v Failure to reply within the set or extended period for reply will, by statute Any reply received by the Office later than three months after the mailing earned patent term adjustment. See 37 CFR 1.704(b). 	Y IS SET TO EXPIRE <u>3</u> MONTH 36(a). In no event, however, may a reply be the vill apply and will expire SIX (6) MONTHS from , cause the application to become ABANDONE g date of this communication, even if timely file	S FROM THE nely filed the mailing date o ED (35 U.S.C. § 13: d, may reduce any	f this communication.
Status			
1) Responsive to communication(s) filed on <u>$9/30/2$</u>	<u>/2014</u> .		
A declaration(s)/affidavit(s) under 37 CFR 1.1	(b) was/were filed on		
2a) This action is FINAL . 2b) This	action is non-final.	and famile along	
3) An election was made by the applicant in resp	onse to a restriction requirement	set forth duri	ng the interview on
1 Since this application is in condition for allowa	a avenue of the formal matters or	s action as	to the merite is
closed in accordance with the practice under <i>F</i>	Experte Quevle 1935 C. D. 11 A		
	puno Quuyio, 1000 0.D. 11, 4		
JISPOSITION OF Claims*			
5a) Of the above claim(s) is a reprint the application	Nn from consideration		
6 Claim(s) is are allowed	with thom consideration.		
7 Claim(s) is/are rejected			
8) Claim(s) is/are objected to			
9) Claim(s) are subject to restriction and/o	r election requirement.		
* If any claims have been determined <u>allowable</u> , you may be e	igible to benefit from the Patent Pro	secution High	way program at a
participating intellectual property office for the corresponding a	pplication. For more information, ple	ase see	
<u> http://www.uspto.gov/patents/init_events/pph/index.jsp</u> or send	an inquiry to <u>PPHfeedback@uspto.</u>	<u>qov</u> .	
Application Papers			
10) The specification is objected to by the Examine	er.		
11) The drawing(s) filed on is/are: a) acc	epted or b) objected to by the	Examiner.	
Applicant may not request that any objection to the	drawing(s) be held in abeyance. Se	e 37 CFR 1.85	(a).
Replacement drawing sheet(s) including the correct	ion is required if the drawing(s) is ob	jected 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) \square All b) \square Some** c) \square None of the			
1. Certified copies of the priority documen	ts have been received.		
2. Certified copies of the priority documen	ts have been received in Applica	tion No.	
3. Copies of the certified copies of the price	prity documents have been receiv	ved in this Na	– tional Stage
application from the International Burea	u (PCT Rule 17.2(a)).		
** See the attached detailed Office action for a list of the certifi	ed copies not received.		
Attachment(s)			
1) 🔀 Notice of References Cited (PTO-892)	3) 🔲 Interview Summary	(PTO-413)	
) X Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/:	SB/08b) Paper No(s)/Mail D	ate	Page 1
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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: Laser-Driven Plasma-Based Light Source Having

Optics for Forming an Elongated Plasma.

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. Claims 1, 8, 15, and 21 are rejected under pre-AIA 35 U.S.C. 102(b) as being anticipated by Hertz et al. U.S. PGPUB No. 2002/0044629.

Regarding claim 1, Hertz discloses a plasma-based light source "a plasma P emitting the desired X-ray and EUV radiation" [0033], comprising: a pressurized chamber (3) "it is necessary to provide a suitable gas atmosphere in the low-pressure chamber" [0005] configured to contain an ionized gas (Wester U.S. PGPUB No. 2004/0016894 describes how, as a plasma radiates light, as described in Hertz, "Plasma 104 radiates light as the ionized gas molecules transition from the higher

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energy states back to the lower energy ground state. When Xenon is used to generate plasma 104, the plasma emits light having strong line emissions with wavelengths between 13 to 14 nm" [0006], it is therefore clear that the plasma (P) of Hertz, formed using xenon [0034], necessarily becomes an ionized gas as the plasma radiates light); a laser for providing a beam of laser energy to the ionized gas within the chamber to maintain a plasma "The energy beam is preferably a beam of electromagnetic radiation, such as laser radiation, which interacts with the jet and heats it to a plasma-forming temperature" [0024], the beam configured to maintain the plasma in an elongated forma having a plasma length that is greater than that of a plasma diameter "an elongated laser focus might be formed over a certain length of the jet, for example by means of one or more cylinder lenses (not shown) in combination with one or more spherical lenses, resulting in an elongated EUV emitting plasma" [0042] (the Oxford English Dictionary defines "elongate" as "long in relation to width" thereby establishing that an "elongated" plasma is defined by having a length greater than its width); and a tool optically coupled to the chamber for collecting light generated by the plasma "A method and an apparatus is designed to produce X-ray or EUV radiation for use in lithography, microscopy, materials science, or medical diagnostics" [Abstract].

Regarding claim 8, Hertz discloses a plasma-based light source "a plasma P emitting the desired X-ray and EUV radiation" [0033], comprising: a pressurized chamber (3) "it is necessary to provide a suitable gas atmosphere in the low-pressure chamber" [0005] configured to contain an ionized gas (Wester U.S. PGPUB No. Application/Control Number: 14/448,258 Art Unit: 2881

2004/0016894 describes how, as a plasma radiates light, as described in Hertz, "Plasma 104 radiates light as the ionized gas molecules transition from the higher energy states back to the lower energy ground state. When Xenon is used to generate plasma 104, the plasma emits light having strong line emissions with wavelengths between 13 to 14 nm" [0006], it is therefore clear that the plasma (P) of Hertz, formed using xenon [0034], necessarily becomes an ionized gas as the plasma radiates light); a laser for generating a beam of laser energy "The energy beam is preferably a beam of electromagnetic radiation, such as laser radiation, which interacts with the jet and heats it to a plasma-forming temperature" [0024]; an optical system coupled to the laser configured to maintain a plasma in an elongated form having a plasma length that is greater than that of a plasma diameter "an elongated laser focus might be formed over a certain length of the jet, for example by means of one or more cylinder lenses (not shown) in combination with one or more spherical lenses, resulting in an elongated EUV emitting plasma" [0042] (the Oxford English Dictionary defines "elongate" as "long in relation to width" thereby establishing that an "elongated" plasma is defined by having a length greater than its width); and a tool optically coupled to the chamber for collecting light generated by the plasma "A method and an apparatus is designed to produce Xray or EUV radiation for use in lithography, microscopy, materials science, or medical diagnostics" [Abstract].

Regarding claim 15, Hertz discloses a method for producing light "a plasma P emitting the desired X-ray and EUV radiation" [0033], comprising: ionizing a gas

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