PATENT
Attorney Docket No. EGQ-005CP3

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICANTS:	Smith *et. al.*	GROUP NO.:	2881
APPLICATION NO.:	13/024,027	EXAMINER:	McCormack, Jason L.
FILING DATE:	February 9, 2011	CONF. NO.:	9849
TITLE:	Laser-Driven Light Source		

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Amendment After Final Office Action

This paper is submitted under 37 CFR § 1.116 in response to the final Office Action mailed December 12, 2012 in connection with this matter. Applicants also submit herewith a Request for Continued Examination (RCE), a request for Prioritized Examination, and an extension of time. The Commissioner is hereby authorized to charge the fee for these papers, and for any other fees that may be due in connection with this matter, to Attorney Deposit Account No. 50-3081.

Applicants respectfully request entry of this paper in which:

Amendments to the Claims begin on page 2; and

Applicants' **Remarks** begin on page 6.

ASML 1012

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AMENDMENTS TO THE CLAIMS

Please amend the pending claims as follows. This listing of claims will replace all prior versions and listings of claims in the application:

Listing of the claims:

1. (currently amended) 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~~ at least substantially continuous, plasma-generated light.

2. (original) The light source of claim 1 wherein the gas comprises a noble gas.

3. (original) The light source of claim 1 wherein the gas comprises xenon.

4. (original) The light source of claim 1 wherein the excited gas comprises atoms at a lowest excited state.

5. (original) The light source of claim 1 wherein the gas is absorptive near the wavelength of the at least one laser.

6. (original) The light source of claim 1 wherein the strong absorption line of the excited gas is about 980 nm.

7. (original) The light source of claim 1 wherein the strong absorption line of the excited gas is about 882 nm.

8. (original) The light source of claim 1 wherein the excited gas is in a metastable state.

9-55. (canceled)

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56. (new) The light source of claim 1 further comprising a means for tuning the wavelength of the laser to within 10 nm away from the absorption line of the excited gas, to increase a radiance of the plasma-generated light.

57. (new) The light source of claim 1 wherein a power of the laser is about 10 or 30 or 50 or 60 or 100 or 200 watts.

58. (new) 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 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.

59. (new) The method of claim 58 wherein tuning the laser to the first and second wavelengths comprises adjusting the operating temperature of the laser.

60. (new) The method of claim 59 wherein the laser is a diode laser and the laser is tuned approximately 0.4 nm per degree Celsius of temperature adjustment.

61. (new) The method of claim 59 wherein the operating temperature of the laser can be adjusted by varying a current of a thermoelectric cooling device.

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62. (new) The method of claim 58 wherein the gas within the chamber has atoms with electrons in at least one excited atomic state.

63. (new) The method of claim 58 wherein the gas within the chamber is xenon.

64. (new) The method of claim 63 wherein the first wavelength is approximately 980 nm.

65. (new) The method of claim 63 wherein the second wavelength is approximately 975 nm.

66. (new) The method of claim 58 wherein the second wavelength is approximately 1 nm to approximately 10 nm displaced from the first wavelength.

67. (new) 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 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 positioned within a path of the at least one laser such that the laser energy is 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.

68. (new) 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

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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 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.

69. (new) The light source of claim 68 wherein the optical element is a prism.

70. (new) The light source of claim 68 wherein the optical element is a weak lens.

71. (new) The light source of claim 68 wherein the optical element is a strong lens.

72. (new) The light source of claim 68 wherein the optical element is a dichroic filter.

73. (new) The light source of claim 68 wherein the second spectrum has a greater intensity of light in the ultraviolet range than the first spectrum.

74. (new) The light source of claim 68 wherein the first spectrum has a greater intensity of light in the visible range than the second spectrum.

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