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Request for Continued Examination (RCE) Transmittal	Application Number	11/513,160
	Filing Date	August 31, 2006
	First Named Inventor	Yasuhiro OMURA
	Art Unit	2872
	Examiner Name	L. A. Fineman
	Attorney Docket Number	258882000101

Address to:
Mail Stop RCE
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

This is a Request for Continued Examination (RCE) under 37 CFR 1.114 of the above-identified application.
Request for Continued Examination (RCE) practice under 37 CFR 1.114 does not apply to any utility or plant application filed prior to June 8, 1995, or to any design application. See Instruction Sheet for RCEs (not to be submitted to the USPTO) on page 2.

1. Submission required under 37 CFR 1.114. Note: If the RCE is proper, any previously filed unentered amendments and amendments enclosed with the RCE will be entered in the order in which they were filed unless applicant instructs otherwise. If applicant does not wish to have any previously filed unentered amendment(s) entered, applicant must request non-entry of such amendment(s).

a. Previously submitted. If a final Office action is outstanding, any amendments filed after the final Office action may be considered as a submission even if this box is not checked.

 i. Consider the arguments in the Appeal Brief or Reply Brief previously filed on _____

 ii. Other _____

b. Enclosed

 i. Amendment/Reply

 ii. Affidavit(s)/Declaration(s)

 iii. Information Disclosure Statement (IDS)

 iv. Other _____

2. Miscellaneous

a. Suspension of action on the above-identified application is requested under 37 CFR 1.103(c) for a period of _____ months. (Period of suspension shall not exceed 3 months; Fee under 37 CFR 1.17(i) required)

b. Other _____

3. Fees. The RCE fee under 37 CFR 1.17(e) is required by 37 CFR 1.114 when the RCE is filed.

a. The Director is hereby authorized to charge the following fees, any underpayment of fees, or credit any Overpayments, to Deposit Account No. 03-1952.

 i. RCE fee required under 37 CFR 1.17(e)

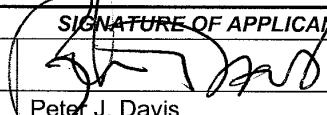
 ii. Extension of time fee (37 CFR 1.136 and 1.17)

 iii. Other _____

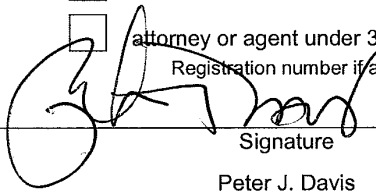
b. Check in the amount of \$ _____ enclosed

c. Payment by credit card (Form PTO-2038 enclosed)

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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT REQUIRED			
Signature			
Name (Print/Type)	Peter J. Davis	Date	August 14, 2009
		Registration No.	36,119

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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) FY 2009 <i>(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)</i>		Docket Number (Optional) 258882000101																									
Application Number 11/513,160		Filed August 31, 2006																									
For PROJECTION OPTICAL SYSTEM, EXPOSURE APPARATUS, AND EXPOSURE METHOD																											
Art Unit 2872		Examiner L. A. Fineman																									
<p>This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.</p> <p>The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):</p> <table style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 50%;"></th> <th style="text-align: center; border-bottom: 1px solid black;">Fee</th> <th style="text-align: center; border-bottom: 1px solid black;">Small Entity Fee</th> <th style="width: 10%;"></th> </tr> </thead> <tbody> <tr> <td><input type="checkbox"/> One month (37 CFR 1.17(a)(1))</td> <td style="text-align: center;">\$130</td> <td style="text-align: center;">\$65</td> <td style="text-align: center;">\$ _____</td> </tr> <tr> <td><input type="checkbox"/> Two months (37 CFR 1.17(a)(2))</td> <td style="text-align: center;">\$490</td> <td style="text-align: center;">\$245</td> <td style="text-align: center;">\$ _____</td> </tr> <tr> <td><input type="checkbox"/> Three months (37 CFR 1.17(a)(3))</td> <td style="text-align: center;">\$1110</td> <td style="text-align: center;">\$555</td> <td style="text-align: center;">\$ _____</td> </tr> <tr> <td><input type="checkbox"/> Four months (37 CFR 1.17(a)(4))</td> <td style="text-align: center;">\$1730</td> <td style="text-align: center;">\$865</td> <td style="text-align: center;">\$ _____</td> </tr> <tr> <td><input checked="" type="checkbox"/> Five months (37 CFR 1.17(a)(5))</td> <td style="text-align: center;">\$2350</td> <td style="text-align: center;">\$1175</td> <td style="text-align: center;">\$ 2,350.00</td> </tr> </tbody> </table> <p><input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27.</p> <p><input type="checkbox"/> A check in the amount of the fee is enclosed.</p> <p><input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.</p> <p><input checked="" type="checkbox"/> The Director has already been authorized to charge fees in this application to a Deposit Account.</p> <p><input checked="" type="checkbox"/> The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number <u>03-1952</u>.</p> <p>WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.</p> <p>I am the <input type="checkbox"/> applicant/inventor.</p> <p><input type="checkbox"/> assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96).</p> <p><input checked="" type="checkbox"/> attorney or agent of record. Registration Number <u>36,119</u></p> <p><input type="checkbox"/> attorney or agent under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34 _____</p> <p style="text-align: center;"> _____ Signature</p> <p style="text-align: center;">Peter J. Davis _____ Typed or printed name</p> <p style="text-align: right;">August 14, 2009 _____ Date</p> <p style="text-align: right;">(703) 760-7748 _____ Telephone Number</p> <p>NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.</p> <p><input type="checkbox"/> Total of <u>1</u> forms are submitted.</p>					Fee	Small Entity Fee		<input type="checkbox"/> One month (37 CFR 1.17(a)(1))	\$130	\$65	\$ _____	<input type="checkbox"/> Two months (37 CFR 1.17(a)(2))	\$490	\$245	\$ _____	<input type="checkbox"/> Three months (37 CFR 1.17(a)(3))	\$1110	\$555	\$ _____	<input type="checkbox"/> Four months (37 CFR 1.17(a)(4))	\$1730	\$865	\$ _____	<input checked="" type="checkbox"/> Five months (37 CFR 1.17(a)(5))	\$2350	\$1175	\$ 2,350.00
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Docket No.: 258882000101
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Yasuhiro OMURA

Application No.: 11/513,160

Confirmation No.: 3253

Filed: August 31, 2006

Art Unit: 2872

For: PROJECTION OPTICAL SYSTEM,
EXPOSURE APPARATUS, AND EXPOSURE
METHOD

Examiner: Lee A. Fineman

AMENDMENT UNDER 37 CFR 1.111

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

Dear Madam:

In response to the final Office Action dated July 14, 2008, and the Notice of Appeal dated January 14, 2009, and prior to action on the Request for Continued Examination filed concurrently herewith, applicant respectfully requests consideration of the following claim amendments and remarks.

Amendments to the Specification begin on page 2.

Amendments to the Claims begin on page 3.

Amendments to the Drawings begin on page 26.

Remarks begin on page 27.

An **Appendix** including a replacement sheet of Fig. 14, and the Declaration of Dr. Mitch Ruda is attached after the Remarks.

va-279789

AMENDMENTS

In the Specification:

Page 7, line 11, please add the following paragraphs:

An embodiment of a catadioptric projection objective for imaging a pattern provided in an object plane of the projection objective onto an image plane of the projection objective may include a first objective part for imaging the pattern provided in the object plane into a first intermediate image, a second objective part entirely composed of reflecting elements for imaging the first intermediate image into a second intermediate image, and a third objective part for imaging the second intermediate image onto the image plane. The first concave mirror has a first continuous mirror surface and at least one second concave mirror having a second continuous mirror surface is arranged upstream of the second intermediate image. Pupil surfaces are formed between the object plane and the first intermediate image, between the first and the second intermediate images and between the second intermediate image and the image plane, and the projection objective is an unobscured system having no pupil obscuration.

In some embodiments, a mirror group defined by the first and the second concave mirrors facing each other has a mirror group entry and a mirror group exit, the mirror group entry being positioned geometrically next to an edge of the second concave mirror facing an optical axis of the catadioptric projection objective and the mirror group exit being positioned geometrically next to an edge of the first concave mirror facing the optical axis and wherein some of the pupil surfaces of the projection objective are arranged in a vicinity of the mirror group entry and in a vicinity of the mirror group exit. In some embodiments, a first intermediate image is located geometrically within the intermirror space between the first concave mirror and the second concave mirror. The first intermediate image and the second intermediate image may be located geometrically within the intermirror space between the first concave mirror and the second concave mirror. In some embodiments, the projection objective may be telecentric on both an object end and an image end.

In the Claims:

1. (Currently amended) A catadioptric projection objective for imaging a pattern provided in an object plane of the projection objective onto an image plane of the projection objective comprising:

a first objective part for imaging the pattern provided in the object plane into a first intermediate image;

a second objective part entirely composed of reflecting elements for imaging the first intermediate image into a second intermediate image;

a third objective part for imaging the second intermediate image onto the image plane;

wherein a first concave mirror having a first continuous mirror surface and at least one second concave mirror having a second continuous mirror surface are arranged upstream of the second intermediate image;

pupil surfaces are formed between the object plane and the first intermediate image, between the first and the second intermediate images and between the second intermediate image and the image plane; and

~~all concave mirrors are arranged optically away from one of the pupil surfaces; and~~
wherein the projection objective is an unobscured system having no pupil obscuration.

2. (Canceled).

3. (Withdrawn) Projection objective according to claim 1, wherein there are exactly two concave mirrors and exactly two intermediate images.

4. (Withdrawn) Projection objective according to claim 1, wherein the first objective part is a dioptric imaging system;

the second objective part includes the first and the second concave mirrors, the concave mirror surfaces of the concave mirrors facing each other and defining an intermirror space;

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