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PATENT ASSIGNMENT

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
|-----------------------|----------------|
| NATURE OF CONVEYANCE: | ASSIGNMENT |

CONVEYING PARTY DATA

| Name | Execution Date |
|-----------------|----------------|
| Norihiro IWAI | 08/10/2012 |
| Hirotatsu ISHII | 08/16/2012 |

RECEIVING PARTY DATA

| Name: | FURUKAWA ELECTRIC CO., LTD. | |
|-----------------------|-------------------------------------|--|
| Street Address: | 2-3, Marunouchi 2-chome, Chiyoda-ku | |
| City: | Tokyo | |
| State/Country: | ate/Country: JAPAN | |
| Postal Code: 100-8322 | | |

PROPERTY NUMBERS Total: 1

| | Property Type | Number |
|---------------------|---------------|----------|
| Application Number: | | 13594978 |

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NAME OF SUBMITTER: Benjamin J. Hauptman

Total Attachments: 1

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PATENT

REEL: 028849 FRAME: 0908

OF \$40.00 13584878

ASSIGNMENT OF US NON PROVISIONAL APPLICATION

Attorney Docket No. 5195-01

Client Ref. JP Atty. Ref. MP120131US FD-0079US

In consideration of the sum of Ten Dollars (\$10.00) and other good and valuable consideration paid to me as an undersigned inventor, the receipt and sufficiency of which are hereby acknowledged who at the request of, hereby sells, assigns and transfers unto:

Furukawa Electric Co., Ltd. 2-3, Marunouchi 2-chome, Chiyoda-ku, Tokyo 100-8322 Japan

(hereinafter designated "ASSIGNEE") my entire right, title and interest for the United States of America as defined in 35 U.S.C. 100, in the invention and all applications including any and all divisions, continuations, substitutes, and reissues thereof; and all resulting patents, known as

INTEGRATED OPTICAL DEVICE AND MANUFACTURING METHOD OF THE SAME

for which I executed an inventor's declaration for Patent Application of the United States of America

- (A) weven date herewith
- (B) in US or International Appln. No. filed on

AND I hereby authorize and request the United States Commissioner of Patents and Trademarks to issue said Letters Patent to the said ASSIGNEE (and any other assignee, if otherwise assigned), for its interest as ASSIGNEE, its successors, assigns and legal representatives; I agree that the attorney of record in said application shall hereinafter act on behalf of said ASSIGNEE;

AND I hereby agree to testify and execute any papers for ASSIGNEE, its successors, assigns and legal representatives, deemed essential by ASSIGNEE to ASSIGNEE'S full protection and title in and to the invention hereby transferred.

I hereby authorize the US attorney of record to insert hereon any further identification necessary or desirable for recordation of this document.

| | INVENTORS 発明者サイン | DATE SIGNED 目付 | WITNESS 発明者サインを目視した人(省略可) |
|---------------|--|----------------|---------------------------|
| I): Name: | Merilia duni Norihiro IWAI | 8/10/2012 | Name: |
| 2): Name: | Hirotatsu Ishii | f/16/2012 | Name: |
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| 8): Name: | AND SOURCE OF THE SOURCE OF TH | | Name: |
| 9): Name: | | | Name: |
| 10); Name: | | | Name: |
| I1): Name: | | | Name: |
| 12): Name: | | | Name: |

PATENT REEL: 028849 FRAME: 0909

RECORDED: 08/27/2012