

PATENT ASSIGNMENT COVER SHEET

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| SUBMISSION TYPE: | NEW ASSIGNMENT |
| NATURE OF CONVEYANCE: | ASSIGNMENT |
| CONVEYING PARTY DATA | |
| Name | Execution Date |
| Vladimir Dmitriev | 10/24/2019 |
| Kujan Gorhad | 10/24/2019 |
| Joachim Welte | 10/13/2019 |
| Tanya Serzhanyuk | 11/03/2019 |
| RECEIVING PARTY DATA | |
| Name: | CARL ZEISS SMS LTD. |
| Street Address: | HADOLEV 3 |
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| State/Country: | ISRAEL |
| Postal Code: | 2015600 |
| PROPERTY NUMBERS Total: 1 | |
| Property Type | Number |
| Application Number: | 16589515 |
| CORRESPONDENCE DATA | |
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| NAME OF SUBMITTER: | CHERYL A. FORREST |
| SIGNATURE: | /Cheryl A. Forrest/ |
| DATE SIGNED: | 11/13/2019 |
| Total Attachments: 5 | |

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ASSIGNMENT

For valuable consideration, the receipt of which we acknowledge, and intending to be bound legally, we, VLADIMIR DMITRIEV, KUJAN GORHAD, JOACHIM WELTE, and TANYA SERZHANYUK, each individually assigns to CARL ZEISS SMS LTD., a corporation formed under the laws of Israel and having a principal place of business at HaDolev 3 (PO Box 32), Bar Lev Industrial Park, D.N. Migav 2015600, ISRAEL, and its successors, transferees, and assignees (collectively the "Assignee"), all of our individual and joint right, title, and interest throughout the world in the invention(s) (the "Subject Matter") described in a patent application that names us as inventors, is titled "METHOD AND APPARATUS FOR DETERMINING POSITIONS OF A PLURALITY OF PIXELS TO BE INTRODUCED IN A SUBSTRATE OF A PHOTOLITHOGRAPHIC MASK," and was filed in the United States Patent and Trademark Office on October 1, 2019, as application 16/589,515 (the "Application").

This Assignment assigns, in addition to the Subject Matter of the Application, (a) the Application and all other applications that may be made for, and all patents, utility models, design registrations, and other rights of exclusion and inventors' certificates for, any of the Subject Matter (collectively the "Applications and Granted Rights") in every country or region and under every treaty or convention, (b) the right to claim priority based on and the benefit of the filing date of any of the Applications and Granted Rights under the International Convention for the Protection of Industrial Property, the Patent Cooperation Treaty, the European Patent Convention, and all other applicable treaties or conventions, and (c) the right to pursue, collect, and retain in the Assignee's name or otherwise, damages and any other remedies arising from any past, present, or future infringement of the Subject Matter, the Applications and Granted Rights, and any other rights assigned by this Assignment.

We authorize the Assignee to apply for and pursue protection for any or all of the Subject Matter, the Applications and Granted Rights, and any other rights assigned by this Assignment in all countries, regions, and territories of the world, in our names or in the Assignee's name.

We represent and warrant that we have the right and power to make this Assignment and that we have not made and will not make any other assignment that conflicts with this Assignment.

We will communicate to the Assignee (or, at the request of the Assignee to other parties) all known facts in any form relating to the Subject Matter; will execute and provide all oaths and declarations, statements, testimony, assignments, powers of attorney, applications, and documents; and will perform all other lawful acts necessary or desirable to secure fully to the Assignee the rights, titles, and interests assigned by this Assignment.



Vladimir Dmitriev

Date: 24.10.2019

Witnessed by:

Signature: _____

Date: 24.10.2019

Print Name: Rena Tzoref Cohen

Signature: _____

Date: 24.10.2019

Print Name: Karen Abrahamson


Kujan Gornad

Date: 24.10.2019

Witnessed by:

Signature: 

Date: 24.10.2019

Print Name: Reza Darnel Cohen

Signature: 

Date: 24.10.2019

Print Name: Karen Alcabaum

Joachim Welte
Joachim Welte

Date: Oct 13, 2019

Witnessed by:

Signature:

Date:

Print Name:

Signature:

Date:

Print Name:

Tanya Serzhanyuk

Date: 3/11/2019

Witnessed by:

Signature: [Signature]

Date: 3/11/19

Print Name: Liat Pevak

Signature: [Signature]

Date: 03/11/19

Print Name: Olya Khukh

The Assignee hereby acknowledges and accepts the foregoing assignment.

Assignee: CARL ZEISS SMS LTD.

Signature: [Signature]

Date: 11/11/19

Name: _____

Title: Dr. Thomas Scheruebl

Managing Director

Carl Zeiss SMS Ltd.

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