

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT5747513

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
<b>Name</b>	<b>Execution Date</b>
RAYMUND W. M. KWOK	08/19/2019
HANI ESMAEILI	08/16/2019
ROBERT SCRITZKY	08/15/2019
MICHAEL W. BARNSTEAD	09/01/2019
XIAOQIANG HUANG	09/26/2019
IDA Y. LO	08/28/2019
SEAN R. NOVAK	09/16/2019
CHRISTOPH WERNER	09/03/2019
<b>RECEIVING PARTY DATA</b>	
<b>Name:</b>	APPLE INC.
<b>Street Address:</b>	ONE APPLE PARK WAY
<b>City:</b>	CUPERTINO
<b>State/Country:</b>	CALIFORNIA
<b>Postal Code:</b>	95014
<b>PROPERTY NUMBERS Total: 1</b>	
<b>Property Type</b>	<b>Number</b>
Application Number:	16540013
<b>CORRESPONDENCE DATA</b>	
<b>Fax Number:</b>	(415)576-0300
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
<b>Phone:</b>	415-576-0200
<b>Email:</b>	bkanter@kilpatricktownsend.com
<b>Correspondent Name:</b>	KILPATRICK TOWNSEND & STOCKTON LLP
<b>Address Line 1:</b>	1100 PEACHTREE STREET
<b>Address Line 2:</b>	SUITE 2800
<b>Address Line 4:</b>	ATLANTA, GEORGIA 30309
<b>ATTORNEY DOCKET NUMBER:</b>	090911-P37698US1-1102473
<b>NAME OF SUBMITTER:</b>	BRIAN KANTER
<b>SIGNATURE:</b>	/Brian Kanter/

PATENT

<b>DATE SIGNED:</b>	10/01/2019
---------------------	------------

**Total Attachments: 16**

- source=P37698US1 Assignment fully executed#page1.tif
- source=P37698US1 Assignment fully executed#page2.tif
- source=P37698US1 Assignment fully executed#page3.tif
- source=P37698US1 Assignment fully executed#page4.tif
- source=P37698US1 Assignment fully executed#page5.tif
- source=P37698US1 Assignment fully executed#page6.tif
- source=P37698US1 Assignment fully executed#page7.tif
- source=P37698US1 Assignment fully executed#page8.tif
- source=P37698US1 Assignment fully executed#page9.tif
- source=P37698US1 Assignment fully executed#page10.tif
- source=P37698US1 Assignment fully executed#page11.tif
- source=P37698US1 Assignment fully executed#page12.tif
- source=P37698US1 Assignment fully executed#page13.tif
- source=P37698US1 Assignment fully executed#page14.tif
- source=P37698US1 Assignment fully executed#page15.tif
- source=P37698US1 Assignment fully executed#page16.tif

**ASSIGNMENT**  
(Patent Application)

JOINT

WHEREAS, Raymond W. M. Kwok, Ham Esmaeili, Robert Scritzky, Michael W. Barnstead, Xiaoqiang Huang, Ida Y. Lo, Sean R. Novak, and Christoph Werner, hereinafter referred to as "Assignors," are the inventors of the invention described and set forth in the below-identified application for United States Letters Patent:

Title of Invention: ELECTRICAL CONTACT APPEARANCE AND PROTECTION  
Filing Date: August 13, 2019  
Application No.: 16/540,013

WHEREAS, APPLE INC., a corporation of the state of California, located at One Apple Park Way, Cupertino, California 95014, United States of America, hereinafter referred to as "ASSIGNEE," is desirous of acquiring an interest in the invention and application and in any U.S. Letters Patent and Registrations which may be granted on the same;

For good and valuable consideration, receipt of which is hereby acknowledged by Assignors, Assignors have assigned, and by these presents do assign to Assignee all right, title and interest in and to the invention and application and to all foreign counterparts (including patent, utility model and industrial designs), and in and to any Letters Patent and Registrations which may hereafter be granted on the same in the United States and all countries throughout the world, and to claim the priority from the application as provided by the Paris Convention. The right, title and interest is to be held and enjoyed by Assignee and Assignee's successors and assigns as fully and exclusively as it would have been held and enjoyed by Assignors had this Assignment not been made, for the full term of any Letters Patent and Registrations which may be granted thereon, or of any division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation or extension thereof.

Assignors further agree that they will, without charge to Assignors, but at Assignee's expense, (a) cooperate with Assignee in the prosecution of U.S. Patent applications and foreign counterparts on the invention and any improvements, (b) execute, verify, acknowledge and deliver all such further papers, including patent applications and instruments of transfer, and (c) perform such other acts as Assignee lawfully may request to obtain or maintain Letters Patent and Registrations for the invention and improvements in any and all countries, and to vest title thereto in Assignee, or Assignee's successors and assigns.

IN TESTIMONY WHEREOF, Assignors have signed their names on the dates indicated.

Signature: \_\_\_\_\_

Raymond W. M. Kwok

Date: \_\_\_\_\_

Aug 19, 2019

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Hani Esmacili

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Robert Scritzky

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Michael W. Burnstead

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Xiaoqiang Huang

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Ida Y. Lo

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Sean R. Novak

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Christoph Werner

**ASSIGNMENT**  
(Patent Application)

JOINT

WHEREAS, Raymund W. M. Kwok, Hani Esmacili, Robert Scritzky, Michael W. Barnstead, Xiaoqiang Huang, Ida Y. Lo, Sean R. Novak, and Christoph Werner, hereinafter referred to as "Assignors," are the inventors of the invention described and set forth in the below-identified application for United States Letters Patent:

Title of Invention: ELECTRICAL CONTACT APPEARANCE AND PROTECTION  
Filing Date: August 13, 2019  
Application No.: 16/540,013

WHEREAS, APPLE INC., a corporation of the state of California, located at One Apple Park Way, Cupertino, California 95014, United States of America, hereinafter referred to as "ASSIGNEE," is desirous of acquiring an interest in the invention and application and in any U.S. Letters Patent and Registrations which may be granted on the same;

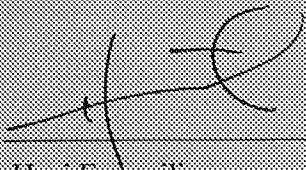
For good and valuable consideration, receipt of which is hereby acknowledged by Assignors, Assignors have assigned, and by these presents do assign to Assignee all right, title and interest in and to the invention and application and to all foreign counterparts (including patent, utility model and industrial designs), and in and to any Letters Patent and Registrations which may hereafter be granted on the same in the United States and all countries throughout the world, and to claim the priority from the application as provided by the Paris Convention. The right, title and interest is to be held and enjoyed by Assignee and Assignee's successors and assigns as fully and exclusively as it would have been held and enjoyed by Assignors had this Assignment not been made, for the full term of any Letters Patent and Registrations which may be granted thereon, or of any division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation or extension thereof.

Assignors further agree that they will, without charge to Assignors, but at Assignee's expense, (a) cooperate with Assignee in the prosecution of U.S. Patent applications and foreign counterparts on the invention and any improvements, (b) execute, verify, acknowledge and deliver all such further papers, including patent applications and instruments of transfer, and (c) perform such other acts as Assignee lawfully may request to obtain or maintain Letters Patent and Registrations for the invention and improvements in any and all countries, and to vest title thereto in Assignee, or Assignee's successors and assigns.

IN TESTIMONY WHEREOF, Assignors have signed their names on the dates indicated.

Signature: \_\_\_\_\_  
Raymund W. M. Kwok

Date: \_\_\_\_\_

Signature:  \_\_\_\_\_ Date: 8.16.19  
Hari Estmaeili

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Robert Scritzky

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Michael W. Barnstead

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Xiaoqiang Huang

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Ida Y. Lo

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Sean R. Novak

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Christoph Werner

**ASSIGNMENT**  
(Patent Application)

JOINT

WHEREAS, Raymund W. M. Kwok, Hani Esmacili, Robert Scritzky, Michael W. Barnstead, Xiaoqiang Huang, Ida Y. Lo, Sean R. Novak, and Christoph Werner, hereinafter referred to as "Assignors," are the inventors of the invention described and set forth in the below-identified application for United States Letters Patent:

Title of Invention: ELECTRICAL CONTACT APPEARANCE AND PROTECTION  
Filing Date: August 13, 2019  
Application No.: 16/540,013

WHEREAS, APPLE INC., a corporation of the state of California, located at One Apple Park Way, Cupertino, California 95014, United States of America, hereinafter referred to as "ASSIGNEE," is desirous of acquiring an interest in the invention and application and in any U.S. Letters Patent and Registrations which may be granted on the same;

For good and valuable consideration, receipt of which is hereby acknowledged by Assignors, Assignors have assigned, and by these presents do assign to Assignee all right, title and interest in and to the invention and application and to all foreign counterparts (including patent, utility model and industrial designs), and in and to any Letters Patent and Registrations which may hereafter be granted on the same in the United States and all countries throughout the world, and to claim the priority from the application as provided by the Paris Convention. The right, title and interest is to be held and enjoyed by Assignee and Assignee's successors and assigns as fully and exclusively as it would have been held and enjoyed by Assignors had this Assignment not been made, for the full term of any Letters Patent and Registrations which may be granted thereon, or of any division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation or extension thereof.

Assignors further agree that they will, without charge to Assignors, but at Assignee's expense, (a) cooperate with Assignee in the prosecution of U.S. Patent applications and foreign counterparts on the invention and any improvements, (b) execute, verify, acknowledge and deliver all such further papers, including patent applications and instruments of transfer, and (c) perform such other acts as Assignee lawfully may request to obtain or maintain Letters Patent and Registrations for the invention and improvements in any and all countries, and to vest title thereto in Assignee, or Assignee's successors and assigns.

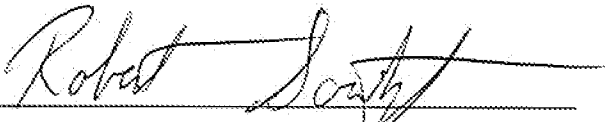
IN TESTIMONY WHEREOF, Assignors have signed their names on the dates indicated.

Signature: \_\_\_\_\_  
Raymund W. M. Kwok

Date: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Hani Esmaeili

Signature:  \_\_\_\_\_ Date: 8/15/2019

Robert Scritzky

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Michael W. Barnstead

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Xiaoqiang Huang

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Ida Y. Lo

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Sean R. Novak

Signature: \_\_\_\_\_ Date: \_\_\_\_\_

Christoph Werner



**ASSIGNMENT**  
(Patent Application)

JOINT

WHEREAS, Raymund W. M. Kwok, Hani Esmacili, Robert Scritzky, Michael W. Barnstead, Xiaoqiang Huang, Ida Y. Lo, Sean R. Novak, and Christoph Werner, hereinafter referred to as "Assignors," are the inventors of the invention described and set forth in the below-identified application for United States Letters Patent:

Title of Invention: ELECTRICAL CONTACT APPEARANCE AND PROTECTION  
Filing Date: August 13, 2019  
Application No.: 16/540,013

WHEREAS, APPLE INC., a corporation of the state of California, located at One Apple Park Way, Cupertino, California 95014, United States of America, hereinafter referred to as "ASSIGNEE," is desirous of acquiring an interest in the invention and application and in any U.S. Letters Patent and Registrations which may be granted on the same;

For good and valuable consideration, receipt of which is hereby acknowledged by Assignors, Assignors have assigned, and by these presents do assign to Assignee all right, title and interest in and to the invention and application and to all foreign counterparts (including patent, utility model and industrial designs), and in and to any Letters Patent and Registrations which may hereafter be granted on the same in the United States and all countries throughout the world, and to claim the priority from the application as provided by the Paris Convention. The right, title and interest is to be held and enjoyed by Assignee and Assignee's successors and assigns as fully and exclusively as it would have been held and enjoyed by Assignors had this Assignment not been made, for the full term of any Letters Patent and Registrations which may be granted thereon, or of any division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation or extension thereof.

Assignors further agree that they will, without charge to Assignors, but at Assignee's expense, (a) cooperate with Assignee in the prosecution of U.S. Patent applications and foreign counterparts on the invention and any improvements, (b) execute, verify, acknowledge and deliver all such further papers, including patent applications and instruments of transfer, and (c) perform such other acts as Assignee lawfully may request to obtain or maintain Letters Patent and Registrations for the invention and improvements in any and all countries, and to vest title thereto in Assignee, or Assignee's successors and assigns.

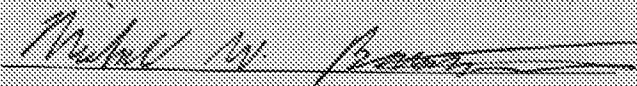
IN TESTIMONY WHEREOF, Assignors have signed their names on the dates indicated.

Signature: \_\_\_\_\_  
Raymund W. M. Kwok

Date: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Hani Esmacili

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Robert Scritzky

Signature:  \_\_\_\_\_ Date: 9-1-2019  
Michael W. Barnstead

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Xiaoqiang Huang

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Ida Y. Lo

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Sean R. Novak

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Christoph Werner

**ASSIGNMENT**  
(Patent Application)

JOINT

WHEREAS, Raymund W. M. Kwok, Hani Esmacili, Robert Scritzky, Michael W. Barnstead, Xiaoqiang Huang, Ida Y. Lo, Sean R. Novak, and Christoph Werner, hereinafter referred to as "Assignors," are the inventors of the invention described and set forth in the below-identified application for United States Letters Patent:

Title of Invention: ELECTRICAL CONTACT APPEARANCE AND PROTECTION  
Filing Date: August 13, 2019  
Application No.: 16/540,013

WHEREAS, APPLE INC., a corporation of the state of California, located at One Apple Park Way, Cupertino, California 95014, United States of America, hereinafter referred to as "ASSIGNEE," is desirous of acquiring an interest in the invention and application and in any U.S. Letters Patent and Registrations which may be granted on the same;

For good and valuable consideration, receipt of which is hereby acknowledged by Assignors, Assignors have assigned, and by these presents do assign to Assignee all right, title and interest in and to the invention and application and to all foreign counterparts (including patent, utility model and industrial designs), and in and to any Letters Patent and Registrations which may hereafter be granted on the same in the United States and all countries throughout the world, and to claim the priority from the application as provided by the Paris Convention. The right, title and interest is to be held and enjoyed by Assignee and Assignee's successors and assigns as fully and exclusively as it would have been held and enjoyed by Assignors had this Assignment not been made, for the full term of any Letters Patent and Registrations which may be granted thereon, or of any division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation or extension thereof.

Assignors further agree that they will, without charge to Assignors, but at Assignee's expense, (a) cooperate with Assignee in the prosecution of U.S. Patent applications and foreign counterparts on the invention and any improvements, (b) execute, verify, acknowledge and deliver all such further papers, including patent applications and instruments of transfer, and (c) perform such other acts as Assignee lawfully may request to obtain or maintain Letters Patent and Registrations for the invention and improvements in any and all countries, and to vest title thereto in Assignee, or Assignee's successors and assigns.

IN TESTIMONY WHEREOF, Assignors have signed their names on the dates indicated.

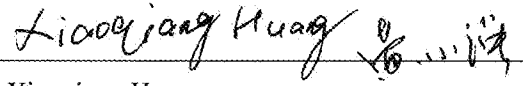
Signature: \_\_\_\_\_  
Raymund W. M. Kwok

Date: \_\_\_\_\_

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Hani Esmaeili

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Robert Scritzky

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Michael W. Barnstead

Signature: Xiaoqiang Huang  Date: 2019-09-26

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Ida Y. Lo

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Sean R. Novak

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Christoph Werner

**ASSIGNMENT**  
(Patent Application)

JOINT

WHEREAS, Raymund W. M. Kwok, Hani Esmaeili, Robert Scritzky, Michael W. Barnstead, Xiaoqiang Huang, Ida Y. Lo, Sean R. Novak, and Christoph Werner, hereinafter referred to as "Assignors," are the inventors of the invention described and set forth in the below-identified application for United States Letters Patent:

Title of Invention: ELECTRICAL CONTACT APPEARANCE AND PROTECTION

Filing Date: August 13, 2019

Application No.: 16/540,013

WHEREAS, APPLE INC., a corporation of the state of California, located at One Apple Park Way, Cupertino, California 95014, United States of America, hereinafter referred to as "ASSIGNEE," is desirous of acquiring an interest in the invention and application and in any U.S. Letters Patent and Registrations which may be granted on the same;

For good and valuable consideration, receipt of which is hereby acknowledged by Assignors, Assignors have assigned, and by these presents do assign to Assignee all right, title and interest in and to the invention and application and to all foreign counterparts (including patent, utility model and industrial designs), and in and to any Letters Patent and Registrations which may hereafter be granted on the same in the United States and all countries throughout the world, and to claim the priority from the application as provided by the Paris Convention. The right, title and interest is to be held and enjoyed by Assignee and Assignee's successors and assigns as fully and exclusively as it would have been held and enjoyed by Assignors had this Assignment not been made, for the full term of any Letters Patent and Registrations which may be granted thereon, or of any division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation or extension thereof.

Assignors further agree that they will, without charge to Assignors, but at Assignee's expense, (a) cooperate with Assignee in the prosecution of U.S. Patent applications and foreign counterparts on the invention and any improvements, (b) execute, verify, acknowledge and deliver all such further papers, including patent applications and instruments of transfer, and (c) perform such other acts as Assignee lawfully may request to obtain or maintain Letters Patent and Registrations for the invention and improvements in any and all countries, and to vest title thereto in Assignee, or Assignee's successors and assigns.

IN TESTIMONY WHEREOF, Assignors have signed their names on the dates indicated.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Raymund W. M. Kwok

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Hani Esmaeili

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Robert Scritzky

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Michael W. Barnstead

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Xiaoqiang Huang

Signature:  \_\_\_\_\_ Date: 8/28/2019  
Ida Y. Lo

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Sean R. Novak

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Christoph Werner

**ASSIGNMENT**  
(Patent Application)

JOINT

WHEREAS, Raymund W. M. Kwok, Hani Esmacili, Robert Scritzky, Michael W. Barnstead, Xiaoqiang Huang, Ida Y. Lo, Sean R. Novak, and Christoph Werner, hereinafter referred to as "Assignors," are the inventors of the invention described and set forth in the below-identified application for United States Letters Patent:

Title of Invention: ELECTRICAL CONTACT APPEARANCE AND PROTECTION  
Filing Date: August 13, 2019  
Application No.: 16/540,013

WHEREAS, APPLE INC., a corporation of the state of California, located at One Apple Park Way, Cupertino, California 95014, United States of America, hereinafter referred to as "ASSIGNEE," is desirous of acquiring an interest in the invention and application and in any U.S. Letters Patent and Registrations which may be granted on the same;

For good and valuable consideration, receipt of which is hereby acknowledged by Assignors, Assignors have assigned, and by these presents do assign to Assignee all right, title and interest in and to the invention and application and to all foreign counterparts (including patent, utility model and industrial designs), and in and to any Letters Patent and Registrations which may hereafter be granted on the same in the United States and all countries throughout the world, and to claim the priority from the application as provided by the Paris Convention. The right, title and interest is to be held and enjoyed by Assignee and Assignee's successors and assigns as fully and exclusively as it would have been held and enjoyed by Assignors had this Assignment not been made, for the full term of any Letters Patent and Registrations which may be granted thereon, or of any division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation or extension thereof.

Assignors further agree that they will, without charge to Assignors, but at Assignee's expense, (a) cooperate with Assignee in the prosecution of U.S. Patent applications and foreign counterparts on the invention and any improvements, (b) execute, verify, acknowledge and deliver all such further papers, including patent applications and instruments of transfer, and (c) perform such other acts as Assignee lawfully may request to obtain or maintain Letters Patent and Registrations for the invention and improvements in any and all countries, and to vest title thereto in Assignee, or Assignee's successors and assigns.

IN TESTIMONY WHEREOF, Assignors have signed their names on the dates indicated.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Raymund W. M. Kwok

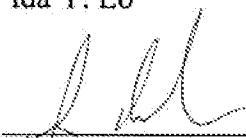
Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Hani Esmaeili

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Robert Scritzky

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Michael W. Barnstead

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Xiaoqiang Huang

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Ida Y. Lo

Signature:  \_\_\_\_\_ Date: September 16, 2019  
Sean R. Novak

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Christoph Werner



**ASSIGNMENT**  
(Patent Application)

JOINT

WHEREAS, Raymund W. M. Kwok, Hani Esmacili, Robert Scritzky, Michael W. Barnstead, Xiaoqiang Huang, Ida Y. Lo, Sean R. Novak, and Christoph Werner, hereinafter referred to as "Assignors," are the inventors of the invention described and set forth in the below-identified application for United States Letters Patent:

Title of Invention: ELECTRICAL CONTACT APPEARANCE AND PROTECTION  
Filing Date: August 13, 2019  
Application No.: 16/540,013

WHEREAS, APPLE INC., a corporation of the state of California, located at One Apple Park Way, Cupertino, California 95014, United States of America, hereinafter referred to as "ASSIGNEE," is desirous of acquiring an interest in the invention and application and in any U.S. Letters Patent and Registrations which may be granted on the same;

For good and valuable consideration, receipt of which is hereby acknowledged by Assignors, Assignors have assigned, and by these presents do assign to Assignee all right, title and interest in and to the invention and application and to all foreign counterparts (including patent, utility model and industrial designs), and in and to any Letters Patent and Registrations which may hereafter be granted on the same in the United States and all countries throughout the world, and to claim the priority from the application as provided by the Paris Convention. The right, title and interest is to be held and enjoyed by Assignee and Assignee's successors and assigns as fully and exclusively as it would have been held and enjoyed by Assignors had this Assignment not been made, for the full term of any Letters Patent and Registrations which may be granted thereon, or of any division, renewal, continuation in whole or in part, substitution, conversion, reissue, prolongation or extension thereof.

Assignors further agree that they will, without charge to Assignors, but at Assignee's expense, (a) cooperate with Assignee in the prosecution of U.S. Patent applications and foreign counterparts on the invention and any improvements, (b) execute, verify, acknowledge and deliver all such further papers, including patent applications and instruments of transfer, and (c) perform such other acts as Assignee lawfully may request to obtain or maintain Letters Patent and Registrations for the invention and improvements in any and all countries, and to vest title thereto in Assignee, or Assignee's successors and assigns.

IN TESTIMONY WHEREOF, Assignors have signed their names on the dates indicated.

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Raymund W. M. Kwok

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Hani Esmacili

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Robert Scritzky

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Michael W. Barnstead

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Xiaoqiang Huang

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Ida Y. Lo

Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
Sean R. Novak

Signature: Dr. Christoph Werner \_\_\_\_\_ Date: 09-03-19  
Christoph Werner