

## PATENT ASSIGNMENT COVER SHEET

Electronic Version v1.1  
 Stylesheet Version v1.2

EPAS ID: PAT6903365

<b>SUBMISSION TYPE:</b>	NEW ASSIGNMENT
<b>NATURE OF CONVEYANCE:</b>	ASSIGNMENT

**CONVEYING PARTY DATA**

Name	Execution Date
BRIAN E. BROOKS	03/12/2020
GILLES J. BENOIT	06/10/2020
PETER O. OLSON	03/12/2020
TYLER W. OLSON	03/12/2020
HIMANSHU NAYAR	06/11/2020
FREDERICK J. ARSENAULT	03/12/2020
NICHOLAS A. JOHNSON	06/15/2020
BRETT R. HEMES	06/17/2020
THOMAS J. STREY	03/12/2020
JONATHAN B. ARTHUR	06/10/2020
NATHAN J. HERBST	06/11/2020
AARON K. NIENABER	03/17/2020
SARAH M. MULLINS	03/12/2020
MARK W. ORLANDO	03/13/2020
CORY D. SAUER	03/23/2020
TIMOTHY J. CLEMENS	03/13/2020
SCOTT L. BARNETT	03/13/2020
ZACHARY M. SCHAEFFER	03/12/2020
PATRICK G. ZIMMERMAN	03/18/2020
GREGORY P. MORIARTY	03/12/2020
JEFFREY P. ADOLF	03/19/2020
STEVEN P. FLOEDER	03/20/2020
ANDREAS BACKES	03/18/2020
PETER J. SCHNEIDER	03/18/2020
MAUREEN A. KAVANAGH	07/27/2020
GLENN E. CASNER	03/24/2020
MIAODING DAI	03/17/2020
CHRISTOPHER M. BROWN	03/17/2020
LORI A. SJOLUND	03/17/2020
JON A. KIRSCHHOFFER	03/25/2020
CARTER C. HUGHES	03/17/2020

**PATENT**

**RECEIVING PARTY DATA**

<b>Name:</b>	3M INNOVATIVE PROPERTIES COMPANY
<b>Street Address:</b>	P.O. BOX 33427
<b>City:</b>	SAINT PAUL
<b>State/Country:</b>	MINNESOTA
<b>Postal Code:</b>	55133-3427

**PROPERTY NUMBERS Total: 1**

Property Type	Number
<b>Application Number:</b>	17436886

**CORRESPONDENCE DATA**

**Fax Number:** (651)736-3833

*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.*

**Phone:** 651-733-1500

**Email:** pjbick@mmm.com

**Correspondent Name:** 3M INNOVATIVE PROPERTIES COMPANY

**Address Line 1:** P.O. BOX 33427

**Address Line 4:** SAINT PAUL, MINNESOTA 55133-3427

<b>ATTORNEY DOCKET NUMBER:</b>	82435US004
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<b>NAME OF SUBMITTER:</b>	PAULA J. BICK
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<b>SIGNATURE:</b>	/Paula J. Bick/
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<b>DATE SIGNED:</b>	09/07/2021
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	This document serves as an Oath/Declaration (37 CFR 1.63).
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**Total Attachments: 31**

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**DECLARATION AND ASSIGNMENT,  
FOR UTILITY OR DESIGN  
PATENT APPLICATION (37 CFR § 1.63)**

Case No:

82435US

As a below named inventor, I believe I am an original inventor or an original joint inventor of a claimed invention in the application and for which a patent is sought on the invention entitled:

**Manufacturing a Product Using Causal Models**

The specification of which:

☐ is attached hereto;

☐ was filed on \_\_\_\_\_  
as United States Application No. \_\_\_\_\_

☒ is identified as PCT International Application No. \_\_\_\_\_  
filed on **October 3, 2019**

**PCT/IB2019/058428**

The above-identified application was made or authorized to be made by me.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than 5 years, or both.

In addition, for good and valuable consideration, receipt of which is acknowledged, I have agreed to assign and transfer and do hereby assign and transfer unto the 3M INNOVATIVE PROPERTIES COMPANY, a wholly-owned subsidiary of 3M COMPANY, and a corporation of Delaware, having its principal office at Saint Paul, Minnesota, its successors and assigns, the entire right, title, and interest in and to the said invention and application, and in and to any division or continuation (in whole or in part) of said application, and in and to any and all improvements in the said invention made by me or made jointly with others (provided any such improvement is made during, or within one year after the termination of, my employment with 3M COMPANY and any of its existing or future subsidiaries), and in and to any and all Letters Patent, reexaminations, reissues, or extensions thereof, of the United States of America and countries foreign thereto (including the right to apply for Letters Patent, Utility Models, or Inventors' Certificates in foreign countries in its own name and to claim any priority rights for such foreign applications to which such applications are entitled under international conventions, treaties, or otherwise), which have been or may be granted thereon or on any divisional, continuation (in whole or in part), renewal, reexamination, reissue, or other or further application based in whole or in part upon the said invention or improvements thereon, to be held and enjoyed as fully and exclusively as they would have been by me had this assignment and transfer not been made;

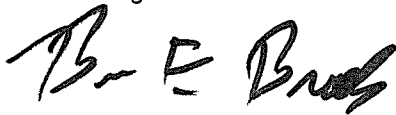
I do further agree for myself and for my heirs, executors, and administrators, to execute and deliver without further consideration any further applications, assignments, and documents, and to perform such other acts as I lawfully may, that may be deemed necessary by said Company, its successors, assigns, and nominees, fully to secure its right, title, and interest as aforesaid and to obtain or maintain Letters Patent, Utility Models, or Inventors' Certificates in any and all countries; and

I do hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of the said applications, to said 3M Innovative Properties Company, as the assignee of the entire right, title, and interest therein.

Legal Name of Inventor:

**Brian E. Brooks**

Inventor's Signature:



Date:

3/12/2020

<b>DECLARATION AND ASSIGNMENT, FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR § 1.63)</b>	Case No:	82435US
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I do further agree for myself and for my heirs, executors, and administrators, to execute and deliver without further consideration any further applications, assignments, and documents, and to perform such other acts as I lawfully may, that may be deemed necessary by said Company, its successors, assigns, and nominees, fully to secure its right, title, and interest as aforesaid and to obtain or maintain Letters Patent, Utility Models, or Inventors' Certificates in any and all countries; and

I do hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of the said applications, to said 3M Innovative Properties Company, as the assignee of the entire right, title, and interest therein.

Legal Name of Inventor: <b>Gilles J. Benoit</b>	
Inventor's Signature: 	Date: <b>6-10-2020</b>

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I do hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of the said applications, to said 3M Innovative Properties Company, as the assignee of the entire right, title, and interest therein.

Legal Name of Inventor:

**Peter O. Olson**

Inventor's Signature:



Date:

**3/12/2020**

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Legal Name of Inventor:

**Tyler W. Olson**

Inventor's Signature:



Date:

**3/12/20**

<b>DECLARATION AND ASSIGNMENT, FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR § 1.63)</b>	Case No:	82435US
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<input type="checkbox"/> is attached hereto;	
<input type="checkbox"/> was filed on _____ as United States Application No. _____	
<input checked="" type="checkbox"/> is identified as PCT International Application No. _____ filed on <b>October 3, 2019</b>	<b>PCT/IB2019/058428</b>

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Legal Name of Inventor: <b>Himanshu Nayar</b>	
Inventor's Signature: /Himanshu Nayar/	Date: 6/11/2020



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Legal Name of Inventor:

**Frederick J. Arsenault**

Inventor's Signature:



Date:

3-12-2020

<b>DECLARATION AND ASSIGNMENT, FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR § 1.63)</b>	Case No:	82435US
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Legal Name of Inventor: <b>Nicholas A. Johnson</b>	
Inventor's Signature: 	Date:  6/15/2020

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Legal Name of Inventor:

**Brett R. Hemes**

Inventor's Signature:



Date:

06/14/2020

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**October 3, 2019**

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I do further agree for myself and for my heirs, executors, and administrators, to execute and deliver without further consideration any further applications, assignments, and documents, and to perform such other acts as I lawfully may, that may be deemed necessary by said Company, its successors, assigns, and nominees, fully to secure its right, title, and interest as aforesaid and to obtain or maintain Letters Patent, Utility Models, or Inventors' Certificates in any and all countries; and

I do hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of the said applications, to said 3M Innovative Properties Company, as the assignee of the entire right, title, and interest therein.

Legal Name of Inventor:

**Thomas J. Strey**

Inventor's Signature:



Date:

3/12/20

<b>DECLARATION AND ASSIGNMENT, FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR § 1.63)</b>	Case No:	82435US
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As a below named inventor, I believe I am an original inventor or an original joint inventor of a claimed invention in the application and for which a patent is sought on the invention entitled:

<b>Manufacturing a Product Using Causal Models</b>
--

The specification of which:

☐ is attached hereto;

☐ United States  
Application No.

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was filed on as

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☒ is identified as  
PCT International  
Application No.  
filed on

<b>October 3, 2019</b>
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Legal Name of Inventor: <b>Jonathan B. Arthur</b>	
Inventor's Signature: /Jonathan Bement Arthur/	Date: 06/10/20

**DECLARATION AND ASSIGNMENT,  
FOR UTILITY OR DESIGN  
PATENT APPLICATION (37 CFR § 1.63)**

Case No:

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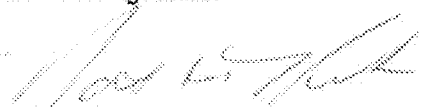
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Legal Name of Inventor:

**Nathan J. Herbst**

Inventor's Signature:

Date:



*June 11, 2020*

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Legal Name of Inventor: <b>Aaron K. Nienaber</b>	
Inventor's Signature: 	Date: <b>3/17/2020</b>

DECLARATION AND ASSIGNMENT,  
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PATENT APPLICATION (37 CFR § 1.63)

Case No:

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Legal Name of Inventor:

**Sarah M. Mullins**

Inventor's Signature:

*Sarah Mullins*

Date:

*March 12, 2020*



DECLARATION AND ASSIGNMENT, FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR § 1.63)	Case No:	82435US
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Legal Name of Inventor: <b>Mark W. Orlando</b>	
Inventor's Signature: 	Date: <b>3/13/2020</b>

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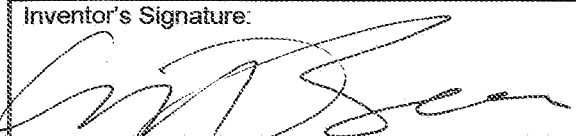
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Legal Name of Inventor: <b>Cory D. Sauer</b>	
Inventor's Signature: 	Date: <i>March 23, 2020.</i>

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Legal Name of Inventor: <b>Timothy J. Clemens</b>	
Inventor's Signature: 	Date: <b>3/13/2020</b>

DECLARATION AND ASSIGNMENT, FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR § 1.63)	Case No:	82435US
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Legal Name of Inventor: <b>Scott L. Barnett</b>	
Inventor's Signature: 	Date: <b>MAR 13, 2020</b>

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Legal Name of Inventor: <b>Zachary M. Schaeffer</b>	
Inventor's Signature: 	Date: 3/12/20

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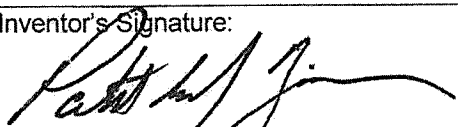
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I do hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of the said applications, to said 3M Innovative Properties Company, as the assignee of the entire right, title, and interest therein.

Legal Name of Inventor: <b>Patrick G. Zimmerman</b>	
Inventor's Signature: 	Date: <b>03/18/2020</b>

**DECLARATION AND ASSIGNMENT,  
FOR UTILITY OR DESIGN  
PATENT APPLICATION (37 CFR § 1.63)**

Case No:

82435US

As a below named inventor, I believe I am an original inventor or an original joint inventor of a claimed invention in the application and for which a patent is sought on the invention entitled:

**Manufacturing a Product Using Causal Models**

The specification of which:

☐ is attached hereto;

☐ was filed on \_\_\_\_\_  
as United States Application No. \_\_\_\_\_

☒ is identified as PCT International Application No. \_\_\_\_\_  
filed on **October 3, 2019**

**PCT/IB2019/058428**

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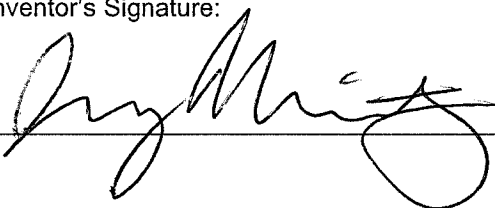
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Legal Name of Inventor:

**Gregory P. Moriarty**

Inventor's Signature:



Date:

03/12/2020

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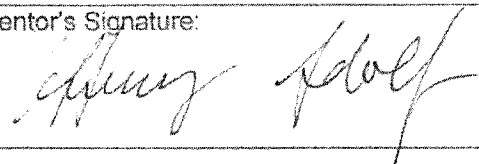
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Legal Name of Inventor:

**Jeffrey P. Adolf**

Inventor's Signature:



Date:

3/19/2020

**PATENT**

**REEL: 057435 FRAME: 0855**



DECLARATION AND ASSIGNMENT, FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR § 1.63)	Case No:	82435US
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Legal Name of Inventor: <b>Steven P. Floeder</b>	
Inventor's Signature: 	Date: <b>20 March 2020</b>

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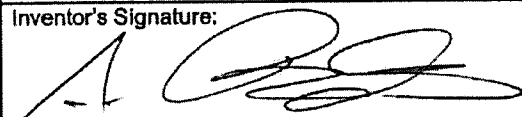
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Legal Name of Inventor: <b>Andreas Backes</b>	
Inventor's Signature: 	Date: <b>18.03.2020</b>

DECLARATION AND ASSIGNMENT, FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR § 1.63)	Case No:	82435US
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Legal Name of Inventor: <b>Peter J. Schneider</b>	
Inventor's Signature: 	Date: <b>March 18, 2020</b>

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Legal Name of Inventor:

**Maureen A. Kavanagh**

Inventor's Signature:

*Maureen A Kavanagh*

Date:

*7/27/2020*

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Case No.

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Legal Name of Inventor:

**Glenn E. Casner**

Inventor's Signature:

*Glenn E. Casner*

Date:

*3/24/2020*

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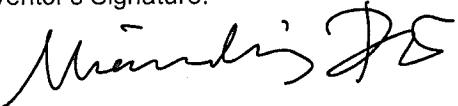
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Legal Name of Inventor: <b>Miaoding Dai</b>	
Inventor's Signature: 	Date: <b>Mar 17, 2020</b>

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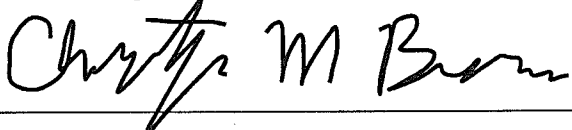
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Legal Name of Inventor: <b>Christopher M. Brown</b>	
Inventor's Signature: 	Date: <b>3-17-20</b>

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filed on **October 3, 2019**

**PCT/IB2019/058428**


The above-identified application was made or authorized to be made by me.

I hereby acknowledge that any willful false statement made in this declaration is punishable under 18 U.S.C. 1001 by fine or imprisonment of not more than 5 years, or both.

In addition, for good and valuable consideration, receipt of which is acknowledged, I have agreed to assign and transfer and do hereby assign and transfer unto the 3M INNOVATIVE PROPERTIES COMPANY, a wholly-owned subsidiary of 3M COMPANY, and a corporation of Delaware, having its principal office at Saint Paul, Minnesota, its successors and assigns, the entire right, title, and interest in and to the said invention and application, and in and to any division or continuation (in whole or in part) of said application, and in and to any and all improvements in the said invention made by me or made jointly with others (provided any such improvement is made during, or within one year after the termination of, my employment with 3M COMPANY and any of its existing or future subsidiaries), and in and to any and all Letters Patent, reexaminations, reissues, or extensions thereof, of the United States of America and countries foreign thereto (including the right to apply for Letters Patent, Utility Models, or Inventors' Certificates in foreign countries in its own name and to claim any priority rights for such foreign applications to which such applications are entitled under international conventions, treaties, or otherwise), which have been or may be granted thereon or on any divisional, continuation (in whole or in part), renewal, reexamination, reissue, or other or further application based in whole or in part upon the said invention or improvements thereon, to be held and enjoyed as fully and exclusively as they would have been by me had this assignment and transfer not been made;

I do further agree for myself and for my heirs, executors, and administrators, to execute and deliver without further consideration any further applications, assignments, and documents, and to perform such other acts as I lawfully may, that may be deemed necessary by said Company, its successors, assigns, and nominees, fully to secure its right, title, and interest as aforesaid and to obtain or maintain Letters Patent, Utility Models, or Inventors' Certificates in any and all countries; and

I do hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of the said applications, to said 3M Innovative Properties Company, as the assignee of the entire right, title, and interest therein.

Legal Name of Inventor: <b>Lori A. Sjolund</b>	
Inventor's Signature: 	Date: <b>03/17/20</b>



<b>DECLARATION AND ASSIGNMENT, FOR UTILITY OR DESIGN PATENT APPLICATION (37 CFR § 1.63)</b>	Case No:	82435US
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As a below named inventor, I believe I am an original inventor or an original joint inventor of a claimed invention in the application and for which a patent is sought on the invention entitled:

**Manufacturing a Product Using Causal Models**

The specification of which:

☐ is attached hereto;

☐ was filed on \_\_\_\_\_  
as United States Application No. \_\_\_\_\_

☒ is identified as PCT International Application No. \_\_\_\_\_  
filed on **October 3, 2019**

**PCT/IB2019/058428**

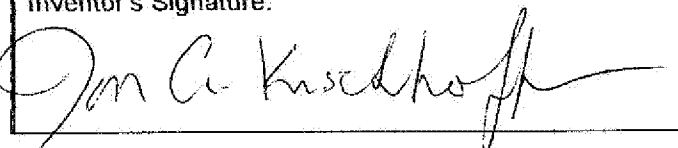
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I do hereby authorize and request the Commissioner of Patents to issue any and all Letters Patent which may be granted upon any of the said applications, to said 3M Innovative Properties Company, as the assignee of the entire right, title, and interest therein.

Legal Name of Inventor: <b>Jon A. Kirschhoffer</b>	
Inventor's Signature: 	Date: <b>3/25/20</b>

<b>DECLARATION AND ASSIGNMENT, FOR UTILITY OR DESIGN PATENT APPLICATION (37.CFR § 1.63)</b>	Case No:	82435US
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Legal Name of Inventor: <b>Carter C. Hughes</b>	
Inventor's Signature: 	Date: <b>3/17/2020</b>