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Application Number: 15913669

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	50WF-263215
		Application Number	
Title of Invention	METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

Secrecy Order 37 CFR 5.2:

☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor	1					Remove	
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	JIAN		WANG				
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City	MENLO PARK	State/Province	CA	Country of Residence	US		
Mailing Address of Inventor:							
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Address 2							
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Postal Code	94025	Country	US				
Inventor	2					Remove	
Legal Name							
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	50WF-263215
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Application Information:

Title of the Invention	METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM		
Attorney Docket Number	50WF-263215	Small Entity Status Claimed	☒
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)		Suggested Figure for Publication (if any)	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not be** the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

Representative information should be provided for all practitioners having a power of attorney in the application. Providing this information in the Application Data Sheet does not constitute a power of attorney in the application (see 37 CFR 1.32). Either enter Customer Number or complete the Representative Name section below. If both sections are completed the customer Number will be used for the Representative Information during processing.

Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	50WF-263215
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Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

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Prior Application Status		Remove
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Foreign Priority Information:

This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)
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Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

☐ This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013.

NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	50WF-263215
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Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	50WF-263215
		Application Number	
Title of Invention	METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.			
Applicant	1	Remove	
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section.			
		Clear	
☐ Assignee	Legal Representative under 35 U.S.C. 117		Joint Inventor
Person to whom the inventor is obligated to assign.		Person who shows sufficient proprietary interest	
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor:			
If the Applicant is an Organization check here. ☒			
Organization Name	FURCIFER INC.		
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Assignee 1				
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.				
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Signature:

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This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	Weiguo Chen/		Date (YYYY-MM-DD)	2018-03-06
First Name	Weiguo	Last Name	Chen	Registration Number
				61878
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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	50WF-263215
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This collection of information is required by 37 CFR 1.76. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 23 minutes to complete, including gathering, preparing, and submitting the completed application data sheet form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
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METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM

TECHNICAL FIELD

[0001] The present disclosure relates generally to electrochromic films, and in particular, to methods for changing states of electrochromic films.

BACKGROUND

[0002] Electrochromism is a phenomenon displayed by some materials of reversibly changing optical properties by using bursts of charges to cause electrochemical redox (reduction and oxidation) reactions in electrochromic materials. The optical properties may include transmittance, reflectance, absorptance and emittance. In particular, electrochromic materials exhibit a reversible color changes. The optical state of an electrochromic material depends on the amount of charge injected or extracted. The optical state of an electrochromic film may refer to lightness, transparency, color, reflectance, etc. The electrochromic film's optical state could be set at any state by controlling the amount of charges. In an application of smart windows, electrochromic films are integrated with the glass window to become serviceable. Electric controller are used to control the electrochromic films integrated with glass windows (i.e., smart windows).

[0003] In this disclosure, we propose different methods for changing optical states of electrochromic materials.

SUMMARY

[0004] One aspect of the present disclosure is directed to a method of changing an optical state of an electrochromic film. The electrochromic film may have a plurality of optical states. The method may include selecting a desired state of the plurality of optical states; injecting electric charges into the electrochromic film; monitoring an amount of the electric charges injected into the electrochromic film; and stopping injecting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state.

[0005] Another aspect of the present disclosure is directed to another method of changing an optical state of an electrochromic film. The electrochromic film may have a

plurality of optical states. The method may include selecting a desired state of the plurality of optical states; extracting electric charges from the electrochromic film; monitoring an amount of the electric charges extracted from the electrochromic film; and stopping extracting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state.

[0006] Another aspect of the present disclosure is directed to another method of changing an optical state of an electrochromic film. The method may include setting a plurality of pre-determined optical states of the electrochromic film; determining an amount of electric charges corresponding to each of the plurality of pre-determined optical states; selecting a desired state of the plurality of pre-determined optical states; and adjusting an amount of electric charges within the electrochromic film to the determined amount of electric charges corresponding to the selected desired state.

[0007] Other objects, features and advantages of the described embodiments will become apparent to those skilled in the art from the following detailed description. It is to be understood, however, that the detailed description and specific examples, while indicating preferred embodiments of the present invention, are given by way of illustration and not limitation. Many changes and modifications within the scope of the present invention may be made without departing from the spirit thereof, and the invention includes all such modifications.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] Preferred and non-limiting embodiments of the invention may be more readily understood by referring to the accompanying drawings in which:

[0009] FIG. 1 is a graphical presentation illustrating a simplified schematic of an electrochromic device, consistent with exemplary embodiments of the present disclosure.

[0010] FIG. 2 is a sectional view of a simplified schematic of an electrochromic device comprising a solid polymer electrolyte therein, consistent with exemplary embodiments of the present disclosure.

[0011] FIG. 3 is a graphical presentation illustrating a controller, consistent with exemplary embodiments of the present disclosure.

[0012] FIG. 4 is a graph illustrating a response of an exemplary electrochromic film changing from a dark state to a clear state under a constant voltage, consistent with exemplary embodiments of the present disclosure.

[0013] FIG. 5 is a graph illustrating dependence of transmission of an exemplary electrochromic film on the amount of injected charges under a constant voltage, consistent with exemplary embodiments of the present disclosure.

[0014] FIG. 6 is a graph illustrating a response of an exemplary electrochromic film changing from a clear state to a dark state under a constant voltage, consistent with exemplary embodiments of the present disclosure.

[0015] FIG. 7 is a graph illustrating dependence of transmission of an exemplary electrochromic film on the amount of extracted charges under a constant voltage, consistent with exemplary embodiments of the present disclosure.

[0016] FIG. 8 is a graph illustrating a response of an exemplary electrochromic film changing from a dark state to a clear state under a constant current, consistent with exemplary embodiments of the present disclosure.

[0017] FIG. 9 is a graph illustrating dependence of transmission of an exemplary electrochromic film on the amount of injected charges under a constant current, consistent with exemplary embodiments of the present disclosure.

[0018] FIG. 10 is a graph illustrating a response of an exemplary electrochromic film changing from a clear state to a dark state under a constant current, consistent with exemplary embodiments of the present disclosure.

[0019] FIG. 11 is a graph illustrating dependence of transmission of an exemplary electrochromic film on the amount of extracted charges under a constant current, consistent with exemplary embodiments of the present disclosure.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0020] Specific, non-limiting embodiments of the present invention will now be described with reference to the drawings. It should be understood that particular features and aspects of any embodiment disclosed herein may be used and/or combined with particular features and aspects of any other embodiment disclosed herein. It should also be understood that such embodiments are by way of example and are merely illustrative of but a small number of embodiments within the scope of the present invention. Various

changes and modifications obvious to one skilled in the art to which the present invention pertains are deemed to be within the spirit, scope and contemplation of the present invention as further defined in the appended claims.

[0021] Unless the context requires otherwise, throughout the present specification and claims, the word “comprise” and variations thereof, such as, “comprises” and “comprising” are to be construed in an open, inclusive sense, that is as “including, but not limited to”. Numeric ranges are also inclusive of the numbers defining the range. Additionally, the singular forms “a”, “an” and “the” include plural referents unless the context clearly dictates otherwise.

[0022] Reference throughout this specification to “one embodiment” or “an embodiment” means that a particular feature, structure or characteristic described in connection with the embodiment is included in at least one embodiment of the present invention. Thus, the appearances of the phrases “in one embodiment” or “in an embodiment” in various places throughout this specification are not necessarily all referring to the same embodiment, but may be in some instances. Furthermore, the particular features, structures, or characteristics may be combined in any suitable manner in one or more embodiments.

[0023] Electrochromic materials are commonly used in electrochromic devices. FIG. 1 is a graphical illustration showing a simplified schematic of an electrochromic device 100 (e.g., a smart window), consistent with exemplary embodiments of the present disclosure. The electrochromic device 101 may include two layers of glass 101, two adhesive layers 102, an electrochromic film 103, one or more electric wires 104, and a controller 105 (as shown in FIG. 3).

[0024] The electrochromic film 103 is sandwiched between the two layers of glass 101. The adhesive layers 102 are configured to attached the electrochromic film 103 to the layers of glass 101. The integration of the electrochromic film 103 with the window (layers of glass 101) is described in details in Patent Application US 15/399,852, which is incorporated herein by reference.

[0025] One end 104a of the electric wires 104 is electrically connected to the electrochromic film 103. The other end 104b of the electric wires 104 is electrically

connected to the controller 105. The controller 105 may be configured to control the state of the electrochromic device 100 by controlling the states of the electrochromic film 103. The controller 105 may be placed outside the glass 101, or laminated between the two layers of glass 101 similar to the electrochromic film 103.

[0026] In some embodiments, the adhesive layers 102 may include a polymeric material, particularly a thermosetting polymer material. Suitable thermoset polymer materials may include, but are not limited to, polyvinyl butyral (PVB), ethylene-vinyl acetate (EVA), polyurethanes, etc. In some embodiments, the two adhesive layers may comprise a material that not only is configured to bond the electrochromic film thereto, but is also transparent. The two adhesive layers may use the same materials or different materials.

[0027] The electrochromic film 103 comprises a solid electrolyte disposed therein, according to one embodiment. The detailed structure of the electronic film 103 is shown in FIG. 2 and described in detail below.

[0028] The exemplary electrochromic device 100 shown in FIG. 1 can be the electrochromic devices described in the specification and shown in the other figures.

[0029] As shown in FIG. 2, the electrochromic film 103 may include a first transparent electrically conductive film 1312 and a second transparent electrically conductive film 1310. The first and second electrically conductive films 1312, 1310 may have the same or different dimensions, comprise the same or different material, etc. In some embodiments, the first and second transparent electrically conductive films may be adhesive films as shown in FIG. 1. In some other embodiments, the first and second transparent electrically conductive films may be additional films. The first and second electrically conductive films 1312, 1310 may also each independently have a single layer or multilayer structure. Suitable material for the first and second electrically conductive films 1312, 1310 may include, but is not limited to, tin doped indium oxide (ITO), fluorine doped indium oxide, antimony doped indium oxide, zinc doped indium oxide, aluminum doped zinc oxide, silver nano wire, metal mesh, combinations thereof, and/or other such transparent material exhibiting sufficient electrical conductance. In preferred aspects, the first and second electrically conductive films 1312, 1310 may comprise ITO.

[0030] As further shown in FIG. 2, a layer 1314 of electrochromic material is deposited on an interior surface 1316 of the first electrically conductive film 1312. The layer 1314 of electrochromic material is configured to effect a reversible color change upon reduction (gain of electrons) or oxidation (loss of electron) caused by an electrical current. In some embodiments, the layer 1314 of electrochromic material may be configured to change from a transparent state to a colored state, or from a colored state to another colored state, upon oxidation or reduction. In some embodiments, the layer 1314 of electrochromic material may be a polyelectrochromic material in which more than two redox states are possible, and may thus exhibit several colors.

[0031] In some embodiments, the layer 1314 of electrochromic material may comprise an organic electrochromic material, an inorganic electrochromic material, a mixture of both, etc. The layer 1314 of electrochromic material may also be a reduction colored material (i.e., a material that becomes colored upon acquisition of electrons), or an oxidation colored material (i.e., a material that becomes colored upon the loss of electrons).

[0032] In some embodiments, the layer 1314 of electrochromic material may include a metal oxide such as MoO₃, V₂O₅, Nb₂O₅, WO₃, TiO₂, Ir(OH)_x, SrTiO₃, ZrO₂, La₂O₃, CaTiO₃, sodium titanate, potassium niobate, combinations thereof, etc. In some embodiments, the layer 1314 of electrochromic material may include a conductive polymer such as poly-3,4-ethylenedioxy thiophene (PEDOT), poly-2,2'-bithiophene, polypyrrole, polyaniline (PANI), polythiophene, polyisothianaphthene, poly(*o*-aminophenol), polypyridine, polyindole, polycarbazole, polyquinone, octacyanophthalocyanine, combinations thereof, etc. Moreover, in some embodiments, the layer 1314 of electrochromic material may include materials, such as viologen, anthraquinone, phenocazine, combinations thereof, etc. Additional examples of electrochromic materials, particularly those including multicolored electrochromic polymers, may be found in U.S. Patent Application No. 62/331,760, filed May 4, 2016, titled Multicolored Electrochromic Polymer Compositions and Methods of Making and Using the Same, and U.S. Patent Application No. 15/399,839, filed on January 6, 2017, titled Multicolored Electrochromic Polymer Compositions and Methods of Making and

Using the Same. The entirety of the above-referenced two applications are herein incorporated by reference.

[0033] As additionally shown in FIG. 2, a charge storage layer 1318 is deposited on an interior surface 1320 of the second electrically conductive film 1310. Suitable materials for the charge storage layer 1318 may include, but are not limited to, vanadium oxide, binary oxides (e.g., CoO, IrO₂, MnO, NiO, and PrO_x), ternary oxides (e.g., Ce_xV_yO_z), etc.

[0034] In some embodiments, the charge storage layer 1318 may be replaced with an optional second layer of electrochromic material. This optional second layer of electrochromic material may have the same or different dimensions, comprise the same or different composition, etc., as the first layer 1314 of electrochromic material.

[0035] The electrochromic film 103 also includes an electrolyte layer 1322 positioned between the layer 1314 of electrochromic material and the charge storage layer 1318. In some embodiments, the electrolyte layer 1322 may include a liquid electrolyte as known in the art. In some embodiments, the electrolyte layer 1322 may include a solid state electrolyte, including but not limited to, Ta₂O₅, MgF, Li₃N, LiPO₄, LiBO₂-Li₂SO₄, etc. In some embodiments, the electrolyte layer 1322 may include a polymer based electrolyte comprising an electrolyte salt (e.g., LiTFSI, LiPF₆, LiBF₄, LiClO₄, LiCF₃SO₃, LiN(CF₃SO₂)₂, LiSbF₆, LiAsF₆, LiN(CF₃CF₂SO₂)₂, (C₂H₅)₄NBF₄, (C₂H₅)₃CH₃NBF₄, LiI, etc.), a polymer matrix (e.g., polyethylene oxide, poly(vinylidene fluoride) (PVDF), poly(methyl methacrylate) (PMMA), polyethylene oxide (PEO), poly(acrylonitrile) (PAN), polyvinyl nitrile, etc.), and one or more optional plasticizers (e.g., glutaronitrile, succinonitrile, adiponitrile, fumaronitrile, etc.).

[0036] In some embodiments, the electrolyte layer 1322 comprises a solid polymer electrolyte. In one embodiment, the solid polymer electrolyte comprises a polymer framework, at least one solid plasticizer, and at least one electrolyte salt. In some embodiments, the polymer framework may include a polar polymer material having an average molecular weight of about 10,000 Daltons or greater. In particular embodiments, the polar polymer material may have an average molecular weight in a range from about 10,000 Daltons to about 800,000,000 Daltons. In some embodiments, the polar polymer

material may be present in an amount ranging from about 15 wt.% to about 80 wt.% based on the total weight of the solid polymer electrolyte.

[0037] The aforementioned polar polymer material may include one or more polar polymers, each of which may include one or more of: C, N, F, O, H, P, F, etc. Suitable polar polymers may include, but are not limited to, polyethylene oxide, poly(vinylidene fluoride-hexafluoropropylene), poly(methyl methacrylate), polyvinyl nitrile, combinations thereof, etc. In embodiments where a plurality of polar polymers is present, the polymers may be crosslinked to form a network having enhanced mechanical properties.

[0038] The polar polymer material may have a sufficient amorphicity so as to achieve sufficient ion conductivity. Amorphous polymer materials typically exhibit high ion conductivities. Accordingly, in some embodiments, the polar material disclosed herein may have an amorphous, or a substantially amorphous, microstructure.

[0039] In some embodiments, the polar polymer material may have a semi-crystalline or crystalline microstructure. In such cases, various modifications may be implemented with respect to the polymer material to suppress the crystallinity thereof. For instance, one modification may involve use of branched polar polymers, linear random copolymers, block copolymers, comb polymers, and/or star-shaped polar polymers. Another modification may include incorporation of an effective amount of solid plasticizers in the polar polymer material, as discussed in greater detail below.

[0040] Various properties of the polar polymer material also may be selected and/or modified to maximize ion conductivity. These properties may include, but are not limited to, glass transition temperature, segmental mobility/flexibility of the polymer backbone and/or any side chains attached thereto, orientation of the polymers, etc.

[0041] As noted above, the presently disclosed solid electrolyte may include at least one solid plasticizer. The at least one solid plasticizer may be substantially miscible in the polymer framework of the solid plasticizer. The at least one solid plasticizer may include an organic material (e.g., small, solid organic molecules) and/or an oligomeric polymer material, in some embodiments. In various embodiments, the at least one solid plasticizer may be selected from the group including glutaronitrile, succinonitrile, adiponitrile, fumaronitrile, and combinations thereof.

[0042] In some embodiments, a plurality of solid plasticizers may be present in the polymer framework, where each plasticizer may independently include an organic material (e.g., small, solid organic molecules) and/or an oligomeric polymer material. Particularly, each plasticizer may independently be glutaronitrile, succinonitrile, adiponitrile, fumaronitrile, etc. Moreover, the dimensions of at least two, some, a majority, or all of the plasticizers may be the same or different as one another.

[0043] In some embodiments, the total amount of solid plasticizer may be in a range from about 20 wt.% to about 80 wt.% based on the total weight of the solid electrolyte.

[0044] As additionally noted above, the solid polymer electrolyte may include at least one electrolyte salt. In some embodiments, the at least one electrolyte salt may comprise an organic salt. In some embodiments, the at least one electrolyte salt may comprise an inorganic salt. Suitable electrolyte salts may include, but are not limited to, LiTFSI, LiPF₆, LiBF₄, LiClO₄, LiCF₃SO₃, LiN(CF₃SO₂)₂, LiSbF₆, LiAsF₆, LiN(CF₃CF₂SO₂)₂, (C₂H₅)₄NBF₄, (C₂H₅)₃CH₃NBF₄, LiI, combinations thereof, etc. In some embodiments, the total amount of electrolyte salt may be in a range from about 10 wt.% to about 50 wt.% based on the total weight of the solid electrolyte.

[0045] The solid polymer electrolyte is distinguishable from conventional liquid electrolytes, as well as gel polymer electrolytes including an ionic liquid therein. In other words, the presently disclosed solid polymer electrolyte may be an all solid polymer electrolyte, and does not include any liquid or gel components therein. The presently disclosed solid polymer electrolyte may also be transparent in some aspects. Additionally, the solid polymer electrolyte may have an ion conductivity in a range from about 10⁻⁷ S/cm to about 10⁻³ S/cm.

[0046] Methods of making the presently disclosed solid polymer electrolyte may include synthesis, polymerization, solvation, etc. processes as known in the art. In one particular, non-limiting embodiment, a method of making the presently disclosed polymer electrolyte may include: (a) combining the polymer framework, the at least one plasticizer, and the at least one electrolyte salt in an appropriate solvent; and (b) removing the solvent to obtain the solid polymer electrolyte. Exemplary solvents may include, but are not limited to, acetone, methanol, tetrahydrofuran, etc. In some

embodiments, one or more experimental parameters may be optimized to facilitate the dissolving of the polymer framework, plasticizer, and electrolyte salt in the solvent. These experimental parameters may include the components remain in the solvent, agitation/stirring of the solvent, etc.

[0047] In some embodiments, the electrolyte layer 1322 of FIG. 2 comprises a solid polymer electrolyte, such as the solid polymer electrolytes described above, and does not include any liquid or gel electrolyte. Such a solid polymer electrolyte (i) has sufficient mechanical strength yet is versatile in shape so as to allow easy formation into thin films, and thin-film shaped products; (ii) avoids issues related to adhesion and print processing affecting conventional electrolytes; (iii) provides stable contact between the electrolyte/electrode interfaces (those with and without the electrochromic material coating thereon); (iv) avoids the problem of leakage commonly associated with liquid electrolytes; (v) has desirable non-toxic and non-flammable properties; (vi) avoids problems associated with evaporation due to its lack of vapor pressure; (vii) exhibits improved ion conductivities as compared to convention polymer electrolytes; etc.

[0048] Additional examples of electrolyte materials, particularly those including solid polymer electrolytes, may be found in U.S. Patent Application No. 62/323,407, filed April 15, 2016, titled Solid Polymer Electrolyte for Electrochromic Devices, and U.S. Patent Application No. 15/487,325, filed on April 13, 2017, titled Solid Polymer Electrolyte for Electrochromic Devices. The entirety of the above-referenced two applications are herein incorporated by reference.

[0049] The electrochromic film 103 may be used in various applications and/or in permutations, which may or may not be noted in the illustrative embodiments/aspects described herein. For instance, the electrochromic film 103 may include more or less features/components than those shown in FIG. 2, in some embodiments. Additionally, unless otherwise specified, one or more components of the electrochromic film 103 may be of conventional material, design, and/or fabricated using known techniques (e.g., sputtering, chemical vapor deposition (CVD), physical vapor deposition (PVD), plasma-enhanced chemical vapor deposition (PECVD), spray coating, slot-die coating, dip

coating, spin coating, printing, etc.), as would be appreciated by skilled artisans upon reading the present disclosure.

[0050] FIG. 3 is a graphical presentation illustrating a controller 105, consistent with exemplary embodiments of the present disclosure. The controller 105 may include a power converter 301, a power output control 302, and a signal receiver 303. The power converter 301 may convert input power from a power source to the power required by the signal receiver 303 and the power output control 302. The power source could be either a power source integrated with the controller 105 as a self-contained, self-powered unit, or an external power source, provided by, for example, power of a building where the electrochromic device is installed. The power output control 302 may be configured to supply power to the electrochromic film 103. In particular, the power output 302 may be configured to supply voltage between the first and second electrically conductive films 1312, 1310. Since the state of the electrochromic film 103 is driven by electric charges, the power output control 302 can inject into or extract a certain amount of electric charges from the electrochromic film 103 based on the signals the signal receiver 303 receives, in order to change the state of the electrochromic film 103. The signal receiver 303 may be configured to receive signals sent to the controller 105, and transfer the signals to the power output control 302. In some embodiments, the signal receiver 303 may be connected to an external switch and a central switch to provide both local and global controls of the electrochromic device 100.

[0051] In the present application, we propose different methods for changing optical states of electrochromic materials. The optical states of electrochromic materials can be changed by injecting or extracting electric charges into the electrochromic films. Both voltage driving and current driving can be employed to inject/extract electric charges. In addition, the combination of voltage driving and current driving can also be employed. Further, the voltage driving and the current driving can be operated at either direct current (DC) or alternating current (AC). As long as the required amount of electric charges are injected or extracted, the electrochromic film can be set at a certain optical state.

Changing electrochromic film's optical state by voltage driving

[0052] In one embodiment, changing the optical state of an electrochromic film can be operated by a DC voltage. An external power supply outputs a constant voltage to the electrochromic film. The current through the film and the film's light transmission can be monitored over time. By applying the constant voltage, the charges are injected into the electrochromic film, inducing oxidation of the film, thereby changing its optical state.

Example 1

[0053] An exemplary electrochromic film is operated under a constant voltage of 1.5 V. FIG. 4 presents the response of the electrochromic film changing from a dark state (with minimum transmission) to a clear state (with maximum transmission) under a constant voltage. As shown in FIG. 4, the current density of electrochromic film continues decreasing over time, while the transmission of the electrochromic film increases as the voltage applied and becomes saturated after 20 s. This may indicate that the electrochromic film only requires certain amount of charges to change its state.

[0054] FIG. 5 shows dependence of the transmission of the electrochromic film on the amount of injected charges under a constant voltage. The transmission of the electrochromic film increases as the amount of injected charges increases. By controlling the amount of the charges injected into the electrochromic film, the transmission of the electrochromic film can be adjusted accordingly. Thus, the transmission of the electrochromic film can be set at any state by injecting a certain amount of charges. For example, if the transmission of the electrochromic film is to be set at 40% from the dark state, a charge density of about 3 mC/cm² is needed to inject into the electrochromic film.

[0055] In another embodiment, to change the state of an electrochromic film from a clear state back to a dark state, the polarity of the external voltage can be switched. By switching the polarity of the external voltage, the charges can be extracted from the electrochromic film, inducing reduction of the electrochromic film, thereby changing its state.

Example 2

[0056] Another exemplary electrochromic film is operated under a constant voltage of 1 V. FIG. 6 presents the response of the exemplary electrochromic film changing from

a clear state (with maximum transmission) to a dark state (with minimum transmission) under a constant voltage. As shown in FIG. 6, negative current density indicates that the charge is extracted from the electrochromic film. As the current density drops to zero, the transmission of the electrochromic film decreases from the maximum to the minimum.

[0057] FIG. 7 shows dependence of the transmission of the electrochromic film on the amount of extracted charges under a constant voltage. The transmission of the electrochromic film decreases as the amount of extracted charges increases. By controlling the amount of charges extracted from the electrochromic film, the transmission of the electrochromic film can be adjusted accordingly. The transmission of the electrochromic film can be set at any state by extracting a certain amount of charges. For example, if the transmission of the electrochromic film is to be set at 35% from the clear state, a charge density of about 4 mC/cm^2 should be set in the electrochromic film.

Changing electrochromic film's optical state by current driving

[0058] In another embodiment, changing the optical state of an electrochromic film can be operated by constant DC current. An external power supply outputs a constant current to the electrochromic film. The current through the film and the film's transmission can be monitored over time. By applying the constant current, the charges are injected into the electrochromic film, inducing oxidation of the film, thereby changing its optical state.

Example 3

[0059] Another exemplary electrochromic film is operated under a constant current of 0.06 mA/cm^2 . FIG. 8 presents the response of the exemplary electrochromic film changing from a dark state (with minimum transmission) to a clear state (with maximum transmission) under a constant current. As shown in FIG. 8, the transmission of the electrochromic film changes as the constant current supplied, and becomes saturated after around 70s. The constant current sharply drops near when the film's transmission reaches the maximum. Since the amount of the charges injected equals the current times the time, this may indicate that after the state of the electrochromic film is totally switched from a clear state to a dark state, there's no need for any additional charge injection. Thus, by

controlling the amount of the charges injected, the transmission of the electrochromic film can be adjusted.

[0060] FIG. 9 shows dependence of the transmission of the electrochromic film on the amount of the injected charges under a constant current. The transmission of the electrochromic film increases as the amount of the injected charges increases. By controlling the amount of charges injected into the electrochromic film, the transmission of electrochromic film can be adjusted accordingly. The transmission of the electrochromic film can be set at any state by injecting a certain amount of charges. For example, if the transmission of electrochromic film is to be set at 50% from the dark state, a charge density of about 3 mC/cm² is needed to inject into the electrochromic film.

[0061] In another embodiment, to change the state of an electrochromic film from a clear state back to a dark state, the polarity of the external current can be switched. By switching the polarity of the external current, the charges can be extracted from the electrochromic film, inducing reduction of the electrochromic film, thereby changing its state.

Example 4

[0062] Another exemplary electrochromic film is operated under a constant current of 0.06 mA/cm². FIG. 10 presents the response of the exemplary electrochromic film changing from a clear state (with maximum transmission) to a dark state (with minimum transmission) under a constant current. As shown in FIG. 10 negative current density indicates that the charge is extracted from the electrochromic film. The transmission of the electrochromic film changes as the constant current supplied. The constant current sharply drops near when the transmission of the electrochromic film reaches the minimum. Since the amount of charges extracted equals the current times the time, this may indicate that after the state of the electrochromic film is totally switched from the clear state to the dark state, there's no need for any additional charge extraction. Thus, by controlling the amount of the charges extracted, the transmission of the electrochromic film can be adjusted.

[0063] FIG. 11 shows dependence of the transmission of the electrochromic film on the extracted charges under a constant current. The transmission of the electrochromic film decreases as the amount of the extracted increases. By controlling the amount of charges extracted from the electrochromic film, the transmission of the electrochromic film can be adjusted accordingly. The transmission of the electrochromic film can be set at any state by extracting a certain amount of charges. For example, if the transmission of the electrochromic film is to be set at 40% from the clear state, a charge density of about 3 mC/cm^2 should be set in the electrochromic film.

[0064] In this disclosure, we present methods of changing optical states of electrochromic materials with constant voltage driving and constant current driving. It should also be well understood that combination of voltage driving and current driving, pulsed voltage driving and current driving, combination of pulsed and DC driving, etc. can also be employed to change electrochromic materials to a desired optical state. As long as a certain amount of charges is injected into or extracted from an electrochromic material, the optical state of the electrochromic material can be adjusted accordingly.

[0065] The foregoing description of the present invention has been provided for the purposes of illustration and description. It is not intended to be exhaustive or to limit the invention to the precise forms disclosed. The breadth and scope of the present invention should not be limited by any of the above-described exemplary embodiments. Many modifications and variations will be apparent to the practitioner skilled in the art. The modifications and variations include any relevant combination of the disclosed features. The embodiments were chosen and described in order to best explain the principles of the invention and its practical application, thereby enabling others skilled in the art to understand the invention for various embodiments and with various modifications that are suited to the particular use contemplated. It is intended that the scope of the invention be defined by the following claims and their equivalence.

WHAT IS CLAIMED IS:

1. A method of changing an optical state of an electrochromic film, wherein the electrochromic film has a plurality of optical states, comprising:
 - selecting a desired state of the plurality of optical states;
 - injecting electric charges into the electrochromic film;
 - monitoring an amount of the electric charges injected into the electrochromic film; and
 - stopping injecting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state.
2. The method of claim 1, wherein injecting electric charges into the electrochromic film comprises applying an external DC voltage to the electrochromic film.
3. The method of claim 1, wherein injecting electric charges into the electrochromic film comprises applying an external DC current to the electrochromic film.
4. The method of claim 1, wherein injecting electric charges into the electrochromic film comprises applying an external pulsed voltage to the electrochromic film.
5. The method of claim 1, wherein injecting electric charges into the electrochromic film comprises applying an external pulsed current to the electrochromic film.
6. The method of claim 1, wherein injecting electric charges into the electrochromic film comprises applying a combination of an external voltage and an external current to the electrochromic film.
7. The method of claim 1, wherein injecting electric charges into the electrochromic film comprises applying a combination of a constant power source and a pulsed power source to the electrochromic film.

8. A method of changing an optical state of an electrochromic film, wherein the electrochromic film has a plurality of optical states, comprising:
 - selecting a desired state of the plurality of optical states;
 - extracting electric charges from the electrochromic film;
 - monitoring an amount of the electric charges extracted from the electrochromic film; and
 - stopping extracting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state.
9. The method of claim 8, wherein extracting electric charges from the electrochromic film comprises applying an external DC voltage to the electrochromic film.
10. The method of claim 8, wherein extracting electric charges from the electrochromic film comprises applying an external DC current to the electrochromic film.
11. The method of claim 8, wherein extracting electric charges from the electrochromic film comprises applying an external pulsed voltage to the electrochromic film.
12. The method of claim 8, wherein extracting electric charges from the electrochromic film comprises applying an external pulsed current to the electrochromic film.
13. The method of claim 8, wherein extracting electric charges from the electrochromic film comprises applying a combination of an external voltage and an external current to the electrochromic film.

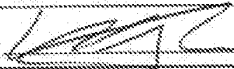
14. The method of claim 8, wherein extracting charges into the electrochromic film comprises applying a combination of a constant power source and a pulsed power source to the electrochromic film.
15. A method of changing an optical state of an electrochromic film, comprising:
setting a plurality of pre-determined optical states of the electrochromic film;
determining an amount of electric charges corresponding to each of the plurality of pre-determined optical states;
selecting a desired state of the plurality of pre-determined optical states; and
adjusting an amount of electric charges within the electrochromic film to the determined amount of electric charges corresponding to the selected desired state.
16. The method of claim 15, wherein adjusting the amount of electric charges within the electrochromic film comprises applying an external DC voltage, an external pulsed voltage, or combination thereof to the electrochromic film.
17. The method of claim 15, wherein adjusting the amount of electric charges within the electrochromic film comprises applying an external DC current, an external pulsed current, or a combination thereof to the electrochromic film.
18. The method of claim 15, wherein adjusting the amount of electric charges within the electrochromic film comprises applying a combination of an external voltage and an external current to the electrochromic film.
19. The method of claim 18, wherein the external voltage includes DC voltage and pulsed voltage, and the external current includes DC current and pulsed current.
20. The method of claim 15, wherein the plurality of pre-determined optical states include a clear state and a dark state of the electrochromic film.

ABSTRACT

The disclosure relates generally to a method of changing an optical state of an electrochromic film. The electrochromic film may have a plurality of optical states. The method may include selecting a desired state of the plurality of optical states; injecting electric charges into the electrochromic film; monitoring an amount of the electric charges injected into the electrochromic film; and stopping injecting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state.

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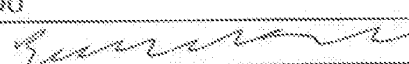
**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM
As the below named inventor, I hereby declare that: This declaration is directed to: ☒ The attached application, or ☐ United States application or PCT international application number _____ filed on _____. The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. 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 five (5) years, or both. WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identify theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available.	
LEGAL NAME OF INVENTOR	
Inventor: <u>JIAN WANG</u> Date (Optional): <u>2/1/2018</u> Signature: 	
Note: An application data sheet (PTO/SB/14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.	

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**DECLARATION (37 CFR 1.63) FOR UTILITY OR DESIGN APPLICATION USING AN
APPLICATION DATA SHEET (37 CFR 1.76)**

Title of Invention	METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM
As the below named inventor, I hereby declare that: This declaration is directed to: ☒ The attached application, or ☐ United States application or PCT international application number _____ filed on _____ The above-identified application was made or authorized to be made by me. I believe that I am the original inventor or an original joint inventor of a claimed invention in the application. 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 five (5) years, or both. WARNING: Petitioner/applicant is cautioned to avoid submitting personal information in documents filed in a patent application that may contribute to identify theft. Personal information such as social security numbers, bank account numbers, or credit card numbers (other than a check or credit card authorization form PTO-2038 submitted for payment purposes) is never required by the USPTO to support a petition or an application. If this type of personal information is included in documents submitted to the USPTO, petitioners/applicants should consider redacting such personal information from the documents before submitting them to the USPTO. Petitioner/applicant is advised that the record of a patent application is available to the public after publication of the application (unless a non-publication request in compliance with 37 CFR 1.213(a) is made in the application) or issuance of a patent. Furthermore, the record from an abandoned application may also be available to the public if the application is referenced in a published application or an issued patent (see 37 CFR 1.14). Checks and credit card authorization forms PTO-2038 submitted for payment purposes are not retained in the application file and therefore are not publicly available. LEGAL NAME OF INVENTOR Inventor: <u>YAN ZHOU</u> Date (Optional): <u>2/1/2018</u> Signature:  Note: An application data sheet (PTO/SB14 or equivalent), including naming the entire inventive entity, must accompany this form or must have been previously filed. Use an additional PTO/AIA/01 form for each additional inventor.	

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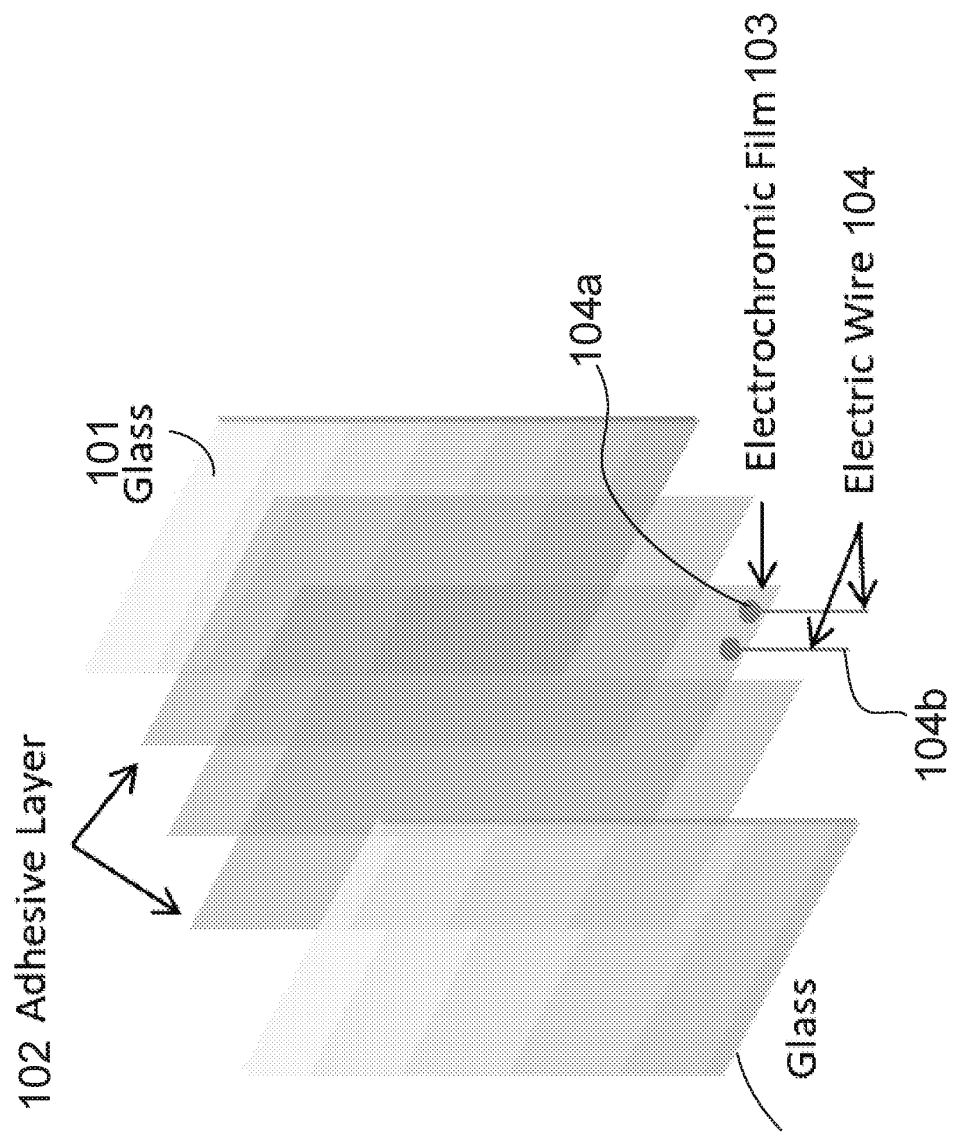


FIG. 1

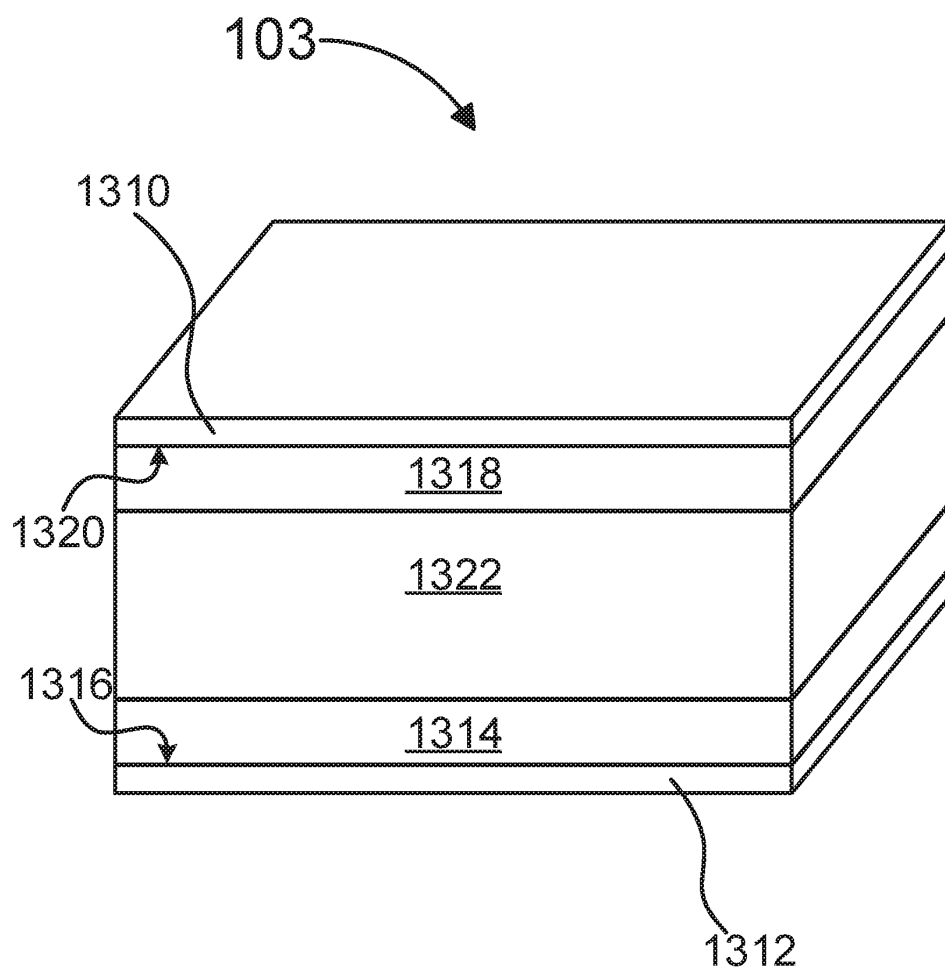


FIG. 2

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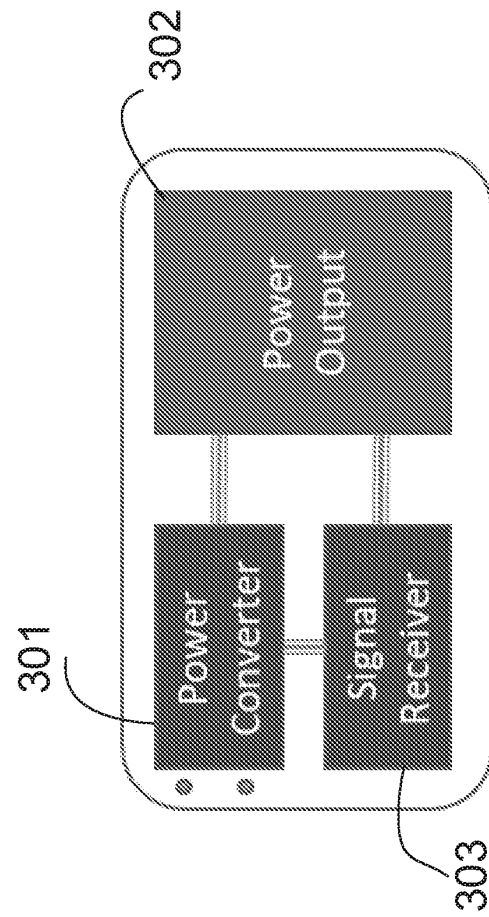


FIG. 3

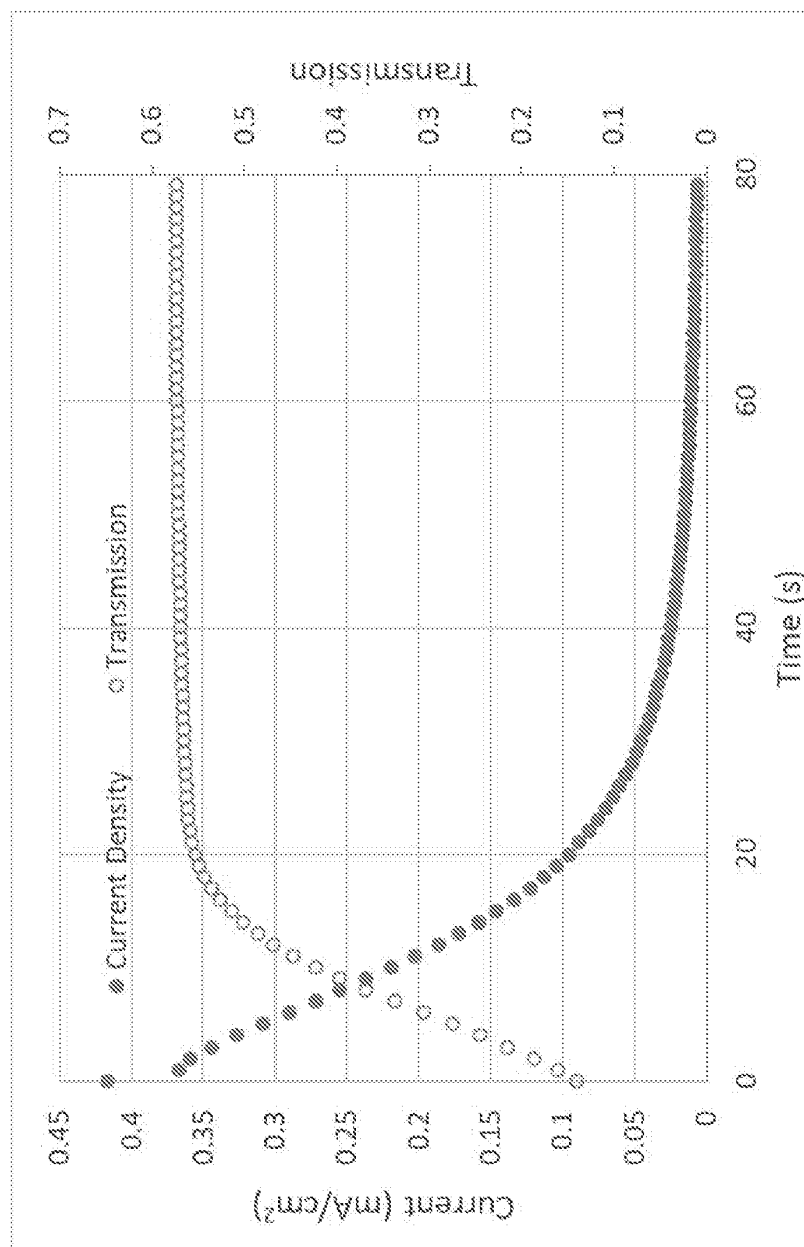


FIG. 4

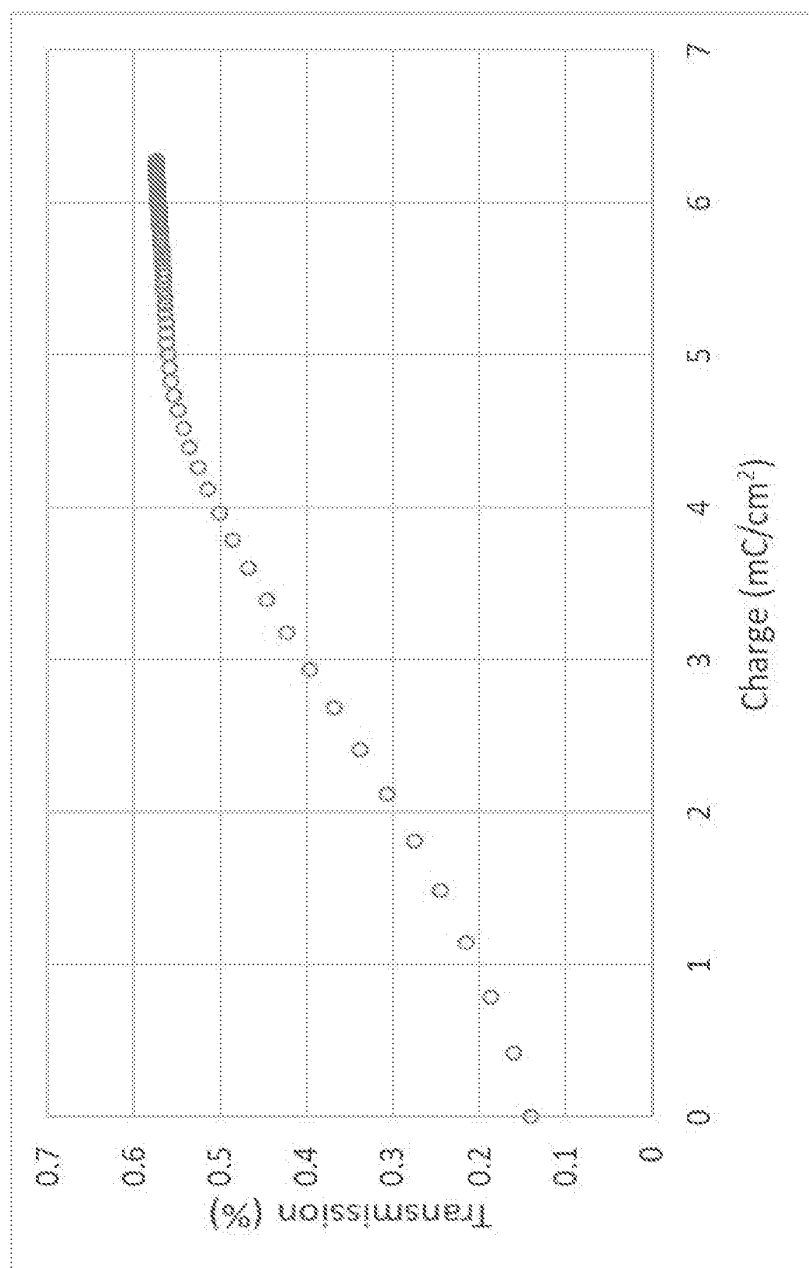


FIG. 5

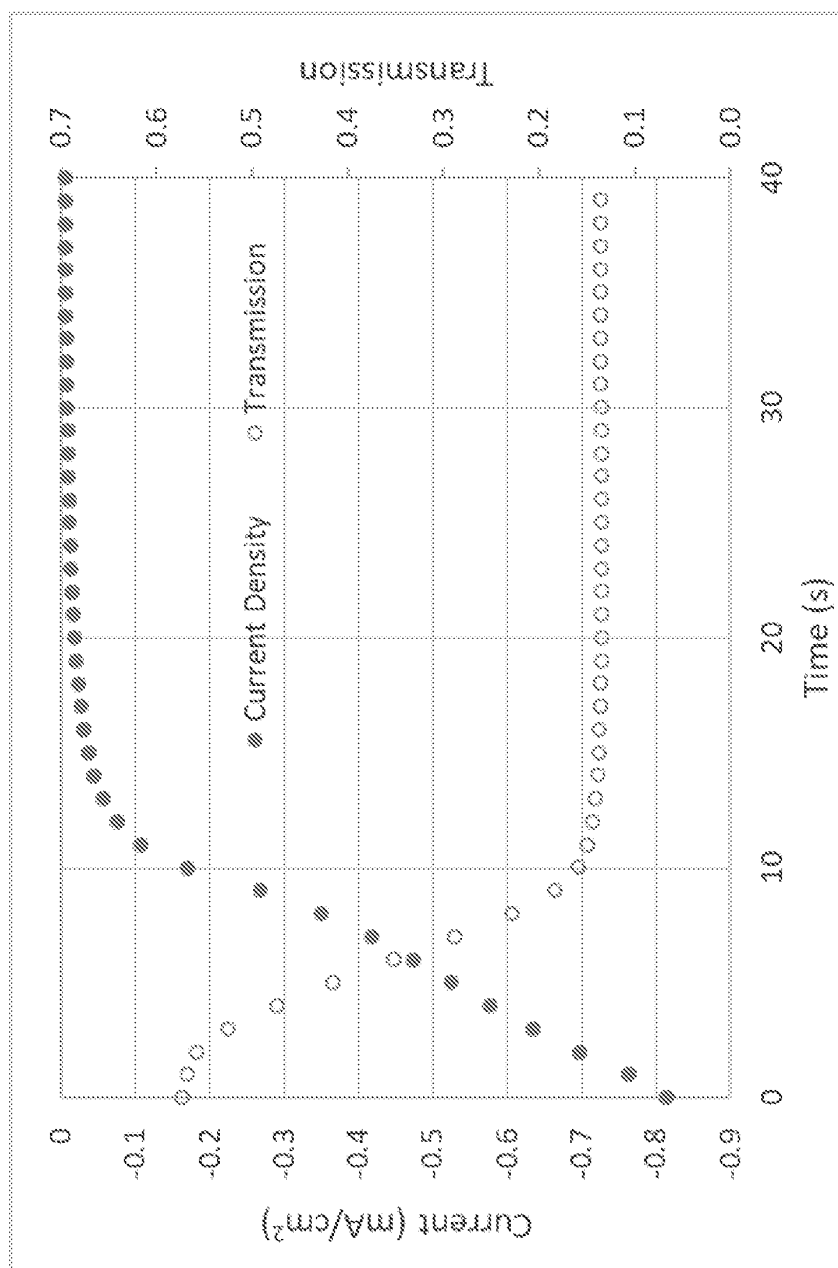


FIG. 6

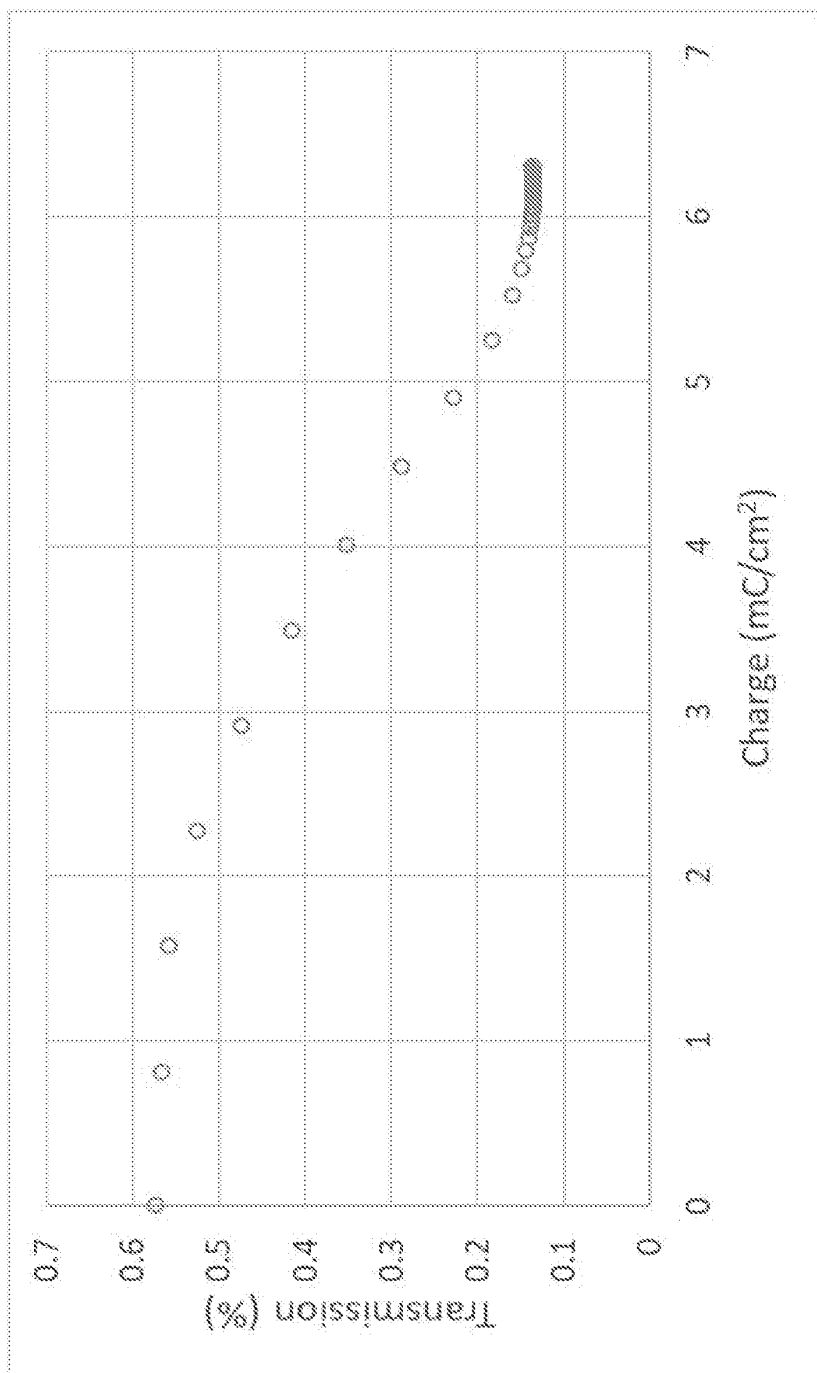


FIG. 7

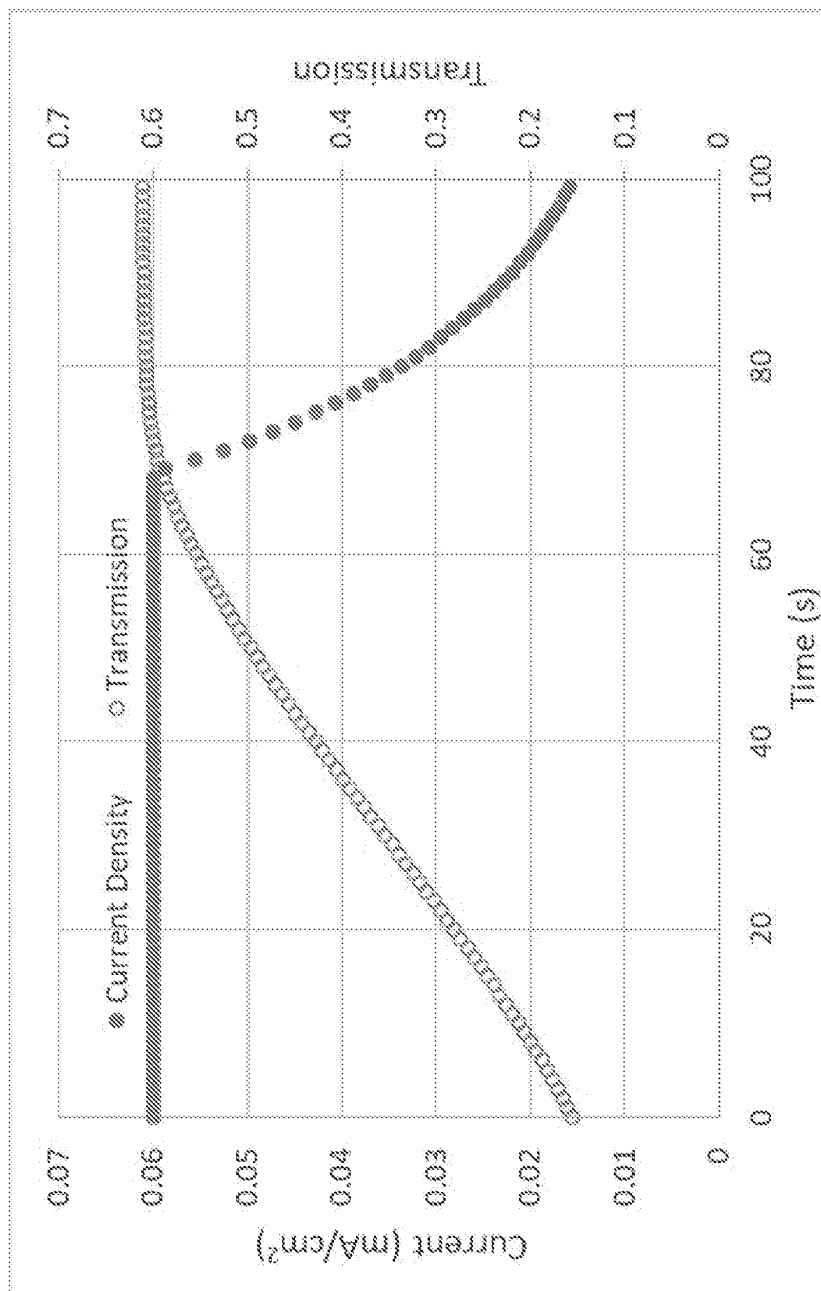


FIG. 8

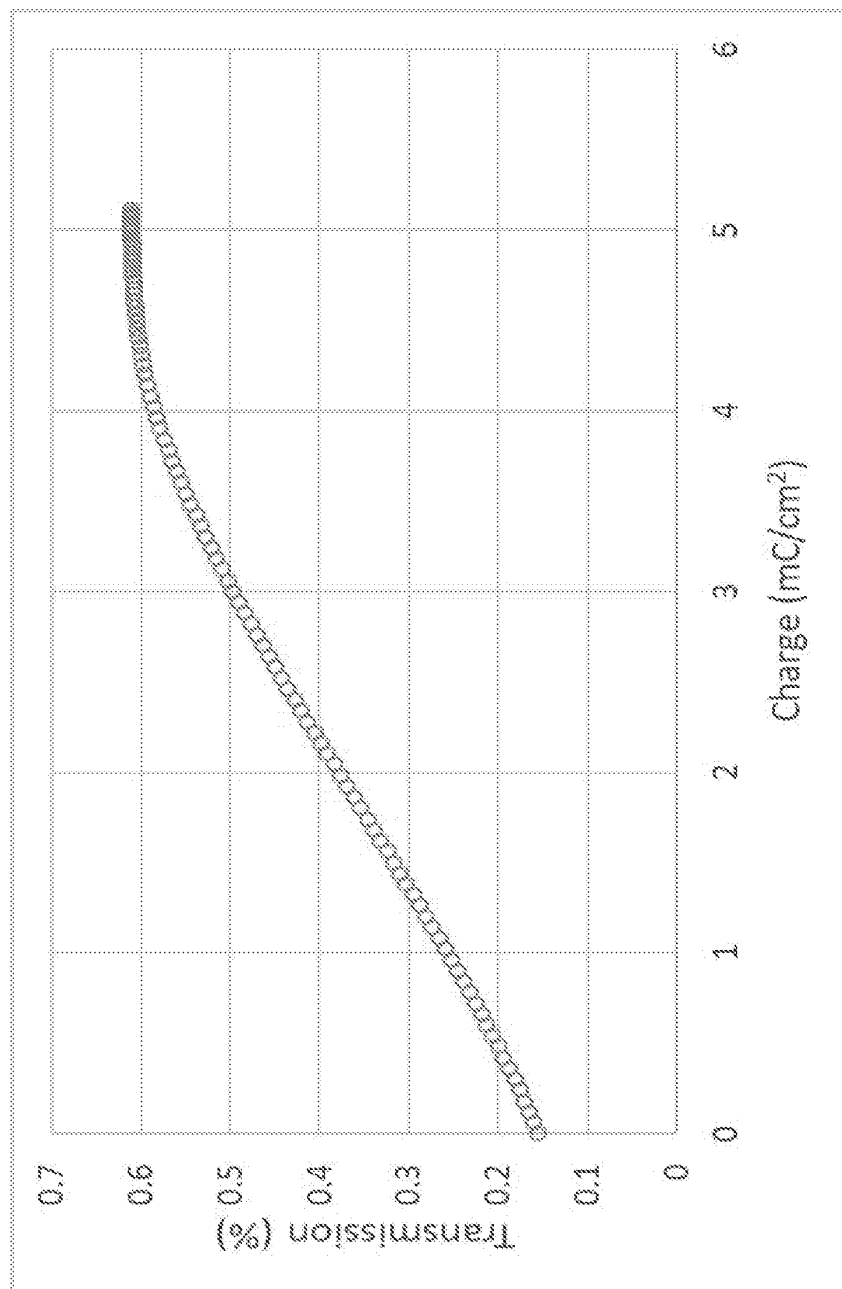


FIG. 9

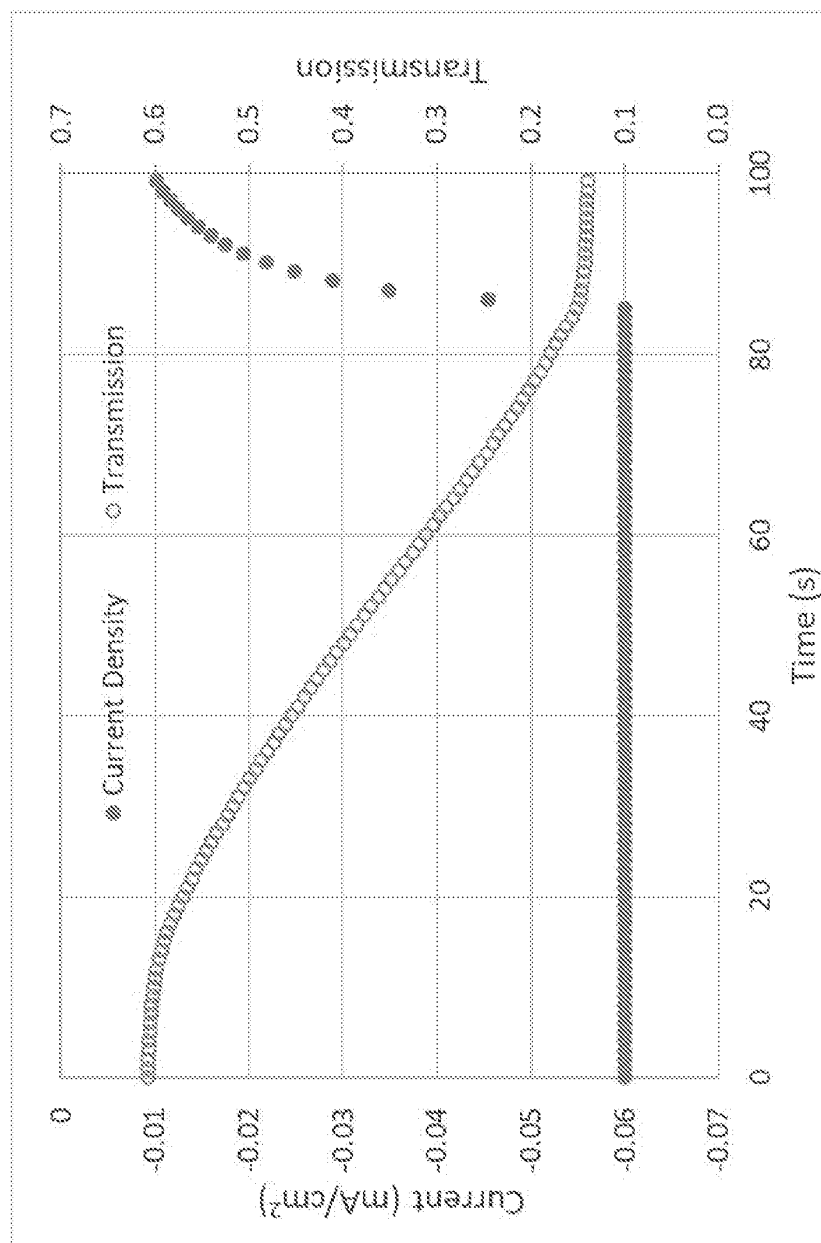


FIG. 10

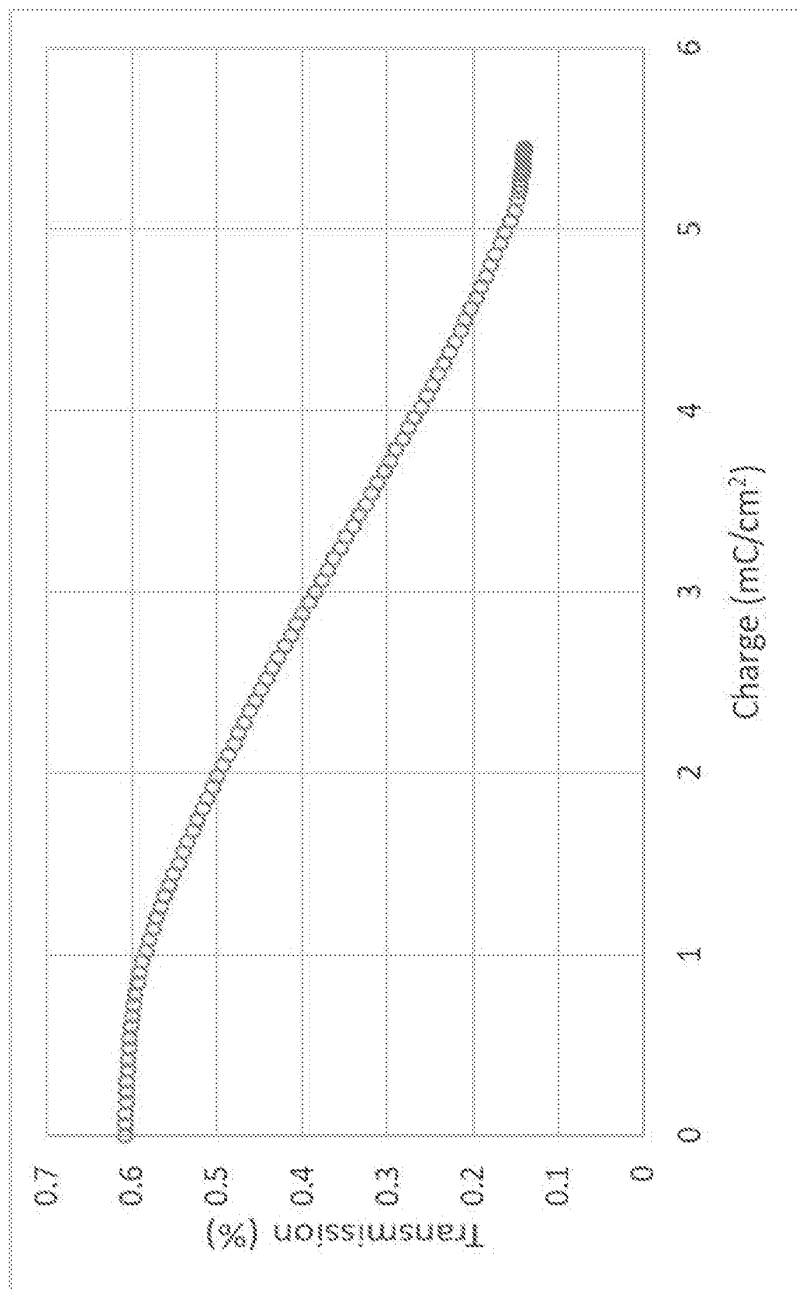


FIG. 11

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM		
First Named Inventor/Applicant Name:		JIAN WANG		
Filer:		Weiguo Chen/Krystle Mestressat		
Attorney Docket Number:		50WF-263215		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY FILING FEE (ELECTRONIC FILING)	4011	1	75	75
UTILITY SEARCH FEE	2111	1	330	330
UTILITY EXAMINATION FEE	2311	1	380	380
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				785

Electronic Acknowledgement Receipt	
EFS ID:	31976867
Application Number:	15913669
International Application Number:	
Confirmation Number:	7012
Title of Invention:	METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM
First Named Inventor/Applicant Name:	JIAN WANG
Customer Number:	139780
Filer:	Weiguo Chen/Krystle Mestressat
Filer Authorized By:	Weiguo Chen
Attorney Docket Number:	50WF-263215
Receipt Date:	06-MAR-2018
Filing Date:	
Time Stamp:	18:22:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$785
RAM confirmation Number	030718INTEFSW00005708504561
Deposit Account	504561
Authorized User	Krystle Mestressat
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)					
37 CFR 1.20 (Post Issuance fees)					
37 CFR 1.21 (Miscellaneous fees and charges)					
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	263215_ADS.pdf	1822207	no	8
			62f4577105b75fabac990322382ad3d321a9a702		
Warnings:					
Information:					
2		263215_Application.pdf	174942	yes	19
			7156ae4d35ffcae69ebfb8cf4b64daa0f69cbcd		
	Multipart Description/PDF files in .zip description				
	Document Description		Start	End	
	Specification		1	15	
	Claims		16	18	
	Abstract		19	19	
Warnings:					
Information:					
3	Oath or Declaration filed	263215_Declaration.pdf	351757	no	2
			eba1b8212beca6d83bc45d7f39393020ff2188a34		
Warnings:					
Information:					
4	Drawings-only black and white line drawings	263215_Drawings.pdf	397950	no	11
			a7de51decdf0291926dec63b34f080c8541a4d0c		
Warnings:					
Information:					
5	Fee Worksheet (SB06)	fee-info.pdf	35015	no	2
			49ca13cce7a7642504ee9ebcf091b2267067219d		

Warnings:	
Information:	
Total Files Size (in bytes):	2781871
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.	

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

☒

Practitioners associated with Customer Number:

139780

OR

☐

Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number

Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

☒

The address associated with Customer Number:

139780

OR

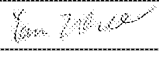
☐	Firm or Individual Name			
	Address			
	City	State	Zip	
	Country			
	Telephone	Email		

Assignee Name and Address: Furcifer Inc.
1455 Adams Drive, Suite 1650
Menlo Park, CA 94025

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be Filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	3/30/2016
Name	Yan Zhou	Telephone	530-574-4429
Title	CEO		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Furcifer Inc.

Application No./Patent No.: 15/913,669 Filed/Issue Date: March 6, 2018

Titled: METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM

Furcifer Inc., a corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is ____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 045125, Frame 0158, or for which a copy thereof is attached.
- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Weiguo Chen/

Signature

Weiguo Chen (Reg. No. 61,878)

Printed or Typed Name

March 9, 2018

Date

Attorney of Record

Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	32009798
Application Number:	15913669
International Application Number:	
Confirmation Number:	7012
Title of Invention:	METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM
First Named Inventor/Applicant Name:	JIAN WANG
Customer Number:	139780
Filer:	Weiguo Chen/Yasmin Alleje
Filer Authorized By:	Weiguo Chen
Attorney Docket Number:	50WF-263215
Receipt Date:	09-MAR-2018
Filing Date:	
Time Stamp:	14:46:27
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
------------------------	----

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	Furcifer_POA.pdf	402545	no	1
			b18556a00960eedb20fe0154c26cf4b0bda104b7		

Warnings:

Information:					
2	Auth or Resc of Auth to Access Appl by DAS/PDX Office	50WF-263215_statement_373c.pdf	117998	no	3
			587ef836967778f9e115b0552ac4a604e2654909		
Warnings:					
Information:					
Total Files Size (in bytes):			520543		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

☒

Practitioners associated with Customer Number:

139780

OR

☐

Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number

Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned only to the undersigned according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

☒

The address associated with Customer Number:

139780

OR

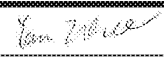
☐	Firm or Individual Name			
	Address			
	City	State	Zip	
	Country			
	Telephone	Email		

Assignee Name and Address: Furcifer Inc.
1455 Adams Drive, Suite 1650
Menlo Park, CA 94025

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/96 or equivalent) is required to be Filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of The practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

SIGNATURE of Assignee of Record

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature		Date	3/30/2016	
Name	Yan Zhou	Telephone	530-574-4429	
Title	CEO			

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(c)

Applicant/Patent Owner: Furcifer Inc.

Application No./Patent No.: 15/913,669

Filed/Issue Date: March 6, 2018

Titled: METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM

Furcifer Inc., a corporation

(Name of Assignee)

(Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose **one** of options 1, 2, 3 or 4 below):

1. ☒ The assignee of the entire right, title, and interest.
2. ☐ An assignee of less than the entire right, title, and interest (check applicable box):
- ☐ The extent (by percentage) of its ownership interest is ____%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
- ☐ There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

3. ☐ The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

4. ☐ The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose **one** of options A or B below):

- A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 045125, Frame 0158, or for which a copy thereof is attached.

- B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

2. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at

Reel _____, Frame _____, or for which a copy thereof is attached.

[Page 1 of 2]

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

STATEMENT UNDER 37 CFR 3.73(c)

3. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

4. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

5. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

6. From: _____ To: _____

The document was recorded in the United States Patent and Trademark Office at
Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet(s).

☒ As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

/Weiguo Chen/

Signature

Weiguo Chen (Reg. No. 61,878)

Printed or Typed Name

March 9, 2018

Date

Attorney of Record

Title or Registration Number

Privacy Act Statement

The **Privacy Act of 1974 (P.L. 93-579)** requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Acknowledgement Receipt	
EFS ID:	32009879
Application Number:	15913669
International Application Number:	
Confirmation Number:	7012
Title of Invention:	METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM
First Named Inventor/Applicant Name:	JIAN WANG
Customer Number:	139780
Filer:	Weiguo Chen/Yasmin Alleje
Filer Authorized By:	Weiguo Chen
Attorney Docket Number:	50WF-263215
Receipt Date:	09-MAR-2018
Filing Date:	
Time Stamp:	14:49:37
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	Furcifer_POA.pdf	402545	no	1
			b18556a00960eedb20fe0154c26cf4b0bda104b7		

Warnings:

Information:					
2	Assignee showing of ownership per 37 CFR 3.73	50WF-263215_statement_373c.pdf	117998	no	3
			587ef836967778f9e115b0552ac4a604e2654909		
Warnings:					
Information:					
Total Files Size (in bytes):			520543		
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.					

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875						Application or Docket Number 15/913,669				
APPLICATION AS FILED - PART I										
(Column 1)		(Column 2)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY				
FOR	NUMBER FILED	NUMBER EXTRA	RATE(\$)	FEE(\$)		RATE(\$)	FEE(\$)			
BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A	75		N/A				
SEARCH FEE (37 CFR 1.16(k), (l), or (m))	N/A	N/A	N/A	330		N/A				
EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A	380		N/A				
TOTAL CLAIMS (37 CFR 1.16(j))	20	minus 20 = *	x 50 =	0.00	OR					
INDEPENDENT CLAIMS (37 CFR 1.16(h))	3	minus 3 = *	x 230 =	0.00						
APPLICATION SIZE FEE (37 CFR 1.16(s))	If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).			0.00						
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))				0.00						
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL		TOTAL				
				785						
APPLICATION AS AMENDED - PART II										
(Column 1)		(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY		
AMENDMENT A		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
AMENDMENT B		CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE(\$)	ADDITIONAL FEE(\$)		RATE(\$)	ADDITIONAL FEE(\$)
	Total (37 CFR 1.16(i))	*	Minus	**	=	x	=	OR	x	=
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x	=	OR	x	=
	Application Size Fee (37 CFR 1.16(s))							OR		
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))							OR		
						TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest found in the appropriate box in column 1.										



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UNITED STATES DEPARTMENT OF COMMERCE
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www.uspto.gov

APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO	TOT CLAIMS	IND CLAIMS
15/913,669	03/06/2018	2872	785	50WF-263215	20	3

CONFIRMATION NO. 7012

FILING RECEIPT



000000098511985

139780
Sheppard Mullin Richter & Hampton LLP
Weiguo Chen
379 Lytton Ave.
Palo Alto, CA 94301

Date Mailed: 04/04/2018

Receipt is acknowledged of this non-provisional patent application. The application will be taken up for examination in due course. Applicant will be notified as to the results of the examination. Any correspondence concerning the application must include the following identification information: the U.S. APPLICATION NUMBER, FILING DATE, NAME OF APPLICANT, and TITLE OF INVENTION. Fees transmitted by check or draft are subject to collection. Please verify the accuracy of the data presented on this receipt. **If an error is noted on this Filing Receipt, please submit a written request for a Filing Receipt Correction. Please provide a copy of this Filing Receipt with the changes noted thereon. If you received a "Notice to File Missing Parts" for this application, please submit any corrections to this Filing Receipt with your reply to the Notice. When the USPTO processes the reply to the Notice, the USPTO will generate another Filing Receipt incorporating the requested corrections**

Inventor(s)

JIAN WANG, MENLO PARK, CA;
YAN ZHOU, MENLO PARK, CA;

Applicant(s)

FURCIFER INC., Menlo Park, CA;

Power of Attorney: The patent practitioners associated with Customer Number 139780

Domestic Applications for which benefit is claimed - None.

A proper domestic benefit claim must be provided in an Application Data Sheet in order to constitute a claim for domestic benefit. See 37 CFR 1.76 and 1.78.

Foreign Applications for which priority is claimed (You may be eligible to benefit from the **Patent Prosecution Highway** program at the USPTO. Please see <http://www.uspto.gov> for more information.) - None.

Foreign application information must be provided in an Application Data Sheet in order to constitute a claim to foreign priority. See 37 CFR 1.55 and 1.76.

Permission to Access Application via Priority Document Exchange: Yes

Permission to Access Search Results: Yes

Applicant may provide or rescind an authorization for access using Form PTO/SB/39 or Form PTO/SB/69 as appropriate.

If Required, Foreign Filing License Granted: 04/03/2018

The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 15/913,669**

Projected Publication Date: 09/12/2019

Non-Publication Request: No

Early Publication Request: No

**** SMALL ENTITY ****

Title

METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM

Preliminary Class

359

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

PROTECTING YOUR INVENTION OUTSIDE THE UNITED STATES

Since the rights granted by a U.S. patent extend only throughout the territory of the United States and have no effect in a foreign country, an inventor who wishes patent protection in another country must apply for a patent in a specific country or in regional patent offices. Applicants may wish to consider the filing of an international application under the Patent Cooperation Treaty (PCT). An international (PCT) application generally has the same effect as a regular national patent application in each PCT-member country. The PCT process **simplifies** the filing of patent applications on the same invention in member countries, but **does not result** in a grant of "an international patent" and does not eliminate the need of applicants to file additional documents and fees in countries where patent protection is desired.

Almost every country has its own patent law, and a person desiring a patent in a particular country must make an application for patent in that country in accordance with its particular laws. Since the laws of many countries differ in various respects from the patent law of the United States, applicants are advised to seek guidance from specific foreign countries to ensure that patent rights are not lost prematurely.

Applicants also are advised that in the case of inventions made in the United States, the Director of the USPTO must issue a license before applicants can apply for a patent in a foreign country. The filing of a U.S. patent application serves as a request for a foreign filing license. The application's filing receipt contains further information and guidance as to the status of applicant's license for foreign filing.

Applicants may wish to consult the USPTO booklet, "General Information Concerning Patents" (specifically, the section entitled "Treaties and Foreign Patents") for more information on timeframes and deadlines for filing foreign patent applications. The guide is available either by contacting the USPTO Contact Center at 800-786-9199, or it can be viewed on the USPTO website at <http://www.uspto.gov/web/offices/pac/doc/general/index.html>.

For information on preventing theft of your intellectual property (patents, trademarks and copyrights), you may wish to consult the U.S. Government website, <http://www.stopfakes.gov>. Part of a Department of Commerce initiative, this website includes self-help "toolkits" giving innovators guidance on how to protect intellectual property in specific countries such as China, Korea and Mexico. For questions regarding patent enforcement issues, applicants may call the U.S. Government hotline at 1-866-999-HALT (1-866-999-4258).

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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NOT GRANTED

No license under 35 U.S.C. 184 has been granted at this time, if the phrase "IF REQUIRED, FOREIGN FILING LICENSE GRANTED" DOES NOT appear on this form. Applicant may still petition for a license under 37 CFR 5.12, if a license is desired before the expiration of 6 months from the filing date of the application. If 6 months has lapsed from the filing date of this application and the licensee has not received any indication of a secrecy order under 35 U.S.C. 181, the licensee may foreign file the application pursuant to 37 CFR 5.15(b).

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/913,669	03/06/2018	JIAN WANG	50WF-263215	7012
139780	7590	05/06/2019	EXAMINER	
Sheppard Mullin Richter & Hampton LLP			HASAN, MOHAMMED A	
Weiguo Chen			ART UNIT	PAPER NUMBER
379 Lytton Ave.			2872	
Palo Alto, CA 94301			NOTIFICATION DATE	DELIVERY MODE
			05/06/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

SheppardMullin_Pair@firsttofile.com
svpatents@shepparmullin.com
wchen@shepparmullin.com

DETAILED ACTION

Oath/Declaration

1. Oath and declaration filed on is 3/6/ 2018 accepted.

Claim Rejections - 35 USC § 103

2. In the event the determination of the status of the application as subject to AIA 35 U.S.C. 102 and 103 (or as subject to pre-AIA 35 U.S.C. 102 and 103) is incorrect, any correction of the statutory basis for the rejection will not be considered a new ground of rejection if the prior art relied upon, and the rationale supporting the rejection, would be the same under either status.

The following is a quotation of 35 U.S.C. 103 which forms the basis for all obviousness rejections set forth in this Office action:

A patent for a claimed invention may not be obtained, notwithstanding that the claimed invention is not identically disclosed as set forth in section 102, if the differences between the claimed invention and the prior art are such that the claimed invention as a whole would have been obvious before the effective filing date of the claimed invention to a person having ordinary skill in the art to which the claimed invention pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103 as being unpatentable over Lee et al (2004/0150867 A1).

Regarding claim 1, Lee et al discloses (refer to figure 1) a method of changing an optical state of an electrochromic film (107), wherein the electrochromic film (107) has a plurality of optical states, comprising: selecting a desired state of the plurality of optical states; injecting electric charges into the electrochromic film; monitoring an amount of the electric charges injected into the electrochromic film (paragraph 0012, paragraph 0105).

Lee et al discloses all of the claimed limitations except stopping injecting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state.

However, Lee teaches inject a counter ion metal and voltage source is suitable (paragraph 0108) (i.e., stopping injecting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state)

It would have been obvious to one of ordinary skill in the art at the time invention was made to provide stopping injecting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state in to the Lee et al a method of changing an optical state of an electrochromic film for the purpose of electrochemical with a controlled ratio of constituents as taught by Lee (paragraph 0082).

Regarding claim 2, Lee et al discloses wherein injecting electric charges into the electrochromic film comprises applying an external DC voltage to the electrochromic film (paragraph 0008).

Regarding claim 3, Lee et al discloses wherein injecting electric charges into the electrochromic film comprises applying an external DC current to the electrochromic film (paragraph 0008).

Regarding claim 4, Lee et al discloses wherein injecting electric charges into the electrochromic film comprises applying an external pulsed voltage to the electrochromic film (figure 1).

Regarding claim 5, Lee et al discloses wherein injecting electric charges into the electrochromic film comprises applying an external pulsed current to the electrochromic film (figure 1).

Regarding claim 6, Lee et al discloses wherein injecting electric charges into the electrochromic film comprises applying a combination of an external voltage and an external current to the electrochromic film (figure 1).

Regarding claim 7, Lee et al discloses wherein injecting electric charges into the electrochromic film comprises applying a combination of a constant power source and a pulsed power source to the electrochromic film (figure 1).

Regarding claim 8, Lee et al discloses (refer to figure 1) a method of changing an optical state of an electrochromic film, wherein the electrochromic film has a plurality of optical states, comprising: selecting a desired state of the plurality of optical states; extracting electric charges from the electrochromic film; monitoring an amount of the electric charges extracted from the electrochromic film; and stopping extracting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state (paragraph 0012, paragraph 0105).

Lee et al discloses all of the claimed limitations except stopping injecting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state.

However, Lee teaches inject a counter ion metal and voltage source is suitable (paragraph 0108) (i.e., stopping injecting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state)

It would have been obvious to one of ordinary skill in the art at the time invention was made to provide stopping injecting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state in to the Lee et al a method of changing an optical state of an electrochromic film for the purpose of electrochemical with a controlled ratio of constituents as taught by Lee (paragraph 0082).

Regarding claim 9, Lee et al discloses wherein extracting electric charges from the electrochromic film comprises applying an external DC voltage to the electrochromic film (paragraph 0008).

Regarding claim 10, Lee et al discloses wherein extracting electric charges from the electrochromic film comprises applying an external DC current to the electrochromic film (paragraph 0008).

Regarding claim 11, Lee et al discloses wherein extracting electric charges from the electrochromic film comprises applying an external pulsed voltage to the electrochromic film (figure 1).

Regarding claim 12, Lee et al discloses wherein extracting electric charges from the electrochromic film comprises applying an external pulsed current to the electrochromic film (figure 1).

Regarding claim 13, Lee et al discloses wherein extracting electric charges from the electrochromic film comprises applying a combination of an external voltage and an external current to the electrochromic film figure 1).

Regarding claim 14, Lee et al discloses wherein extracting charges into the electrochromic film comprises applying a combination of a constant power source and a pulsed power source to the electrochromic film (figure 1)

Regarding claim 15, Lee et al discloses (refer to figure 1) a method of changing an optical state of an electrochromic film, comprising: setting a plurality of pre-determined optical states of the electrochromic film; determining an amount of electric charges corresponding to each of the plurality of pre-determined optical states; selecting a desired state of the plurality of pre-determined optical states; and adjusting an amount of electric charges within the electrochromic film to the determined amount of electric charges corresponding to the selected desired state (paragraph 0012, paragraph 0105).

Lee et al discloses all of the claimed limitations except stopping injecting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state.

However, Lee teaches inject a counter ion metal and voltage source is suitable (paragraph 0108) (i.e., stopping injecting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state)

It would have been obvious to one of ordinary skill in the art at the time invention was made to provide stopping injecting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state in to the Lee et al a method of changing an optical state of an electrochromic film for the purpose of electrochemical with a controlled ratio of constituents as taught by Lee (paragraph 0082).

Regarding claim 16, Lee et al discloses wherein adjusting the amount of electric charges within the electrochromic film comprises applying an external DC voltage, an external pulsed voltage, or combination thereof to the electrochromic film (paragraph 0008).

Regarding claim 17, Lee et al discloses wherein adjusting the amount of electric charges within the electrochromic film comprises applying an external DC current, an external pulsed current, or a combination thereof to the electrochromic film (paragraph (0008).

Regarding claim 18, Lee et al discloses wherein adjusting the amount of electric charges within the electrochromic film comprises applying a combination of an external voltage and an external current to the electrochromic film (paragraph 0039).

Regarding claim 19, Lee et al discloses wherein the external voltage includes DC voltage and pulsed voltage, and the external current includes DC current and pulsed current (paragraph 0008).

Regarding claim 20, Lee et al discloses wherein the plurality of pre-determined optical states include a clear state and a dark state of the electrochromic film (figure 1).

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MOHAMMED A HASAN whose telephone number is (571)272-2331. The examiner can normally be reached on M-TH 6 AM -4 PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an

interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bumsuk Won can be reached on 571-272-2713. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/MOHAMMED A HASAN/
Primary Examiner, Art Unit 2872
5/2/2019

<i>Notice of References Cited</i>	Application/Control No. 15/913,669		Applicant(s)/Patent Under Reexamination WANG et al.	
	Examiner MOHAMMED A HASAN		Art Unit 2872	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Code-Number-Kind Code	Country	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-20040150867-A1		08-2004	Lee, Se-Hee	G02F1/1523	359/273
*	B	US-5138481-A		08-1992	Demiryont; Hulya	C23C10/18	359/269
	C						
	D						
	E						
	F						
	G						
	H						
	I						
	J						
	K						
	L						
	M						

FOREIGN PATENT DOCUMENTS

*		Document Number Code-Number-Kind Code	Country	Date MM-YYYY	Country	Name	CPC Classification
	N						
	O						
	P						
	Q						
	R						
	S						
	T						

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

U.S. Patent and Trademark Office
PTO-892 (Rev. 01-2001)

Notice of References Cited

Part of Paper No. 20190501

<i>Search Notes</i> 	Application/Control No. 15/913,669	Applicant(s)/Patent Under Reexamination WANG et al.
	Examiner MOHAMMED A HASAN	Art Unit 2872

CPC - Searched*		
Symbol	Date	Examiner
(G02F1/155 OR G02F1/153 OR G02F1/1523 OR G02F1/1533 OR G02F1/157)	05/01/2019	mh

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

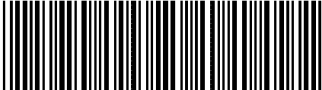
US Classification - Searched*			
Class	Subclass	Date	Examiner
359	265	05/01/2019	mh

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
east search and text search	05/01/2019	mh

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
359	265	05/01/2019	mh

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<i>Index of Claims</i> 	Application/Control No. 15/913,669	Applicant(s)/Patent Under Reexamination WANG et al.
	Examiner MOHAMMED A HASAN	Art Unit 2872

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

CLAIMS										
☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47										
CLAIM		DATE								
Final	Original	05/02/2019								
	1	✓								
	2	✓								
	3	✓								
	4	✓								
	5	✓								
	6	✓								
	7	✓								
	8	✓								
	9	✓								
	10	✓								
	11	✓								
	12	✓								
	13	✓								
	14	✓								
	15	✓								
	16	✓								
	17	✓								
	18	✓								
	19	✓								
	20	✓								

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1688	(electrochromic adj film)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/01 14:37
L2	195917	(electric adj charge)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/01 14:38
L3	356499	inject	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/01 14:38
L4	0	1 and 2 and 3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/01 14:38
L5	12	1 and 3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/01 14:39
L6	56	1 and 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/01 14:41
L7	0	3 and 6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/01 14:41
L8	2664	359/265.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/01 14:41
L9	12362	(G02F1/155 OR G02F1/153 OR G02F1/1523 OR G02F1/1533 OR G02F1/157).CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/01 14:43
L10	24	6 and 9	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/01 14:43
L11	8	5 and 9	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/05/01 14:43

5/ 1/ 2019 2:45:42 PM

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875				Application or Docket Number 15/913,669		Filing Date 03/06/2018		☐ To be Mailed		
ENTITY: ☐ LARGE ☒ SMALL ☐ MICRO										
APPLICATION AS FILED - PART I										
		(Column 1)	(Column 2)							
FOR		NUMBER FILED	NUMBER EXTRA	RATE (\$)		FEE (\$)				
☐ BASIC FEE (37 CFR 1.16(a), (b), or (c))		N/A	N/A	N/A						
☐ SEARCH FEE (37 CFR 1.16(k), (l), or (m))		N/A	N/A	N/A						
☐ EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))		N/A	N/A	N/A						
TOTAL CLAIMS (37 CFR 1.16(j))		minus 20 =	*	x \$50 =						
INDEPENDENT CLAIMS (37 CFR 1.16(h))		minus 3 =	*	x \$230 =						
☐ APPLICATION SIZE FEE (37 CFR 1.16(s))		If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$310 (\$155 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).								
☐ MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.				TOTAL						
APPLICATION AS AMENDED - PART II										
		(Column 1)	(Column 2)	(Column 3)						
AMENDMENT	07/18/2019	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)			
	Total (37 CFR 1.16(i))	* 20	Minus	** 20	= 0	x \$50 =		0		
	Independent (37 CFR 1.16(h))	* 3	Minus	*** 3	= 0	x \$230 =		0		
	☐ Application Size Fee (37 CFR 1.16(s))									
	☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))									
					TOTAL ADD'L FEE		0			
AMENDMENT		(Column 1)	(Column 2)	(Column 3)						
		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)		ADDITIONAL FEE (\$)			
	Total (37 CFR 1.16(i))	*	Minus	**	=	x \$0 =				
	Independent (37 CFR 1.16(h))	*	Minus	***	=	x \$0 =				
	☐ Application Size Fee (37 CFR 1.16(s))									
☐ FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))										
					TOTAL ADD'L FEE					
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.					LIE					
** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".					/JERMAINE D MINOR/					
*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".										
The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

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Docket No.: 50WF-263215
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
WANG et al.

Application No.: 15/913,669

Confirmation No.: 7012

Filed: March 06, 2018

Art Unit: 2872

For: METHOD FOR CHANGING STATES OF
ELECTROCHROMIC FILM

Examiner: Hasan, Mohammed A

AMENDMENT AND RESPONSE TO OFFICE ACTION

Mail Stop AF
Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

In response to the issues raised in the Office Action mailed May 06, 2019, the period for response extending to August 06, 2019, Applicant respectfully requests reconsideration of the outstanding rejections of the present application in light of the following proposed amendments and remarks.

Amendments to the Claims are reflected in the listing of claims which begins on page 2 of this paper.

Remarks/Arguments follow the amendments section of this paper.

Electronic Acknowledgement Receipt	
EFS ID:	36628016
Application Number:	15913669
International Application Number:	
Confirmation Number:	7012
Title of Invention:	METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM
First Named Inventor/Applicant Name:	JIAN WANG
Customer Number:	139780
Filer:	Weiguo Chen/Krystle Mestressat
Filer Authorized By:	Weiguo Chen
Attorney Docket Number:	50WF-263215
Receipt Date:	18-JUL-2019
Filing Date:	06-MAR-2018
Time Stamp:	16:54:00
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no
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File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1		50WF-263215_Response_NFOA.pdf	129276 1c8247ba8b89a643576858c3b851811e52bdc5ef	yes	9

	Multipart Description/PDF files in .zip description		
	Document Description	Start	End
	Applicant Arguments/Remarks Made in an Amendment	6	9
	Claims	2	5
	Amendment/Req. Reconsideration-After Non-Final Reject	1	1
Warnings:			
Information:			
Total Files Size (in bytes):		129276	
This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503. <u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application. <u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course. <u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.			

REMARKS

Applicant respectfully requests reconsideration of the application in view of the foregoing amendments and in view of the reasons that follow.

Amendments to the Claims

Claim 1-5, 8-12, and 15-17 are currently being amended. Upon entry of this amendment, claim 1-20 are pending in this application. No new matter is added by virtue of this amendment. Support for the amendments is provided, for example, on FIG. 4, FIG. 8, paragraph [0051]-[0053] and [0058]-[0059]. Reconsideration and allowance of the claims are respectfully requested in light of the following remarks.

Rejection under 35 U.S.C. § 103

Claim 1-20 are rejected under 35 U.S.C. § 103 as allegedly being unpatentable over Lee et al (US2004/0150867) hereafter Lee. Applicant respectfully disagrees with the rejections, but amended the claims as indicated below.

Applicant has further recited in independent claim 1 and 8, injecting/extracting electric charges into the electrochromic film “by a driving force, wherein the driving force includes voltage driving, current driving, and/or a combination of voltage driving and current driving,” and “determining the driving force based on the desired state of the plurality of optical states.” Applicant has also added a limitation “determining a driving force, the driving force including voltage driving, current driving, and/or a combination of voltage driving and current driving,” in independent claim 15.

Lee describes “to inject a counter ion metal species into the oxide layer of the electrode thus formed, the conductive substrate of the electrode was placed in ohmic contact with one pole of a source of voltage (emf source) which has facility for controlling the potential difference between two electrodes relative to a reference electrochemical potential.” See paragraph [0108]. Lee discloses “a thin film of electrochromic material with a controlled ratio of constituents.” See paragraph [0082]. Paragraph [0008] of Lee also describes the conductor in electrical contact with

the electrochromic material is connected to the cathode of a battery (or other emf source) to drive the material to change to a colored state.

However, Lee fails to disclose each and every feature of independent claims 1, 8 and 15, because Lee fails to teach that electric charges may be controlled by different driving forces, including voltage driving, current driving, and/or a combination of voltage driving and current driving. Rather, paragraph [0108] of Lee merely teaches a source of voltage placed with the conductive substrate for controlling the electrode relative to a reference electrochromic potential. Lee fails to teach using driving forces to manage the rate of changes of injection/extraction of electric charges in electrochromic films.

The Office contends that Lee fails to disclose “stopping injecting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state,” but states that a voltage source disclosed in paragraph [0108] is suitable. Although Lee discloses voltage source placed with electrochromic materials, Lee does not teach that relationship of current driving and voltage driving that may affect the transmission rate of electric charges to reach a pre-set amount corresponding to the desired state. The present application determines the driving source based on the desired state of the plurality of optical states, and manages transmission rates of the plurality of optical states of a electrochromic film based on different driving sources (e.g. voltage driving, current driving, or a combination of two) before the film reaches the desired state. Lee only disclose a controlled ratio of constituents for a desired optical state, but fails to teach the rate of injection/extraction of electric charges in the process of the transmission in a electrochromic film.

In summary, Lee fails to disclose different driving forces, including voltage driving, current driving, and/or a combination of voltage driving and current driving, that control the transmission rate of a plurality of optical states in electrochromic films. At least in view of the foregoing, Lee fails to disclose the features recited in each of independent claim 1, 8, and 15.

Therefore, the above features are not disclosed or suggested by the cited reference, and it is therefore believed that claims 1, 8, and 15 are both novel and inventive. Claim 2-7, 9-14, and

16-20 depend from claim 1, 8, and 15, respectively, and thus dependent claims are believed to be patentable for at least the same reasons. Withdrawal of this rejection is respectfully requested.

CONCLUSION

Applicant believes that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 50-4561. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicant hereby petitions for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extension fees to Deposit Account No. 50-4561.

Respectfully submitted,

Dated: July 17, 2019

By /Weiguo Chen/
Weiguo Chen
Registration No.: 61,878
Attorney for Applicant
SHEPPARD MULLIN RICHTER & HAMPTON LLP
379 Lytton Avenue
Palo Alto, California 94301
(650) 815-2692
Customer Number: 139780

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims:

1. (Currently Amended) A method of changing an optical state of an electrochromic film, wherein the electrochromic film has a plurality of optical states, comprising:
 - selecting a desired state of the plurality of optical states;
 - injecting electric charges into the electrochromic film by a driving force, wherein the driving force includes voltage driving, current driving, and/or a combination of voltage driving and current driving;
 - determining the driving force based on the desired state of the plurality of optical states;
 - monitoring an amount of the electric charges injected into the electrochromic film; and
 - stopping injecting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state.
2. (Currently Amended) The method of claim 1, wherein the voltage driving ~~injecting electric charges into the electrochromic film~~ comprises applying an external DC voltage to the electrochromic film.
3. (Currently Amended) The method of claim 1, wherein the current driving ~~injecting electric charges into the electrochromic film~~ comprises applying an external DC current to the electrochromic film.
4. (Currently Amended) The method of claim 1, wherein the voltage driving ~~injecting electric charges into the electrochromic film~~ comprises applying an external pulsed voltage to the electrochromic film.

5. (Currently Amended) The method of claim 1, wherein ~~the current driving injecting electric charges into the electrochromic film~~ comprises applying an external pulsed current to the electrochromic film.
6. (Original) The method of claim 1, wherein injecting electric charges into the electrochromic film comprises applying a combination of an external voltage and an external current to the electrochromic film.
7. (Original) The method of claim 1, wherein injecting electric charges into the electrochromic film comprises applying a combination of a constant power source and a pulsed power source to the electrochromic film.
8. (Currently Amended) A method of changing an optical state of an electrochromic film, wherein the electrochromic film has a plurality of optical states, comprising:
 - selecting a desired state of the plurality of optical states;
 - extracting electric charges from the electrochromic film by a driving force, wherein the driving force includes voltage driving, current driving, and/or a combination of voltage driving and current driving;
 - determining the driving force based on the desired state of the plurality of optical states;
 - monitoring an amount of the electric charges extracted from the electrochromic film; and
 - stopping extracting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state.
9. (Currently Amended) The method of claim 8, wherein ~~the voltage driving extracting electric charges from the electrochromic film~~ comprises applying an external DC voltage to the electrochromic film.
10. (Currently Amended) The method of claim 8, wherein ~~the current driving extracting electric charges from the electrochromic film~~ comprises applying an external DC current to the electrochromic film.

11. (Currently Amended) The method of claim 8, wherein the voltage driving ~~extracting electric charges from the electrochromic film~~ comprises applying an external pulsed voltage to the electrochromic film.
12. (Currently Amended) The method of claim 8, wherein the current driving ~~extracting electric charges from the electrochromic film~~ comprises applying an external pulsed current to the electrochromic film.
13. (Original) The method of claim 8, wherein extracting electric charges from the electrochromic film comprises applying a combination of an external voltage and an external current to the electrochromic film.
14. (Original) The method of claim 8, wherein extracting charges into the electrochromic film comprises applying a combination of a constant power source and a pulsed power source to the electrochromic film.
15. (Currently Amended) A method of changing an optical state of an electrochromic film, comprising:
 setting a plurality of pre-determined optical states of the electrochromic film;
 determining an amount of electric charges corresponding to each of the plurality of pre-determined optical states;
 selecting a desired state of the plurality of pre-determined optical states; and
 determining a driving force, wherein the driving force includes voltage driving, current driving, and/or a combination of voltage driving and current driving;
 adjusting an amount of electric charges within the electrochromic film to the determined amount of electric charges corresponding to the selected desired state.
16. (Currently Amended) The method of claim 15, wherein adjusting the amount of electric charges within the electrochromic film comprises applying the voltage driving, the voltage

driving including an external DC voltage, an external pulsed voltage, or combination thereof to the electrochromic film.

17. (Currently Amended) The method of claim 15, wherein adjusting the amount of electric charges within the electrochromic film comprises applying the current driving, the current driving including an external DC current, an external pulsed current, or a combination thereof to the electrochromic film.

18. (Original) The method of claim 15, wherein adjusting the amount of electric charges within the electrochromic film comprises applying a combination of an external voltage and an external current to the electrochromic film.

19. (Original) The method of claim 18, wherein the external voltage includes DC voltage and pulsed voltage, and the external current includes DC current and pulsed current.

20. (Original) The method of claim 15, wherein the plurality of pre-determined optical states include a clear state and a dark state of the electrochromic film.



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
15/913,669	03/06/2018	JIAN WANG	50WF-263215

CONFIRMATION NO. 7012

PUBLICATION NOTICE

139780
Sheppard Mullin Richter & Hampton LLP
Weiguo Chen
379 Lytton Ave.
Palo Alto, CA 94301



Title:METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM

Publication No.US-2019-0278147-A1

Publication Date:09/12/2019

NOTICE OF PUBLICATION OF APPLICATION

The above-identified application will be electronically published as a patent application publication pursuant to 37 CFR 1.211, et seq. The patent application publication number and publication date are set forth above.

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NOTICE OF ALLOWANCE AND FEE(S) DUE

139780 7590 09/13/2019
Sheppard Mullin Richter & Hampton LLP
Weiguo Chen
379 Lytton Ave.
Palo Alto, CA 94301

EXAMINER
HASAN, MOHAMMED A

ART UNIT PAPER NUMBER
2872

DATE MAILED: 09/13/2019

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/913,669	03/06/2018	JIAN WANG	50WF-263215	7012

TITLE OF INVENTION: METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	12/13/2019

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

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By fax, send to: (571)-273-2885

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139780 7590 09/13/2019
Sheppard Mullin Richter & Hampton LLP
Weiguo Chen
379 Lytton Ave.
Palo Alto, CA 94301

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

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I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being transmitted to the USPTO via EFS-Web or by facsimile to (571) 273-2885, on the date below.

(Typed or printed name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/913,669	03/06/2018	JIAN WANG	50WF-263215	7012

TITLE OF INVENTION: METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	SMALL	\$500	\$0.00	\$0.00	\$500	12/13/2019

EXAMINER	ART UNIT	CLASS-SUBCLASS
HASAN, MOHAMMED A	2872	359-265000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-09 or more recent) attached. **Use of a Customer Number is required.**

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1 _____

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3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document must have been previously recorded, or filed for recordation, as set forth in 37 CFR 3.11 and 37 CFR 3.81(a). Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

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Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. Fees submitted: ☐ Issue Fee ☐ Publication Fee (if required) ☐ Advance Order - # of Copies _____

4b. Method of Payment: (Please first reapply any previously paid fee shown above)

☐ Electronic Payment via EFS-Web ☐ Enclosed check ☐ Non-electronic payment by credit card (Attach form PTO-2038)

☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment to Deposit Account No. _____

5. **Change in Entity Status** (from status indicated above)

☐ Applicant certifying micro entity status. See 37 CFR 1.29

☐ Applicant asserting small entity status. See 37 CFR 1.27

☐ Applicant changing to regular undiscounted fee status.

NOTE: Absent a valid certification of Micro Entity Status (see forms PTO/SB/15A and 15B), issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment.

NOTE: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.

NOTE: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.

NOTE: This form must be signed in accordance with 37 CFR 1.31 and 1.33. See 37 CFR 1.4 for signature requirements and certifications.

Authorized Signature _____ Date _____

Typed or printed name _____ Registration No. _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/913,669	03/06/2018	JIAN WANG	50WF-263215	7012
139780 7590 09/13/2019 Sheppard Mullin Richter & Hampton LLP Weiguo Chen 379 Lytton Ave. Palo Alto, CA 94301			EXAMINER HASAN, MOHAMMED A	
			ART UNIT 2872	PAPER NUMBER
DATE MAILED: 09/13/2019				

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (Applications filed on or after May 29, 2000)

The Office has discontinued providing a Patent Term Adjustment (PTA) calculation with the Notice of Allowance.

Section 1(h)(2) of the AIA Technical Corrections Act amended 35 U.S.C. 154(b)(3)(B)(i) to eliminate the requirement that the Office provide a patent term adjustment determination with the notice of allowance. See Revisions to Patent Term Adjustment, 78 Fed. Reg. 19416, 19417 (Apr. 1, 2013). Therefore, the Office is no longer providing an initial patent term adjustment determination with the notice of allowance. The Office will continue to provide a patent term adjustment determination with the Issue Notification Letter that is mailed to applicant approximately three weeks prior to the issue date of the patent, and will include the patent term adjustment on the patent. Any request for reconsideration of the patent term adjustment determination (or reinstatement of patent term adjustment) should follow the process outlined in 37 CFR 1.705.

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

OMB Clearance and PRA Burden Statement for PTOL-85 Part B

The Paperwork Reduction Act (PRA) of 1995 requires Federal agencies to obtain Office of Management and Budget approval before requesting most types of information from the public. When OMB approves an agency request to collect information from the public, OMB (i) provides a valid OMB Control Number and expiration date for the agency to display on the instrument that will be used to collect the information and (ii) requires the agency to inform the public about the OMB Control Number's legal significance in accordance with 5 CFR 1320.5(b).

The information collected by PTOL-85 Part B is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.** Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No. 15/913,669	Applicant(s) WANG et al.	
	Examiner MOHAMMED A HASAN	Art Unit 2872	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7/18/2019.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 1-20 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:
a) ☐ All b) ☐ Some *c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)	5. ☐ Examiner's Amendment/Comment
2. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____.	6. ☒ Examiner's Statement of Reasons for Allowance
3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____.	7. ☐ Other _____.
4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____.	

	/MOHAMMED A HASAN/ Primary Examiner, Art Unit 2872
--	---

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-20 are allowed.
2. The following is an examiner's statement of reasons for allowance: The prior art taken either singularly or in a combination fails to anticipate or fairly suggest the limitations of the independent claims, in such a manner that rejection under 35 U.S.C. 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in independent claims 1, 8 and 15, which include, a method of changing an optical state of an electrochromic film, wherein the electrochromic film has a plurality of optical states having injecting electric charges into the electrochromic film by a driving force and the driving force includes voltage driving, current driving, and/or a combination and determining the driving force based on the desired state of the plurality of optical states and monitoring an amount of the electric charges injected into the electrochromic film and stopping injecting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MOHAMMED A HASAN whose telephone number is (571)272-2331. The examiner can normally be reached on M-TH 6 AM -4 PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Bumsuk Won can be reached on 571-272-2713. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 15/913,669
Art Unit: 2872

Page 4

/MOHAMMED A HASAN/
Primary Examiner, Art Unit 2872
9/4/2019

<i>Search Notes</i> 	Application/Control No. 15/913,669	Applicant(s)/Patent Under Reexamination WANG et al.
	Examiner MOHAMMED A HASAN	Art Unit 2872

CPC - Searched*		
Symbol	Date	Examiner
(G02F1/155 OR G02F1/153 OR G02F1/1523 OR G02F1/1533 OR G02F1/157)	05/01/2019	mh
G02F1/155 OR G02F1/153 OR G02F1/1523 OR G02F1/1533 OR G02F1/157)	09/04/2019	mh

CPC Combination Sets - Searched*		
Symbol	Date	Examiner

US Classification - Searched*			
Class	Subclass	Date	Examiner
359	265	05/01/2019	mh
359	265	09/04/2019	mh

* See search history printout included with this form or the SEARCH NOTES box below to determine the scope of the search.

Search Notes		
Search Notes	Date	Examiner
east search and text search	05/01/2019	mh
east search and text search	09/04/2019	mh

Interference Search			
US Class/CPC Symbol	US Subclass/CPC Group	Date	Examiner
359	265	05/01/2019	mh
359	265	09/04/2019	mh

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Issue Classification 	Application/Control No. 15/913,669	Applicant(s)/Patent Under Reexamination WANG et al.
	Examiner MOHAMMED A HASAN	Art Unit 2872

CPC						
Symbol					Type	Version
G02F		1		1525	F	2013-01-01
G02F		1		1503	I	2019-01-01

CPC Combination Sets						
Symbol				Type	Set	Ranking

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	20	
/MOHAMMED A HASAN/ Primary Examiner, Art Unit 2872	04 September 2019	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1 and 2

U.S. Patent and Trademark Office

Part of Paper No.: 20190904

Issue Classification 	Application/Control No. 15/913,669	Applicant(s)/Patent Under Reexamination WANG et al.
	Examiner MOHAMMED A HASAN	Art Unit 2872

INTERNATIONAL CLASSIFICATION			
CLAIMED			
G02F		1	1525
NON-CLAIMED			

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS
359	265

CROSS REFERENCES(S)						
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	20	
/MOHAMMED A HASAN/ Primary Examiner, Art Unit 2872	04 September 2019	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1 and 2

U.S. Patent and Trademark Office

Part of Paper No.: 20190904

Issue Classification 	Application/Control No. 15/913,669	Applicant(s)/Patent Under Reexamination WANG et al.
	Examiner MOHAMMED A HASAN	Art Unit 2872

☐ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47															
CLAIMS															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
1	1	10	10	19	19										
2	2	11	11	20	20										
3	3	12	12												
4	4	13	13												
5	5	14	14												
6	6	15	15												
7	7	16	16												
8	8	17	17												
9	9	18	18												

NONE (Assistant Examiner) _____ (Date) _____		Total Claims Allowed: 20	
/MOHAMMED A HASAN/ Primary Examiner, Art Unit 2872 (Primary Examiner) _____ (Date) _____		04 September 2019 (Date)	O.G. Print Claim(s) 1 O.G. Print Figure 1 and 2

U.S. Patent and Trademark Office

Part of Paper No.: 20190904

Bibliographic Data

Application No: 15/913,669

Foreign Priority claimed: ☐ Yes ☒ No

35 USC 119 (a-d) conditions met: ☐ Yes ☒ No ☐ Met After Allowance

Verified and Acknowledged: /MOHAMMED A HASAN/

Examiner's Signature

Initials

Title:

METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
03/06/2018	359	2872	50WF-263215
RULE			

APPLICANTS

FURCIFER INC., Menlo Park, CA, UNITED STATES

INVENTORS

JIAN WANG MENLO PARK, CA, UNITED STATES

YAN ZHOU MENLO PARK, CA, UNITED STATES

CONTINUING DATA

FOREIGN APPLICATIONS

IF REQUIRED, FOREIGN LICENSE GRANTED**

04/03/2018

** SMALL ENTITY **

STATE OR COUNTRY

UNITED STATES

ADDRESS

Sheppard Mullin Richter & Hampton LLP

Weiguo Chen

379 Lytton Ave.

Palo Alto, CA 94301

UNITED STATES

FILING FEE RECEIVED

\$785

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1816	(electrochromic adj film)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/04 16:12
L2	199688	(electric adj charge)	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/04 16:13
L3	367159	inject	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/04 16:13
L4	0	1 and 2 and 3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/04 16:13
L5	14	1 and 3	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/04 16:13
L6	58	1 and 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/04 16:14
L7	0	3 and 6	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/04 16:15
L8	2732	359/265.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/04 16:15
L9	12173	(G02F1/155 OR G02F1/153 OR G02F1/1523 OR G02F1/157 OR G02F1/1533).CPC.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/04 16:16
L10	10	5 and 9	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/04 16:16
L11	10	3 and 10	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/04 16:16
L12	0	2 and 11	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/04 16:16

9/ 4/ 2019 4:17:21 PM

EAST Search History**EAST Search History (Prior Art)**

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	(electrochromic adj film) with (electric adj charge) with inject with pre-set.clm.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/04 16:52
L2	2732	359/265.ccls.	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/04 16:52
L3	0	1 and 2	US-PGPUB; USPAT; USOCR; FPRS; EPO; JPO; DERWENT; IBM_TDB	OR	OFF	2019/09/04 16:52

9/ 4/ 2019 4:53:05 PM**C:\ Users\ mhasan\ Documents\ EAST\ Workspaces\ interference search.pts**

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	15913669
	Filing Date	2018-03-06
	First Named Inventor	Jian Wang
	Art Unit	2872
	Examiner Name	Mohammed A. Hasan
	Attorney Docket Number	50WF-263215

U.S. PATENTS							Remove	
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	5365365		1994-11-15	Ripoche et al.			
If you wish to add additional U.S. Patent citation information please click the Add button.							Add	
U.S. PATENT APPLICATION PUBLICATIONS							Remove	
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
	1	20160202590		2016-07-14	Ziebarth et al.			
	2	20170298682		2017-10-19	Wang et al.			
If you wish to add additional U.S. Published Application citation information please click the Add button.							Add	
FOREIGN PATENT DOCUMENTS							Remove	
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							
If you wish to add additional Foreign Patent Document citation information please click the Add button.							Add	
NON-PATENT LITERATURE DOCUMENTS							Remove	

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		15913669
	Filing Date		2018-03-06
	First Named Inventor	Jian Wang	
	Art Unit	2872	
	Examiner Name	Mohammed A. Hasan	
	Attorney Docket Number	50WF-263215	

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	Search Report for European Application No. 19160709.2, mailed on July 12, 2019, 11 pages.	

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
--------------------	--	-----------------	--

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	15913669
	Filing Date	2018-03-06
	First Named Inventor	Jian Wang
	Art Unit	2872
	Examiner Name	Mohammed A. Hasan
	Attorney Docket Number	50WF-263215

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

☒ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Weiguo Chen/	Date (YYYY-MM-DD)	2019-10-14
Name/Print	Weiguo Chen	Registration Number	61878

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. **DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal				
Application Number:		15913669		
Filing Date:		06-Mar-2018		
Title of Invention:		METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM		
First Named Inventor/Applicant Name:		JIAN WANG		
Filer:		Weiguo Chen/Krystle Mestressat		
Attorney Docket Number:		50WF-263215		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
SUBMISSION- INFORMATION DISCLOSURE STMT	2806	1	120	120
Total in USD (\$)				120

Electronic Acknowledgement Receipt	
EFS ID:	37450145
Application Number:	15913669
International Application Number:	
Confirmation Number:	7012
Title of Invention:	METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM
First Named Inventor/Applicant Name:	JIAN WANG
Customer Number:	139780
Filer:	Weiguo Chen/Krystle Mestressat
Filer Authorized By:	Weiguo Chen
Attorney Docket Number:	50WF-263215
Receipt Date:	14-OCT-2019
Filing Date:	06-MAR-2018
Time Stamp:	17:16:23
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$120
RAM confirmation Number	E20190DH17120222
Deposit Account	504561
Authorized User	Krystle Mestressat
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)
 37 CFR 1.20 (Post Issuance fees)
 37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Information Disclosure Statement (IDS) Form (SB08)	50WF-263215_IDS.pdf	1034379	no	4
			9c59f280e0308e78234324d17d66fb9a42688698		

Warnings:

Information:

2	Non Patent Literature	50WF-263215_NPL.pdf	431426	no	11
			46f5c37625890bb1f6b7a93818cc163edc527328		

Warnings:

Information:

3	Fee Worksheet (SB06)	fee-info.pdf	30334	no	2
			d22a323a692fec1471350106919771dfeed648378		

Warnings:

Information:

Total Files Size (in bytes):	1496139
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This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/913,669	03/06/2018	JIAN WANG	50WF-263215	7012
139780	7590	11/12/2019	EXAMINER	
Sheppard Mullin Richter & Hampton LLP			HASAN, MOHAMMED A	
Weiguo Chen			ART UNIT	PAPER NUMBER
379 Lytton Ave.			2872	
Palo Alto, CA 94301			NOTIFICATION DATE	DELIVERY MODE
			11/12/2019	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

SheppardMullin_Pair@firsttofile.com
svpatents@sheppardmullin.com
wchen@sheppardmullin.com

Corrected Notice of Allowability	Application No. 15/913,669	Applicant(s) WANG et al.	
	Examiner MOHAMMED A HASAN	Art Unit 2872	AIA (FITF) Status Yes

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 7/18/2019.
☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on _____.

2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on _____; the restriction requirement and election have been incorporated into this action.

3. ☒ The allowed claim(s) is/are 1-20 . As a result of the allowed claim(s), you may be eligible to benefit from the **Patent Prosecution Highway** program at a participating intellectual property office for the corresponding application. For more information, please see http://www.uspto.gov/patents/init_events/pph/index.jsp or send an inquiry to PPHfeedback@uspto.gov.

4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

Certified copies:
a) ☐ All b) ☐ Some *c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____ .

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____ .

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892) 2. ☒ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____ 3. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material _____ 4. ☐ Interview Summary (PTO-413), Paper No./Mail Date. _____	5. ☐ Examiner's Amendment/Comment 6. ☒ Examiner's Statement of Reasons for Allowance 7. ☐ Other _____
---	---

/MOHAMMED A HASAN/
 Primary Examiner, Art Unit 2872

DETAILED ACTION

Information Disclosure Statement

1. The prior art documents submitted by application in the Information Disclosure Statement filed on 10/14/2019 have all been considered and made of record (note the attached copy of form PTO – 1449).

Allowable Subject Matter

2. Claims 1-20 are allowed.

3. The following is an examiner's statement of reasons for allowance: The prior art taken either singularly or in a combination fails to anticipate or fairly suggest the limitations of the independent claims, in such a manner that rejection under 35 U.S.C. 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed features as presented in independent claims 1 ,8 and 15 , which include, a method of changing an optical state of an electrochromic film, wherein the electrochromic film has a plurality of optical states having injecting electric charges into the electrochromic film by a driving force and the driving force includes voltage driving , current driving, and/or a combination and determining the driving force based on the desired state of the plurality of optical states and monitoring an amount of the electric charges injected into the electrochromic film and stopping injecting the electric charges when the electric charges reaches a pre-set amount corresponding to the desired state.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on

Statement of Reasons for Allowance.”

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MOHAMMED A HASAN whose telephone number is (571)272-2331. The examiner can normally be reached on M-TH 6 AM -4 PM.

Examiner interviews are available via telephone, in-person, and video conferencing using a USPTO supplied web-based collaboration tool. To schedule an interview, applicant is encouraged to use the USPTO Automated Interview Request (AIR) at <http://www.uspto.gov/interviewpractice>.

If attempts to reach the examiner by telephone are unsuccessful, the examiner’s supervisor, Bumsuk Won can be reached on 571-272-2713. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 15/913,669
Art Unit: 2872

Page 4

/MOHAMMED A HASAN/
Primary Examiner, Art Unit 2872
11/6/2019

Receipt date: 10/14/2019

15/913,669 - GAU: 2872

Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08a (02-18)

Approved for use through 11/30/2020. OMB 0651-0031

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	15913669
	Filing Date	2018-03-06
	First Named Inventor	Jian Wang
	Art Unit	2872
	Examiner Name	Mohammed A. Hasan
	Attorney Docket Number	50WF-263215

U.S.PATENTS						Remove
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	5365365		1994-11-15	Ripoche et al.	

If you wish to add additional U.S. Patent citation information please click the Add button.

Add

U.S.PATENT APPLICATION PUBLICATIONS						Remove
Examiner Initial*	Cite No	Publication Number	Kind Code ¹	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear
	1	20160202590		2016-07-14	Ziebarth et al.	
	2	20170298682		2017-10-19	Wang et al.	

If you wish to add additional U.S. Published Application citation information please click the Add button.

Add

FOREIGN PATENT DOCUMENTS								Remove
Examiner Initial*	Cite No	Foreign Document Number ³	Country Code ²ⁱ	Kind Code ⁴	Publication Date	Name of Patentee or Applicant of cited Document	Pages,Columns,Lines where Relevant Passages or Relevant Figures Appear	T ⁵
	1							

If you wish to add additional Foreign Patent Document citation information please click the Add button

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NON-PATENT LITERATURE DOCUMENTS							Remove
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	15913669
Filing Date	2018-03-06
First Named Inventor	Jian Wang
Art Unit	2872
Examiner Name	Mohammed A. Hasan
Attorney Docket Number	50WF-263215

Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵
	1	Search Report for European Application No. 19160709.2, mailed on July 12, 2019, 11 pages.	

If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature	/MOHAMMED A HASAN/	Date Considered	11/06/2019
--------------------	--------------------	-----------------	------------

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	15913669
Filing Date	2018-03-06
First Named Inventor	Jian Wang
Art Unit	2872
Examiner Name	Mohammed A. Hasan
Attorney Docket Number	50WF-263215

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

- ☒ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

- ☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

See attached certification statement.

The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.

A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	/Weiguo Chen/	Date (YYYY-MM-DD)	2019-10-14
Name/Print	Weiguo Chen	Registration Number	61878

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether the Freedom of Information Act requires disclosure of these records.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspections or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

~~ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /M.A.H/~~

Document Description: Issue Fee Payment (PTO-85B)

Issue Fee Transmittal Form

Application Number	Filing Date	First Named Inventor	Atty. Docket No.	Confirmation No.
15913669	06-Mar-2018	JIAN WANG	50WF-263215	7012

TITLE OF INVENTION :

METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM

Entity Status	Application Type	Art Unit	Class - Subclass	EXAMINER
Small	Utility under 35 USC 111(a)	2872	265000	MOHAMMED HASAN
Issue Fee Due	Publication Due	Total Fee(s) Due	Date Due	Prev. Paid Fee
\$500	\$0	\$500	13-Dec-2019	\$0

1.Change of Correspondence Address and/or Indication Of Fee Address (37 CFR 1.33 & 1.363)

Current Correspondence Address:	Current Indicated Fee Address :
139780 Sheppard Mullin Richter & Hampton LLP Weiguo Chen 379 Lytton Ave. Palo Alto CA 94301 UNITED STATES 650-815-2692 ~~SheppardMullin_Pair@firsttofile.com~~	
☐ Change of correspondence address requested, system generated AIA/122-EFS form attached	☐ Fee Address indication requested, system generated SB/47-EFS form attached

2.Entity Status**Change in Entity Status**

Applicant certifying micro entity status; system generated Micro Entity certification form attached. See 37 CFR 1.29.

Note: Absent a valid certification of micro entity status, issue fee payment in the micro entity amount will not be accepted at the risk of application abandonment. If this box is checked, you will be prompted to choose a micro entity status on the gross income basis (37 CFR 1.29(a)) or the institution of higher education basis (37 CFR 1.29(d)), and make the applicable certification online.



Applicant asserting small entity status. See 37 CFR 1.27.

Note: If the application was previously under micro entity status, checking this box will be taken to be a notification of loss of entitlement to micro entity status.



Applicant changing to regular undiscounted fee status.

Note: Checking this box will be taken to be a notification of loss of entitlement to small or micro entity status, as applicable.



Document Description: Issue Fee Payment (PTO-85B)

3.The Following Fee(s) Are Submitted:☒ Issue Fee☐ I authorize USPTO to apply my previously paid issue fee to the current fees due☐ Publication Fee☐ The Director is hereby authorized to apply my previously paid issue fee to the current fee due and to charge deficient fees to Deposit Account Number _____☐ Advance Order - # of copies _____

If **in addition to** the payment of the issue fee amount submitted with this form, there are any discrepancies in any amount(s) due, the Director is authorized to charge any deficiency, or credit any overpayment, to Deposit Account Number 504581.

☒ The **issue fee must be submitted** with this form. **If payment of the issue fee does not accompany this form, checking this box and providing a deposit account number will NOT be effective to satisfy full payment of the fee(s) due.**

4.Firm and/or Attorney Names To Be Printed**NOTE: If no name is listed, no name will be printed**

For printing on the patent front page, list to be displayed as entered

1.

2.

3.

5.Assignee Name(s) and Residence Data To Be Printed

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

Name	City	State	Country	Category
Furcifer Inc.	Fremont	CALIFORNIA	united states	corporation

6.Signature

I certify, in accordance with 37 CFR 1.4(d)(4) that I am an attorney or agent registered to practice before the Patent and Trademark Office who has filed and has been granted power of attorney in this application. I also certify that this Fee(s) Transmittal form is being transmitted to the USPTO via EFS-WEB on the date indicated below.

Signature	/Weiguo Chen/	Date	12-11-2019
Name	Weiguo Chen	Registration Number	61878

Electronic Patent Application Fee Transmittal				
Application Number:		15913669		
Filing Date:		06-Mar-2018		
Title of Invention:		METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM		
First Named Inventor/Applicant Name:		JIAN WANG		
Filer:		Weiguo Chen/Krystle Mestressat		
Attorney Docket Number:		50WF-263215		
Filed as Small Entity				
Filing Fees for Utility under 35 USC 111(a)				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
UTILITY APPL ISSUE FEE	2501	1	500	500
PUBL. FEE- EARLY, VOLUNTARY, OR NORMAL	1504	1	0	0
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				500

Electronic Acknowledgement Receipt	
EFS ID:	38001603
Application Number:	15913669
International Application Number:	
Confirmation Number:	7012
Title of Invention:	METHOD FOR CHANGING STATES OF ELECTROCHROMIC FILM
First Named Inventor/Applicant Name:	JIAN WANG
Customer Number:	139780
Filer:	Weiguo Chen/Krystle Mestressat
Filer Authorized By:	Weiguo Chen
Attorney Docket Number:	50WF-263215
Receipt Date:	11-DEC-2019
Filing Date:	06-MAR-2018
Time Stamp:	16:30:35
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$ 500
RAM confirmation Number	E2019BAG30334408
Deposit Account	504561
Authorized User	Krystle Mestressat
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1	Issue Fee Payment (PTO-85B)	Web85b.pdf	45992	no	2
			9f4e0ee60fbaaf44ab9cf0541fdf11fa5dfae0d6		
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2	Fee Worksheet (SB06)	fee-info.pdf	32073	no	2
			d1546a31e13e5c00243ccca2aa57f080ad563a57		
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15/913,669	01/21/2020	10539851	50WF-263215	7012

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ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b) (application filed on or after May 29, 2000)

The Patent Term Adjustment is 0 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

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