UNITED STATES PATENT AND TRADEMARK OFFICE

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NOTICE OF ALLOWANCE AND FEE(S) DUE

23413 7590 11/16/2018
CANTOR COLBURN LLP
20 Church Street
22nd Floor
Hartford, CT 06103

EXAMINER
MOWLA, GOLAM

ART UNIT	PAPER NUMBER
1721	

DATE MAILED: 11/16/2018

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
15/241,782	08/19/2016	Huisheng Peng	YPL1701US	4648

TITLE OF INVENTION: FIBER-SHAPED ELECTRIC ENERGY HARVESTING AND STORAGE DEVICE AND METHOD OF MANUFACTURING THE SAME

APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1000	$0.00	$0.00	$1000	02/19/2019

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.

HOW TO REPLY TO THIS NOTICE:

I. Review the ENTITY STATUS shown above. If the ENTITY STATUS is shown as SMALL or MICRO, verify whether entitlement to that entity status still applies.

If the ENTITY STATUS is the same as shown above, pay the TOTAL FEE(S) DUE shown above.

If the ENTITY STATUS is changed from that shown above, on PART B - FEE(S) TRANSMITTAL, complete section number 5 titled "Change in Entity Status (from status indicated above)".

For purposes of this notice, small entity fees are 1/2 the amount of undiscounted fees, and micro entity fees are 1/2 the amount of small entity fees.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Maintenance fees are due in utility patents issuing on applications filed on or after Dec. 12, 1980. It is patentee's responsibility to ensure timely payment of maintenance fees when due. More information is available at www.uspto.gov/PatentMaintenanceFees.

PTOL-85 (Rev. 02/11)

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), by mail or fax, or via EFS-Web.

By mail, send to: Mail Stop ISSUE FEE
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

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

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

23413 7590 11/16/2018

CANTOR COLBURN LLP
20 Church Street
22nd Floor
Hartford, CT 06103

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.

Certificate of Mailing or Transmission

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.
15/241,782	08/19/2016	Huisheng Peng	YPL1701US	4648

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APPLN. TYPE	ENTITY STATUS	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	UNDISCOUNTED	$1000	$0.00	$0.00	$1000	02/19/2019

EXAMINER	ART UNIT	CLASS-SUBCLASS
MOWLA, GOLAM	1721	136-244000

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.**

2. For printing on the patent front page, list
(1) The names of up to 3 registered patent attorneys or agents OR, alternatively,
(2) The name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1_____
2_____
3_____

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 (B) RESIDENCE: (CITY and STATE OR COUNTRY)

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

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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. 15/241,782	Applicant(s) Peng et al.	
	Examiner GOLAM MOWLA	Art Unit 1721	AIA 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 07/13/2018.
   ☐ 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 1-18 . 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 areply 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 08/19/2016.
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 _____.

/GOLAM MOWLA/
Primary Examiner, Art Unit 1721

DETAILED ACTION

Notice of Pre-AIA or AIA Status

1. The present application, filed on or after March 16, 2013, is being examined under the first inventor to file provisions of the AIA.

Election/Restrictions

2. Applicant's election without traverse of Group I, claims 1-1 in the reply filed on 07/13/2018 is acknowledged.

3. Claims 12-18 are rejoined as these claims require all the feature of allowable claim 1.

Allowable Subject Matter

4. Claims 1-18 are allowed.

5. The following is an examiner's statement of reasons for allowance:

- US 8,542,478 B2 to Momo et al. discloses substrate (102) on which capacitor (105) is formed on one side and solar cell (200) is formed on other side (see fig. 8), and thus, fails to disclose that capacitor surrounds the substrate, and further the solar cell surrounds the substrate.
- US 2010/0307559 A1 discloses capacitor 7090 and solar cells 7096 (fig. 23). However, this reference also fails to disclose that capacitor surrounds the substrate, and further the solar cell surrounds the substrate.

- Pan et al. ("Miniature wire-shaped solar cells, electrochemical capacitors and lithium-ion batteries") discloses solar cell is formed at one end of the fiber and the capacitor is formed at other end of the fiber (see fig. 8). However, this reference also fails to disclose that capacitor surrounds the substrate, and further the solar cell surrounds the substrate.

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."

Correspondence/Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to GOLAM MOWLA whose telephone number is (571)270-5268. The examiner can normally be reached on M-Th, 7am - 4pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jennifer Michener can be reached on 571-272-1424. 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.

/GOLAM MOWLA/
Primary Examiner, Art Unit 1721

Notice of References Cited	Application/Control No. 15/241,782	Applicant(s)/Patent Under Reexamination Peng et al.	
	Examiner GOLAM MOWLA	Art Unit 1721	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	CPC Classification	US Classification
*	A	US-8542478-B2	09-2013	Momo; Junpei	H01G11/08	136/244
*	B	US-20100307559-A1	12-2010	YAMAZAKI; Shunpei	H01L31/048	136/244
*	C	US-20160111564-A1	04-2016	Gidwani; Jawahar M.	H01M8/04067	429/434
*	D	US-20100216023-A1	08-2010	Wei; Di	H01G9/058	429/220
*	E	US-7535019-B1	05-2009	Sager; Brian M.	D01D5/34	136/252
*	F	US-7635905-B2	12-2009	Kim, II; John	H01L31/035281	257/432
*	G	US-20100258160-A1	10-2010	Wang; Zhong L.	H01G9/2086	136/246
*	H	US-8463092-B2	06-2013	Farahi; Faramarz	B32B5/022	136/243
*	I	US-20160254407-A1	09-2016	WANG; Shih-Yuan	H01L31/035281	136/256
*	J	US-20090176159-A1	07-2009	Zhamu; Aruna	H01M4/483	429/222
*	K	US-20090186276-A1	07-2009	Zhamu; Aruna	H01M4/045	429/221
	L					
	M					

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	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	Pan et al., Miniature wire-shaped solar cells, electrochemical capacitors and lithium-ion batteries, Volume 17, Issue 6, July–August 2014, Pages 276-284.
	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.

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/241,782	Peng et al.
	Examiner	**Art Unit**
	GOLAM MOWLA	1721

CPC - Searched*		
Symbol	**Date**	**Examiner**
H01M10/0525,058,465.cpc.	11/13/2018	GM
H01M2004/025.cpc.	11/13/2018	GM
H02S30/20.cpc.	11/13/2018	GM
H01G9/2086,2004,2022,2031,2059.cpc.	11/13/2018	GM
H02S40/38.cpc.	11/13/2018	GM

CPC Combination Sets - Searched*		
Symbol	**Date**	**Examiner**

US Classification - Searched*			
Class	**Subclass**	**Date**	**Examiner**

* 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 Text Search	11/13/2018	GM
Inventor and Assignee Search	11/13/2018	GM
CPC Search	11/13/2018	GM
Google Scholar Search	11/13/2018	GM
H01M10/0525,058,465.cpc.	11/13/2018	GM
H01M2004/025.cpc.	11/13/2018	GM
H02S30/20.cpc.	11/13/2018	GM
H01G9/2086,2004,2022,2031,2059.cpc.	11/13/2018	GM
H02S40/38.cpc.	11/13/2018	GM

/GOLAM MOWLA/ Primary Examiner, Art Unit 1721	

Patent Owner, W&Wsens - Ex. 2006, p. 10

Search Notes	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/241,782	Peng et al.
	Examiner	**Art Unit**
	GOLAM MOWLA	1721

Interference Search			
US Class/CPC Symbol	**US Subclass/CPC Group**	**Date**	**Examiner**
	PGPUB Text Search - see attached interference search printout	11/13/2018	GM

/GOLAM MOWLA/ Primary Examiner, Art Unit 1721	

Patent Owner, W&Wsens - Ex. 2006, p. 11

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/241,782	Peng et al.
	Examiner	**Art Unit**
	GOLAM MOWLA	1721

CPC

Symbol					Type	Version
H02S	/	40	/	38	F	2014-12-01
H02S	/	30	/	20	I	2014-12-01
H01G	/	9	/	2004	I	2013-01-01
H01M	/	10	/	0525	I	2013-01-01
H01M	/	10	/	058	I	2013-01-01
H01M	/	10	/	465	I	2013-01-01
H01G	/	9	/	2086	I	2013-01-01
H01G	/	9	/	2022	A	2013-01-01
H01G	/	9	/	2031	A	2013-01-01
H01M	/	2004	/	025	A	2013-01-01
Y02E	/	60	/	122	A	2013-01-01
H01G	/	9	/	2059	A	2013-01-01

CPC Combination Sets

Symbol					Type	Set	Ranking	Version
	/		/					

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 18	
/GOLAM MOWLA/ Primary Examiner, Art Unit 1721 (Primary Examiner)	13 November 2018 (Date)	O.G. Print Claim(s) Claim 1	O.G. Print Figure Figure 1

U.S. Patent and Trademark Office

Part of Paper No.: 20181113

Patent Owner, W&Wsens - Ex. 2006, p. 12

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/241,782	Peng et al.
	Examiner	**Art Unit**
	GOLAM MOWLA	1721

INTERNATIONAL CLASSIFICATION				
CLAIMED				
H02S	/	40	/	38

NON-CLAIMED				
	/		/	

US ORIGINAL CLASSIFICATION	
CLASS	SUBCLASS

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

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 18	
/GOLAM MOWLA/ Primary Examiner, Art Unit 1721 (Primary Examiner)	13 November 2018 (Date)	O.G. Print Claim(s) Claim 1	O.G. Print Figure Figure 1

U.S. Patent and Trademark Office

Part of Paper No.: 20181113

Patent Owner, W&Wsens - Ex. 2006, p. 13

Issue Classification	Application/Control No.	Applicant(s)/Patent Under Reexamination
	15/241,782	Peng et al.
	Examiner	**Art Unit**
	GOLAM MOWLA	1721

☐ 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												
2	2	11	11												
3	3	12	12												
4	4	13	13												
5	5	14	14												
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9	9	18	18												

NONE (Assistant Examiner)	(Date)	**Total Claims Allowed:** 18	
/GOLAM MOWLA/ Primary Examiner, Art Unit 1721 (Primary Examiner)	13 November 2018 (Date)	O.G. Print Claim(s) Claim 1	O.G. Print Figure Figure 1

U.S. Patent and Trademark Office Part of Paper No.: 20181113

Patent Owner, W&Wsens - Ex. 2006, p. 14

Bibliographic Data

Application No: 15/241,782

Foreign Priority claimed: ◉ Yes ○ No

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

Verified and Acknowledged: /GOLAM MOWLA/ (Examiner's Signature) | (Initials)

Title: FIBER-SHAPED ELECTRIC ENERGY HARVESTING AND STORAGE DEVICE AND METHOD OF MANUFACTURING THE SAME

FILING or 371(c) DATE	CLASS	GROUP ART UNIT	ATTORNEY DOCKET NO.
08/19/2016 **RULE**	136	1721	YPL1701US

APPLICANTS

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INVENTORS

Huisheng Peng Shanghai, CHINA

Hao Sun Shanghai, CHINA

Yishu Jiang Shanghai, CHINA

CONTINUING DATA

FOREIGN APPLICATIONS

CHINA 201610011765.4 01/08/2016

IF REQUIRED, FOREIGN LICENSE GRANTED**

08/30/2016

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UNITED STATES

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	2016-08-19
	First Named Inventor	Huisheng Peng
	Art Unit	NYA
	Examiner Name	NYA
	Attorney Docket Number	YPL1701US

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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]

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	
Filing Date	2016-08-19
First Named Inventor	Huisheng Peng
Art Unit	NYA
Examiner Name	NYA
Attorney Docket Number	YPL1701US

	1	DINGSHAN YU et al., Controlled Functionalization of Carbonaceous Fibers for Asymmetric Solid-State Micro-Supercapacitors with High Volumetric Energy Density, Article, 2014, pages 6790-6797, 26, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim	
	2	DINGSHAN YU et al., Transforming Pristine Carbon Fiber Tows into High Performance Solid-State Fiber Supercapacitors, Article, 2015, pages 4895-4901, 27, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim	
	3	QINHAI MENG et al., High-Performance All-Carbon Yarn Micro-Supercapacitor for an Integrated Energy System, Article, 2014, pages 4100-4106, 26, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim	
	4	KAI WANG et al., High-Performance Two-Ply Yarn Supercapacitors Based on Carbon Nanotubes and Polyaniline Nanowire Arrays, Article, 2013, pages 1494-1498, 25, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim	
	5	JUNWEN ZHONG et al., Stretchable Self-Powered Fiber-Based Strain Sensor, Article, 2015, pages 1798-1803, 25, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim	
	6	ZHIBIN YANG et al., Photovoltaic Wire Derived from a Graphene Composite Fiber Achieving an 8.45% Energy Conversion Efficiency, Article, 2013, pages 7693-7696, 125, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim	
	7	HUISHENG PENG, Angewandte Chemie, 2014, page 918, 53, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim	
	8	HAO SUN et al., Self-Healable Electrically Conducting Wires for Wearable Microelectronics, Article, 2014, pages 9526-9531, 53, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim	
	9	ZHENBO CAI et al., Flexible, weavable and efficient microsupercapacitor wires based on polyaniline composite fibers incorporated with aligned carbon nanotubes, Article, 2013, pages 258-261, 1, Journal of Materials Chemistry, The Royal Society of Chemistry	
	10	YE ZHANG et al., High-Performance Lithium-Air Battery with a Coaxial-Fiber Architecture, Article, 2016, pages 4563-4567, 128, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim	
	11	WEI WENG et al., Winding Aligned Carbon Nanotube Composite Yarns into Coaxial Fiber Full Batteries with High Performances, Article, 2014, pages 3432-3438, 14, Nano Letter, ACS publications, American Chemical Society	

ALL REFERENCES CONSIDERED EXCEPT WHERE LINED THROUGH. /G.M/

INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number	
	Filing Date	2016-08-19
	First Named Inventor	Huisheng Peng
	Art Unit	NYA
	Examiner Name	NYA
	Attorney Docket Number	YPL1701US

	12	TAO CHEN et al., An Integrated "Energy Wire" for both Photoelectric Conversion and Energy Storage, Article, 2012, pages 11977-11980, 51, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim	
	13	YONGPING FU et al., Integrated power fiber for energy conversion and storage, Journal, 2013, pages 805-812, 6, Energy Environ., The Royal Society of Chemistry	
	14	XULI CHEN et al., A novel "energy fiber" by coaxially integrating dyesensitized solar cell and electrochemical capacitor, Journal, 2014, pages 1897-1902, 2, J. Mater. Chem. A., The Royal Society of Chemistry	
	15	ZHITAO ZHANG et al., Integrated Polymer Solar Cell and Electrochemical Supercapacitor in a Flexible and Stable Fiber Format, Article, 2014, pages 466-470, 26, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim	
	16	HAO SUN et al., Novel Graphene/Carbon Nanotube Composite Fibers for Efficient Wire-Shaped Miniature Energy Devices, Article, 2014, pages 2868-2873, 26, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim	
	17	ZHIBIN YANG et al., Stretchable, Wearable Dye-Sensitized Solar Cells, Article, 2014, pages 2643-2647, 26, WILEY-VCH Verlag GmbH & Co. KGaA, Weinheim	
	18	HAO SUN et al., Energy harvesting and storage devices fused into various patterns, Article, 2015, pages 14977-14984, 3, J. Mater. Chem. A., The Royal Society of Chemistry	

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EXAMINER SIGNATURE

Examiner Signature	/GOLAM MOWLA/	Date Considered	11/12/2018

*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.

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)		
	Application Number	
	Filing Date	2016-08-19
	First Named Inventor	Huisheng Peng
	Art Unit	NYA
	Examiner Name	NYA
	Attorney Docket Number	YPL1701US

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	/James J. Merrick/	Date (YYYY-MM-DD)	2016-08-19
Name/Print	James J. Merrick	Registration Number	43801

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.**

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EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	171	((Huisheng near2 Peng) (Hao near2 Sun) (Yishu near2 Jiang)).in.	US-PGPUB; USPAT	OR	OFF	2018/10/15 09:58
S2	189180	Samsung.as.	US-PGPUB; USPAT	OR	OFF	2018/10/15 09:58
S3	170	(Fudan and University).as.	US-PGPUB; USPAT	OR	OFF	2018/10/15 09:58
S4	189350	S2 S3	US-PGPUB; USPAT	OR	OFF	2018/10/15 09:58
S5	451067	solar photovoltaic photoelectric	US-PGPUB; USPAT	OR	OFF	2018/10/15 09:59
S6	5140	(lithium "Li") near2 ion near2 stor$4	US-PGPUB; USPAT	OR	OFF	2018/10/15 09:59
S7	8	S4 and S5 and S6	US-PGPUB; USPAT	OR	OFF	2018/10/15 09:59
S8	76980	(lithium "Li") near2 ion near2 (battery stor$4)	US-PGPUB; USPAT	OR	OFF	2018/10/15 10:01
S9	168	S8 and 136/243-265.ccls.	US-PGPUB; USPAT	OR	OFF	2018/10/15 10:02
S10	89483	(substrate carrier) with fiber	US-PGPUB; USPAT	OR	OFF	2018/10/15 10:20
S11	299	S10 and 136/243-265.ccls.	US-PGPUB; USPAT	OR	OFF	2018/10/15 10:20
S12	7	S8 and S11	US-PGPUB; USPAT	OR	OFF	2018/10/15 10:21
S13	79	Buller.in. and "136".clas.	US-PGPUB; USPAT	OR	OFF	2018/11/10 23:42
S14	372981	(power battery current) near2 stor$6	US-PGPUB; USPAT	OR	OFF	2018/11/10 23:43
S15	0	S13 and S14	US-PGPUB; USPAT	OR	OFF	2018/11/10 23:43
S16	85	substrate with (fiber cylind$6) and S14 and "136".clas.	US-PGPUB;	OR	OFF	2018/11/10 23:44

			USPAT			
S17	42	substrate with (pipe fiber) and S14 and "136".clas.	US-PGPUB; USPAT	OR	OFF	2018/11/10 23:44
S18	43	substrate with (pipe fiber) and capacitor and "136".clas.	US-PGPUB; USPAT	OR	OFF	2018/11/10 23:45
S19	498	substrate with (pipe fiber) and "136".clas.	US-PGPUB; USPAT	OR	OFF	2018/11/10 23:47
S20	453949	solar photovoltaic photoelectric	US-PGPUB; USPAT	OR	OFF	2018/11/10 23:48
S21	456	S19 and S20	US-PGPUB; USPAT	OR	OFF	2018/11/10 23:48
S22	396	substrate with (fiber waveguide) and 136/243-265.ccls.	US-PGPUB; USPAT	OR	OFF	2018/11/10 23:52
S24	1	((lithium "Li") near2 ion near2 stor$4) and S22	US-PGPUB; USPAT	OR	OFF	2018/11/10 23:53
S25	41	(capacitor supercapacitor) and S22	US-PGPUB; USPAT	OR	OFF	2018/11/10 23:53
S26	7	((lithium "Li") near2 ion near2 (battery stor$4)) and S22	US-PGPUB; USPAT	OR	OFF	2018/11/10 23:54
S27	173	(battery stor$4) and S22	US-PGPUB; USPAT	OR	OFF	2018/11/10 23:54
S28	176	S24 S25 S26 S27	US-PGPUB; USPAT	OR	OFF	2018/11/10 23:54
S29	480	core near2 shell and 136/243-265.ccls.	US-PGPUB; USPAT	OR	OFF	2018/11/11 16:00
S30	848562	((lithium "Li") near2 ion near2 (battery stor$4)) (capacitor supercapacitor) ((lithium "Li") near2 ion near2 stor$4)	US-PGPUB; USPAT	OR	OFF	2018/11/11 16:01
S31	11	S29 and S30	US-PGPUB; USPAT	OR	OFF	2018/11/11 16:02
S32	536	waveguide and 136/243-265.ccls.	US-PGPUB; USPAT	OR	OFF	2018/11/11 16:05
S33	51	S30 and S32	US-PGPUB; USPAT	OR	OFF	2018/11/11 16:05
S34	49	S33 not S31	US-PGPUB; USPAT	OR	OFF	2018/11/11 16:05
S35	23268	H01M10/0525,058,465.cpc.	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:42
S36	372	H01M2004/025.cpc.	US-PGPUB;	OR	OFF	2018/11/13 01:42

			USPAT			
S37	737	H02S30/20.cpc.	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:42
S38	2712	H01G9/2086,2004,2022,2031,2059.cpc.	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:42
S39	929	H02S40/38.cpc.	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:42
S40	27505	S35 S36 S37 S38 S39	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:43
S41	849118	((lithium "Li") near2 ion near2 (battery stor$4)) (capacitor supercapacitor) ((lithium "Li") near2 ion near2 stor$4)	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:43
S42	17249	S40 and S41	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:43
S43	349	S42 and substrate with (fiber waveguide cylinder pipe conduit)	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:44
S44	272067	(((lithium "Li") near2 ion near2 (battery stor$4)) (capacitor supercapacitor) ((lithium "Li") near2 ion near2 stor$4)).clm.	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:50
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S56	11	("2010/0307559").URPN.	USPAT	OR	OFF	2018/11/13 01:53
S57	3	("2016/0111564").URPN.	USPAT	OR	OFF	2018/11/13 01:53
S58	36	("20040084080" | "3780722" | "4117829" | "4252865" | "4322571" | "4353788" | "4409423" | "4478209" | "4555622" | "4644934" | "4663188" | "4694117" | "4812352" | "4931412" | "5081049" | "5575860" | "5816238" | "6224016" | "6272268" | "6340822" | "6730840" | "6878871" | "6996147" | "7301199").PN. OR ("7635905").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/13 01:53
S59	11	("2010/0258160").URPN.	USPAT	OR	OFF	2018/11/13 01:53
S60	21	("20030021324" | "20060120679" | "20090317044" | "20100065110" | "20100229854" | "4193974" | "4227939" | "4425907" | "4799748" | "5703989" | "6744960" | "6785447" | "6839491" | "7067240" | "7397995").PN. OR ("8463092").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2018/11/13 01:53
S61	0	("2016/0254407").URPN.	USPAT	OR	OFF	2018/11/13 01:53

EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S45	23268	H01M10/0525,058,465.cpc.	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:50
S46	372	H01M2004/025.cpc.	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:50
S47	737	H02S30/20.cpc.	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:50
S48	2712	H01G9/2086,2004,2022,2031,2059.cpc.	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:51
S49	929	H02S40/38.cpc.	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:51
S50	272067	(((lithium "Li") near2 ion near2 (battery stor$4)) (capacitor supercapacitor) ((lithium "Li") near2 ion near2 stor$4)).clm.	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:51
S51	32990	(substrate with (fiber waveguide cylinder pipe conduit)).clm.	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:51
S52	528	S50 and S51	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:51
S53	27505	S45 S46 S47 S48 S49	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:51
S54	14	S52 and S53	US-PGPUB; USPAT	OR	OFF	2018/11/13 01:51

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