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| APPLICATION NO.      | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------|-------------|----------------------|---------------------|------------------|
| 18/132,796           | 04/10/2023  | Kun YU               | 084546-000033USC1   | 6058             |
| 22204                | 7590        | 11/13/2023           | EXAMINER            |                  |
| NIXON PEABODY, LLP   |             |                      | MOWLA, GOLAM        |                  |
| 799 Ninth Street, NW |             |                      | ART UNIT            | PAPER NUMBER     |
| SUITE 500            |             |                      | 1721                |                  |
| WASHINGTON, DC 20001 |             |                      | NOTIFICATION DATE   | DELIVERY MODE    |
|                      |             |                      | 11/13/2023          | 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):

patentdocketing@nixonpeabody.com

|                              |                                      |                                  |                                 |
|------------------------------|--------------------------------------|----------------------------------|---------------------------------|
| <b>Office Action Summary</b> | <b>Application No.</b><br>18/132,796 | <b>Applicant(s)</b><br>YU et al. |                                 |
|                              | <b>Examiner</b><br>GOLAM MOWLA       | <b>Art Unit</b><br>1721          | <b>AIA (FITF) Status</b><br>Yes |

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

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTHS FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

1) ☒ Responsive to communication(s) filed on 04/10/2023.

☐ A declaration(s)/affidavit(s) under **37 CFR 1.130(b)** was/were filed on \_\_\_\_.

2a) ☐ This action is **FINAL**.

2b) ☒ This action is non-final.

3) ☐ 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.

4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims\*

5) ☒ Claim(s) 1-20 is/are pending in the application.

5a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.

6) ☐ Claim(s) \_\_\_\_ is/are allowed.

7) ☒ Claim(s) 1-20 is/are rejected.

8) ☐ Claim(s) \_\_\_\_ is/are objected to.

9) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement

\* If any claims have been determined allowable, 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](http://www.uspto.gov/patents/init_events/pph/index.jsp) or send an inquiry to [PPHfeedback@uspto.gov](mailto:PPHfeedback@uspto.gov).

### Application Papers

10) ☐ The specification is objected to by the Examiner.

11) ☒ The drawing(s) filed on 04/10/2023 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

### Priority under 35 U.S.C. § 119

12) ☒ 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)).

\*\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

3) ☐ Interview Summary (PTO-413)

Paper No(s)/Mail Date \_\_\_\_.

2) ☒ Information Disclosure Statement(s) (PTO/SB/08a and/or PTO/SB/08b)

4) ☐ Other: \_\_\_\_.

Paper No(s)/Mail Date 4/10/2023, 05/31/2023.

## 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.

### *Double Patenting*

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on nonstatutory double patenting provided the reference application or patent either is shown to be commonly owned with the examined application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement. See MPEP § 717.02 for applications subject to examination

under the first inventor to file provisions of the AIA as explained in MPEP § 2159. See MPEP § 2146 *et seq.* for applications not subject to examination under the first inventor to file provisions of the AIA. A terminal disclaimer must be signed in compliance with 37 CFR 1.321(b).

The USPTO Internet website contains terminal disclaimer forms which may be used. Please visit [www.uspto.gov/patent/patents-forms](http://www.uspto.gov/patent/patents-forms). The filing date of the application in which the form is filed determines what form (e.g., PTO/SB/25, PTO/SB/26, PTO/AIA/25, or PTO/AIA/26) should be used. A web-based eTerminal Disclaimer may be filled out completely online using web-screens. An eTerminal Disclaimer that meets all requirements is auto-processed and approved immediately upon submission. For more information about eTerminal Disclaimers, refer to [www.uspto.gov/patents/process/file/efs/guidance/eTD-info-1.jsp](http://www.uspto.gov/patents/process/file/efs/guidance/eTD-info-1.jsp).

3. Claims 1-20 are provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-20 of copending Application No. 18/071,430. The claims of copending application encompass all the limitations of pending claims.

This is a provisional nonstatutory double patenting rejection.

4. Claims 1-20 are provisionally rejected on the ground of nonstatutory double patenting as being unpatentable over claims 1-20 of U.S. Patent 11,824,136. The claims of U.S. Patent 11,824,136 application encompass all the limitations of pending claims.

### *Conclusion*

5. The search did not reveal any pertinent art that discloses a solar cell as required by the instant claims. WO 2016/129481 A1 to Sakai et al. is the closest prior art.

WO 2016/129481 A1 to Sakai et al. discloses an optoelectric transducer 10 which functions as a solar cell (refer to paragraph [0025]-[0112], [0224], and Fig.1 A-5), consist of a n type single crystal silicon substrate, and (refer to paragraph [0028]) with the semiconductor substrate 1 which has texture structure on a rear face, consist of silicon nitride and (refer to paragraph [0029] and [0039]) with the antireflection layer 2 of the aforementioned semiconductor substrate 1 which is placed in front, and placed between the aforementioned antireflection layer 2 and a light receiving surface, and (refer to paragraph [0039]) with the amorphous semiconductor layer which improves the passivation nature of a light receiving surface, it consists of an oxide of silicon and is placed on the aforementioned texture structure in the rear face of the aforementioned semiconductor substrate 1, (Refer to paragraph [0030] and [0041]-[0042]) with the passivation film 3 which has the film thickness which can tunnel a carrier, (Refer to paragraph [0031] and [0043]) with the n type amorphous semiconductor layer 4 which is placed at the surface of the aforementioned passivation film 3, it is placed at the surface of the aforementioned n type amorphous semiconductor layer 4, and the protective film 8 which has the passivation nature to the aforementioned n type amorphous semiconductor layer 4, and the aforementioned optoelectric transducer 10 including (paragraph [0038] and refer to [0078]) are described. The textured structure is pyramid form and truncated four-sided pyramidal rugged structure and an actual texture is shown in Fig. 2 about the aforementioned texture structure at paragraph [0045]-[0047] of Sakai, which shows multiple unevenness with sizes or

various form is formed. Sakai further discloses that in paragraph [0028] that the size of a texture is less than 15 micrometers.

However, Sakai does not clearly show among the overlapping unevenness about the distance of the top face of an outermost protruding part, and the top face of the protruding part which adjoins it.

### ***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.

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, Allison Bourke can be reached on 303-297-4684. 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 <https://ppair-my.uspto.gov/pair/PrivatePair>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-

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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