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(71) Applicant (for all designated States except US): **UNIVERSITY OF WASHINGTON** [US/US]; 4311 - 11th Avenue NE, Suite 500, Seattle, WA 98105-4608 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **JEN, Kwan-Yue** [US/US]; 18251 - 58th Avenue NE, Kenmore, WA 98028 (US). **YIP, Hin-Lap** [CN/US]; 4230 12th Avenue NE, Apt. 105, Seattle, WA 98105 (US). **HAU, Steven, K.** [US/US]; 3612 Whitman Avenue North, Apt. 4, Seattle, WA 98103 (US). **MA, Hong** [CN/US]; 2319-241st Place SW, Seattle, WA 98021 (US).

(74) Agent: **LAWSON, L., Rhys**; Christensen O'Connor Johnson Kindness PLLC, 1420 Fifth Avenue, Suite 2800, Seattle, WA 98101 (US).

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(54) Title: PHOTOVOLTAIC DEVICES HAVING METAL OXIDE ELECTRON-TRANSPORT LAYERS

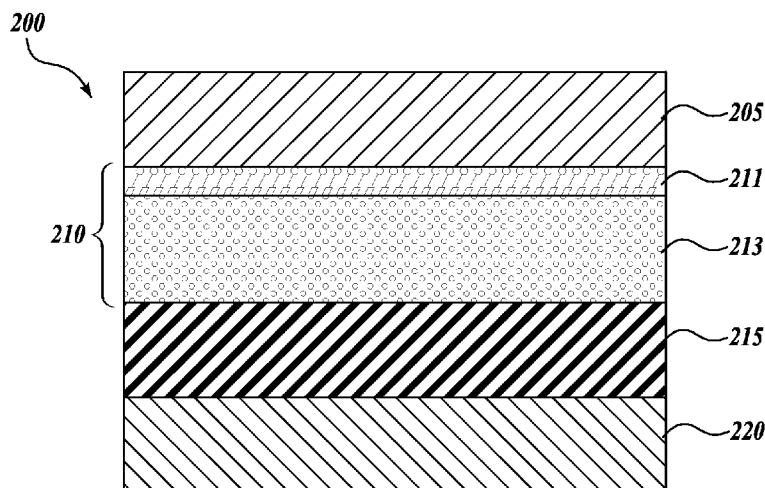


Fig. 2.

(57) Abstract: Optoelectronic devices in both traditional and inverted configurations are provided that include an electron-transport layer. The electron-transport layer includes a metal oxide layer and a monolayer. Methods for making and using the devices are also provided.



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A. CLASSIFICATION OF SUBJECT MATTER***H01L 31/04(2006.01)i, H01L 31/042(2006.01)i***

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC8 H01L31, H01L33

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Korean Utility models and applications for Utility models since 1975

Japanese Utility models and applications for Utility models since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

PAJ, FPD, USPAT, eKOMPASS "Keyword: photovoltaic, metal oxide, transport, monolayer"

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 4,927,721 A1 (GRATZEL, MICHAEL, et al.) 22 MAY 1990. See the abstract; column 1, line 4 - column 4, line 68; figures 1, 2.	1-48
Y	US 6,242,687 B1 (SCHROPP, RUDOLF EMMANUEL ISIDORE) 5 JUNE 2001. See the abstract; column 1, line 36 - column 6, line 31; figures 1-4.	1-48
A	JP 2000-269529 A (KANEGAFUCHI CHEM. IND. CO. LTD.) 29 SEPTEMBER 2000. See the abstract; bracket [0006] - bracket [0079]; figures 1-4.	1-48
A	US 6,653,701 B1 (YAMAZAKI, YOSHIHISA, et al.) 25 NOVEMBER 2003. See the abstract; column 1, line 61 - column 31, line 35; figures 1-11.	1-48



Further documents are listed in the continuation of Box C.



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"&" document member of the same patent family

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Korean Intellectual Property Office
Government Complex-Daejeon, 139 Seonsa-ro, Seo-
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Authorized officer

SON, HEE SOO

Telephone No. 82-42-481-5960



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

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