PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference	**FOR FURTHER ACTION**	see Form PCT/ISA/220 as well as, where applicable, item 5 below.
P216467WO		
International application No.	International filing date *(day/month/year)*	(Earliest) Priority Date *(day/month/year)*
PCT/GB2015/051478	20 May 2015 (20-05-2015)	20 May 2014 (20-05-2014)
Applicant		
THE UNIVERSITY OF MANCHESTER		

This international search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

[X] It is also accompanied by a copy of each prior art document cited in this report.

1. **Basis of the report**

a. With regard to the **language,** the international search was carried out on the basis of:

[X] the international application in the language in which it was filed

[ ] a translation of the international application into _____, which is the language of a translation furnished for the purposes of international search (Rules 12.3(a) and 23.1(b))

b. [ ] This international search report has been established taking into account the **rectification of an obvious mistake** authorized by or notified to this Authority under Rule 91 (Rule 43.6*bis*(a)).

c. [ ] With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, see Box No. I.

2. [ ] **Certain claims were found unsearchable** (See Box No. II)

3. [ ] **Unity of invention is lacking** (see Box No III)

4. With regard to the **title,**

[X] the text is approved as submitted by the applicant

[ ] the text has been established by this Authority to read as follows:

5. With regard to the **abstract,**

[X] the text is approved as submitted by the applicant

[ ] the text has been established, according to Rule 38.2, by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority

6. With regard to the **drawings,**

a. the figure of the **drawings** to be published with the abstract is Figure No. 2

[ ] as suggested by the applicant

[ ] as selected by this Authority, because the applicant failed to suggest a figure

[X] as selected by this Authority, because this figure better characterizes the invention

b. [ ] none of the figures is to be published with the abstract

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2015/051478

A. CLASSIFICATION OF SUBJECT MATTER
INV. H01L51/05 H01L51/30
ADD.

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)
H01L G01N

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

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EPO-Internal, COMPENDEX, WPI Data

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	JANG YUNSEOK ET AL: "High field-effect mobility pentacene thin-film transistors with nanoparticle polymer composite/polymer bilayer insulators", APPLIED PHYSICS LETTERS, AMERICAN INSTITUTE OF PHYSICS, US, vol. 94, no. 18, 5 May 2009 (2009-05-05), pages 183301-183301, XP012121184, ISSN: 0003-6951, DOI: 10.1063/1.3124660 cited in the application	1-4, 6-14,17, 19-25, 28-32, 34-37,41
Y	pages 183301-1, column 2 - pages 183301-2, column 1; table 1 pages 183301-3, column 1	5,15,16, 18,26, 27,33, 38-40, 42-44

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[X] Further documents are listed in the continuation of Box C.

[X] See patent family annex.

* Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
15 July 2015	23/07/2015

Name and mailing address of the ISA/	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Fax: (+31-70) 340-3016	Beierlein, Udo

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Form PCT/ISA/210 (second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

International application No
PCT/GB2015/051478

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	ONOUE T ET AL: "LOW-OPERATING-VOLTAGE ORGANIC FIELD-EFFECT TRANSISTORS WITH POLY-P-XYLYLENE/HIGH-K POLYMER BILAYER GATE DIELECTRIC", JAPANESE JOURNAL OF APPLIED PHYSICS, JAPAN SOCIETY OF APPLIED PHYSICS, JP, vol. 45, no. 29, 6 July 2006 (2006-07-06), pages L770-L772, XP001246307, ISSN: 0021-4922, DOI: 10.1143/JJAP.45.L770 page L770, column 2; figure 1 page L771 - page L772; table 1	15,16,33
Y	YUNSANG KIM ET AL: "Enhancement of breakdown strength and energy density in BaTiO3 ferroelectric polymer nanocomposites via processing-induced matrix crystallinity and uniformity", RSC ADV., vol. 4, no. 38, 16 April 2014 (2014-04-16) , pages 19668-19673, XP055202397, DOI: 10.1039/C4RA00987H abstract	18
Y	US 2010/276754 A1 (OHE TAKAHIRO [JP] ET AL) 4 November 2010 (2010-11-04) paragraph [0069] paragraph [0002]	26,27, 38-40, 42,43
Y	WO 2013/131130 A1 (NEWCASTLE INNOVATION LTD [AU]) 12 September 2013 (2013-09-12) page 1, paragraph 3 page 15, lines 5-6	44
Y	US 2007/215957 A1 (CHEN FANG-CHUNG [TW] ET AL) 20 September 2007 (2007-09-20) paragraph [0034] - paragraph [0036]	5

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INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/GB2015/051478

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 2010276754 A1	04-11-2010	CN 101904011 A	01-12-2010
		EP 2226846 A1	08-09-2010
		JP 5453771 B2	26-03-2014
		JP 2009177135 A	06-08-2009
		KR 20100103623 A	27-09-2010
		TW 200947709 A	16-11-2009
		US 2010276754 A1	04-11-2010
		WO 2009084307 A1	09-07-2009
WO 2013131130 A1	12-09-2013	CN 104412101 A	11-03-2015
		US 2015037827 A1	05-02-2015
		WO 2013131130 A1	12-09-2013
US 2007215957 A1	20-09-2007	TW I300273 B	21-08-2008
		US 2007215957 A1	20-09-2007