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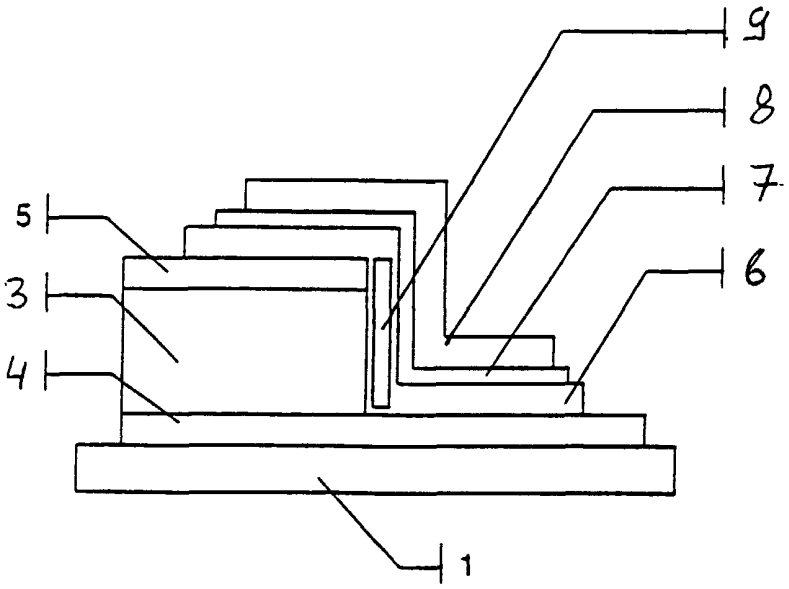
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(81) Bestimmungsstaaten *(national)*: JP, US.

[Fortsetzung auf der nächsten Seite]

(54) Title: ORGANIC FIELD-EFFECT TRANSISTOR (OFET), A PRODUCTION METHOD THEREFOR, AN INTEGRATED CIRCUIT CONSTRUCTED FROM THE SAME AND THEIR USES

(54) Bezeichnung: ORGANISCHER FELDEFFEKT-TRANSISTOR (OFET), HERSTELLUNGSVERFAHREN DAZU UND DARAUS GEBAUTE INTEGRIERTE SCHALTUNG SOWIE VERWENDUNGEN



(57) Abstract: The invention relates to an organic field-effect transistor with an improved performance. The output current is increased by the arrangement of several current channels on the OFET, all of which contribute to the output current. By positioning the source and drain electrode on a plane which is not parallel to the surface of the substrate, it is possible to reduce the distances between the source and the drain in relation to those previously attainable. This produces shorter current channels with faster switching speeds. Finally, the invention relates to integrated circuits, which are stacked on a substrate to save space.

(57) Zusammenfassung: Die Erfindung betrifft einen organischen Feldeffekt-Transistor mit erhöhter Leistungsfähigkeit. Der Ausgangsstrom wird durch den Aufbau mehrere Stromkanäle auf dem OFET, die alle einen Beitrag zum Ausgangsstrom liefern, gesteigert. Durch eine Anordnung der Source und Drain Elektrode nicht auf einer Ebene parallel zu der Oberfläche des Substrats wird es möglich, geringere Abstände zwischen Source und Drain zu realisieren, als sie bisher zugänglich waren. Damit ergeben sich kürzere Stromkanäle mit schnelleren Schaltgeschwindigkeiten. Schließlich betrifft die Erfindung integrierte Schaltungen, die platzsparend auf einem Substrat durch Stapelung angeordnet sind.

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(84) Bestimmungsstaaten *(regional)*: europäisches Patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR).

Erklärungen gemäß Regel 4.17:

— *hinsichtlich der Berechtigung des Anmelders, ein Patent zu beantragen und zu erhalten (Regel 4.17 Ziffer ii) für die folgenden Bestimmungsstaaten JP, europäisches Patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR)*

— *Erfindererklärung (Regel 4.17 Ziffer iv) nur für US*

Veröffentlicht:

— *mit internationalem Recherchenbericht*

(88) Veröffentlichungsdatum des internationalen Recherchenberichts: 1. August 2002

Zur Erklärung der Zweibuchstaben-Codes und der anderen Abkürzungen wird auf die Erklärungen ("Guidance Notes on Codes and Abbreviations") am Anfang jeder regulären Ausgabe der PCT-Gazette verwiesen.

INTERNATIONAL SEARCH REPORT

Int onal Application No
PCT/DE 01/03163

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 H01L51/20 H01L27/00

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)
IPC 7 H01L

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 practical, search terms used)
INSPEC, EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	GARNIER F ET AL: "VERTICAL DEVICES ARCHITECTURE BY MOLDING OF ORGANIC-BASED THIN FILMTRANSISTOR" APPLIED PHYSICS LETTERS, AMERICAN INSTITUTE OF PHYSICS. NEW YORK, US, vol. 73, no. 12, 21 September 1998 (1998-09-21), pages 1721-1723, XP000784120 ISSN: 0003-6951	1,6,8,10
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X	EP 0 460 242 A (NIPPON PETROCHEMICALS CO LTD) 11 December 1991 (1991-12-11) figure 1	1,2

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

[X] Patent family members are listed in 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 document but published on or after the international filing date

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"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
27 February 2002	26.03.02

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, Tx. 31 651 epo nl, Fax: (+31–70) 340–3016	Königstein, C

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C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

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Information on patent family members

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