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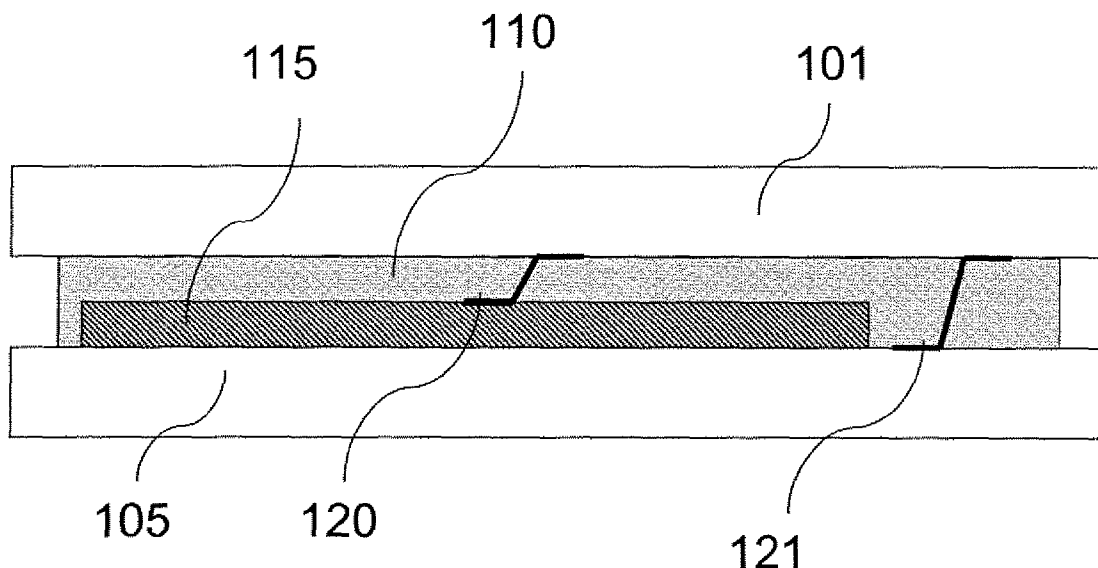
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(54) Title: THIN FILM BATTERY ON AN INTEGRATED CIRCUIT OR CIRCUIT BOARD AND METHOD THEREOF



(57) Abstract: The present invention relates to flexible thin film batteries on semiconducting surface or the conductive or insulating packaging surface of a semiconductor device and methods of constructing such batteries. Electrochemical devices may be glued to a semiconducting surface or the conductive or insulating packaging surface of a semiconductor device or deposited directly thereon. The invention also relates to flexible thin film batteries on flexible printed circuit boards where the electrochemical devices may also be glued or deposited on the flexible printed circuit board.

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## INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/68915

## A. CLASSIFICATION OF SUBJECT MATTER

IPC(8) - H01M 6/14, H01M 6/00, H01M 2/22 (2007.10)

USPC - 429/122, 429/127

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)  
USPC - 429/122, 429/127

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)  
GOOGLE PATENTS, GOOGLE WEB and WEST (PGPB,USPT,EPAB,JPAB): battery, encapsulated, thin film, anneal, annealing, laser annealing, embedded, embedded conductor, bonding layer, insulating layer, integrated circuit, contact, sandwiched, woven, woven conductor, woven lead, woven lead wire

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 2004/0214079 A1 (Simburger et al.) 28 October 2004 (28.10.2004), para [0016], para [0017], Figure 1	1-6, 9, 10, 37-43, 46, 47, 54 and 55
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Y		7, 8, 11-36, 44, 45, 48-53 and 56-67
Y	US 2006/0021214 A1 (Jenson et al.) 02 February 2006 (02.02.2006), Abstract; para [0132]; para [0133]; para [0137]; para [0148]; para [0149]; para [0157]; para [0159]; para [0176]; para [0200] to para [0202]; para [0212], para [0234]; Figure 1D; Figure 9A; Figure 9B	11-36, 48-53 and 56-67
Y	US 4,518,661 A (Rippere) 21 May 1985 (21.05.1985), entire document, examples A, E, J, P, V	7, 8, 44 and 45
A	US 712,316 A (Loppe et al.) 28 October 1902 (28.10.1902), page 1, ln 32-101	7, 8, 44 and 45
A	US 20030178623 A1 (Nishiki et al.) 25 September 2003 (25.09.2003), entire document	7, 8, 44 and 45

 Further documents are listed in the continuation of Box C.

\* 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

"&amp;" document member of the same patent family

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/US 07/68915

**Box No. II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)**

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

- 1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
- 2.  Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
- 3.  Claims Nos.: 68-71  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

**Box No. III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)**

This International Searching Authority found multiple inventions in this international application, as follows:

- 1.  As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
- 2.  As all searchable claims could be searched without effort justifying additional fees, this Authority did not invite payment of additional fees.
- 3.  As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
- 4.  No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

**Remark on Protest**

- The additional search fees were accompanied by the applicant's protest and, where applicable, the payment of a protest fee.
- The additional search fees were accompanied by the applicant's protest but the applicable protest fee was not paid within the time limit specified in the invitation.
- No protest accompanied the payment of additional search fees.