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(71) Applicant (for all designated States except US): THE REGENTS OF THE UNIVERSITY OF MICHIGAN [US/US]; 1600 Huron Parkway, 2nd Floor, Ann Arbor, Michigan 48109-2590 (US).

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Declarations under Rule 4.17:

- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

(72) Inventors; and
(75) Inventors/Applicants (for US only): KIM, Hahnsang [KR/US]; 3402 Columbus Lane, Ann Arbor, Michigan 48103 (US). SHIN, Kang G. [US/US]; 3765 Dines Ct., Ann Arbor, Michigan 48105 (US).

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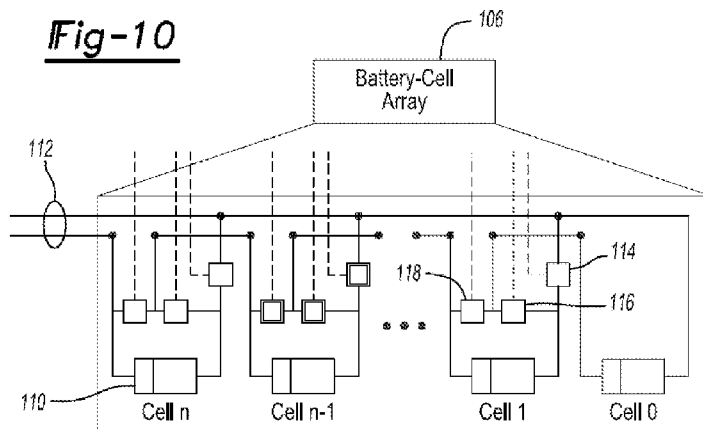
- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(74) Agents: MACINTYRE, Timothy D. et al.; HARNESS, DICKEY & PIERCE, P.L.C., P.O. Box 828, Bloomfield Hills, Michigan 48303 (US).

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(54) Title: DYNAMICALLY RECONFIGURABLE FRAMEWORK FOR A LARGE-SCALE BATTERY SYSTEM



(57) Abstract: A dynamically reconfigurable framework is provided for a large-scale battery system. The framework is comprised of a plurality of battery circuits arranged adjacent to each other to form a battery-cell array that is coupled to an application load. A given battery circuit includes: a battery cell with an input terminal and an output terminal; a first switch connected between the load and an input terminal of the battery cell; a second switch is connected between an input terminal of the battery cell and an output terminal of a battery cell in an immediately adjacent battery circuit; and a third switch connected between the output terminal of the battery cell and the output terminal of the battery cell in the adjacent battery circuit. The battery-cell array also includes a local controller that selectively controls the switches in the plurality of battery circuits.

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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2011/031535**A. CLASSIFICATION OF SUBJECT MATTER*****H02J 7/00(2006.01)i, H01M 10/44(2006.01)i, B60L 11/18(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)

H02J 7/00; H02J 7/34; H02J 1/00; G05F 1/62; B60K 1/00; H02H 7/16

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

Japanese utility models and applications for utility models

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

eKOMPASS(KIPO internal) & Keywords: reconfigurable battery, switch, bypass, series, parallel

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 7075194 B2 (WEIDENHEIMER; DOUGLAS et al.) 11 July 2006 See the abstract; column 2, lines 40-46; claim 1; figures 2-6.	1-21
A	US 2006-0092583 A1 (MAHMOUD ALAHMAD et al.) 04 May 2006 See the abstract; paragraphs [20]-[21]; claims 1-12; figures 1-6.	1-21
A	US 2005-0052154 A1 (GREGORY, T. KAVOUNAS) 10 March 2005 See the abstract; paragraphs [33]-[34]; claims 1-19; figures 6A-6C.	1-21
A	US 4175249 A (GRUBER; ROBERT P.) 20 November 1979 See the abstract; column 3, line 14-column 4, line 13; claims 1-7; figures 3-4.	1-21
A	US 5898291 A (HALL; JOHN C.) 27 April 1999 See the abstract; claim 1; figure 4.	1-21

 Further documents are listed in the continuation of Box C. See patent family annex.

* Special categories of cited documents:

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

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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

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Authorized officer

WEE Jae Woo

Telephone No. 82-42-481-8540



INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
US 7075194 B2	11.07.2006	US 2005-0023054 A1 US 2006-0249318 A1 US 2007-0062744 A1 US 2011-0140526 A1 US 7456521 B2 US 7893561 B2	03.02.2005 09.11.2006 22.03.2007 16.06.2011 25.11.2008 22.02.2011
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