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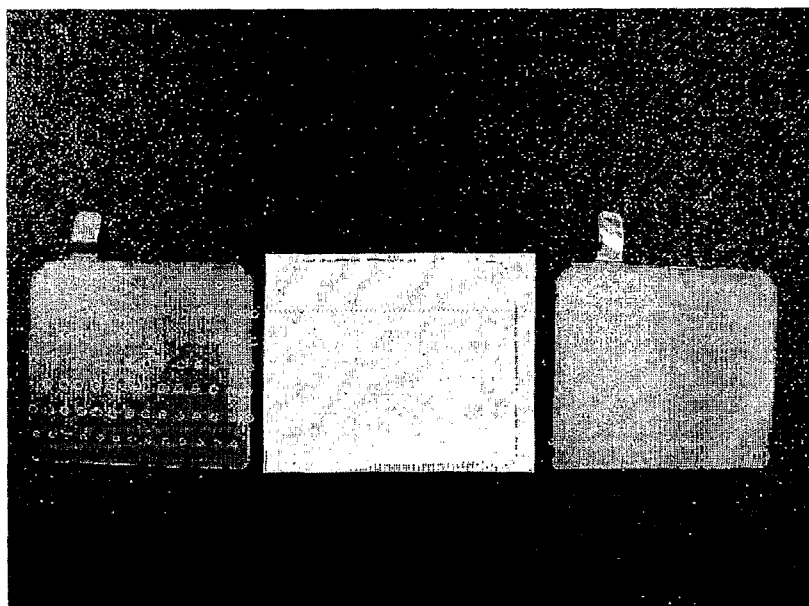
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(54) Title: SEPARATOR FOR PROGRESSING UNITED FORCE TO ELECTRODE AND ELECTROCHEMICAL CONTAINING THE SAME

FIG. 2



(57) Abstract: A separator includes a porous substrate having a plurality of pores; a porous coating layer formed on at least one surface of the porous substrate and made of a mixture of a plurality of inorganic particles and a binder polymer; and a dot pattern layer formed on a surface of the porous coating layer and having a plurality of dots made of polymer and arranged at predetermined intervals. The separator may control short-circuit between positive and negative electrodes though an electrochemical device is overheated. Also, a united force to an electrode is enhanced due to the polymer dot pattern layer, thereby preventing the electrode and the separator from being separated. Accordingly, inorganic particles of the porous coating layer formed on the porous substrate are not separated, thereby improving stability of an electrochemical device.



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INTERNATIONAL SEARCH REPORT

International application No.
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A. CLASSIFICATION OF SUBJECT MATTER <i>H01M 2/16(2006.01)i</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 H01M 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) eKOMPASS(KIPO internal) and keywords "separator, rubber, coat, particle, electrochemical, dots, layer, inorganic binder, polymer, and similar terms"				
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
Y	KR 10-2003-0010406 A (NEWTURN ENERGY CO., LTD.) 5 February 2003 See abstract, Figures 1-5 and claims 1-14	1-18		
Y	KR 10-2006-0072065 A (LG CHEM., LTD.) 27 June 2006 See abstract, Figures 1-9 and claims 1-16	1-18		
Y	KR 10-2007-0000231 A (LG CHEM., LTD.) 2 January 2007 See abstract, Figures 1-8 and claims 1-17	1-18		
A	JP 06-349681 A (MURATA MFG., CO., LTD.) 22 December 1996 See abstract, Figures 1-6 and claims 1-4	1-18		
☐ Further documents are listed in the continuation of Box C. ☒ See patent family annex.				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top; border: none;"> * 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 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 </td> <td style="width: 50%; vertical-align: top; border: none;"> "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 </td> </tr> </table>			* 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 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
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INTERNATIONAL SEARCH REPORT

Information on patent family members

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KR 10-2007-0000231 A	02.01.2007	None	
JP 06-349681 A	22.12.1994	None	