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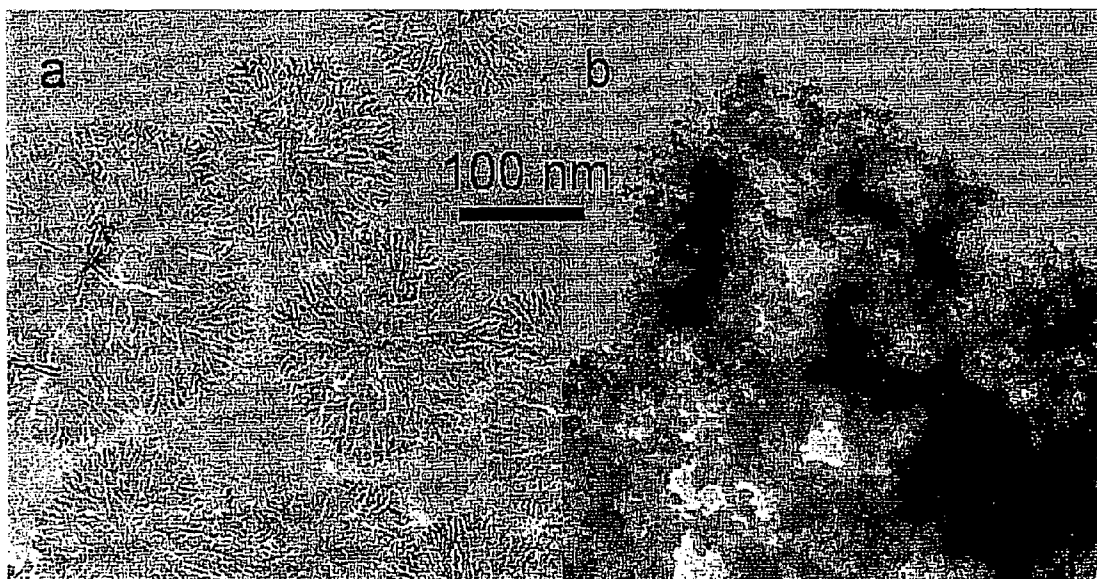
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[Continued on next page]

(54) Title: DENDRITIC METAL NANOSTRUCTURES FOR FUEL CELLS AND OTHER APPLICATIONS



TEM images of dendritic platinum nanosheets (a) and commercial platinum black (b) used for the preparation of MEAs.

(57) Abstract: Embodiment of the present invention relate to dendrimers useful for application as catalysts, in particular as improved electrocatalysts for polymer electrolyte membrane fuel cells (PEM-FCs). Methods of preparing such catalysts are described. Examples include dendritic nanostructured metal catalysts, such as platinum and platinum-alloy catalysts.



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A. CLASSIFICATION OF SUBJECT MATTER

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USPC - 429/40; 429/12

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)

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

IPC(8): H01M 4/92; H01M 8/00 (2008.04)

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

USPTO WEST (USPT, PGPUB, EPAB, JPAB); fuel, cell, electrode, electrolyte, catalyst, dendritic, dendrimer, platinum, disk, thickness, 'nm', 'disk-shaped', assembly, membrane, ion

Google Scholar; 'fuel cell dendritic nanostructures'

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X — Y	US 2005/0014060 A1 (SUZUKI) 20 January 2005 (20.01.2005), para [0001], [0006], [0007], [0010], [0012], [0025], [0072], [0073], [0085], [0087], [0088], [0091], [0095], [0107], [0130]	1-8, 10, 11 ----- 9, 12-18
Y	US 2006/0003401 A1 (LEE, et al.) 05 January 2006 (05.01.2006), para [0032]	9
Y	US 2003/0182985 A1 (FLEURY, et al.) 02 October 2003 (02.10.2003), para [0015]	9
Y	US 2003/0035991 A1 (COLOMBO, et al.) 20 February 2003 (20.02.2003), [Abstract], para [0034]	12-18

Further documents are listed in the continuation of Box C.

* Special categories of cited documents:	"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
"A" document defining the general state of the art which is not considered to be of particular relevance	"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
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