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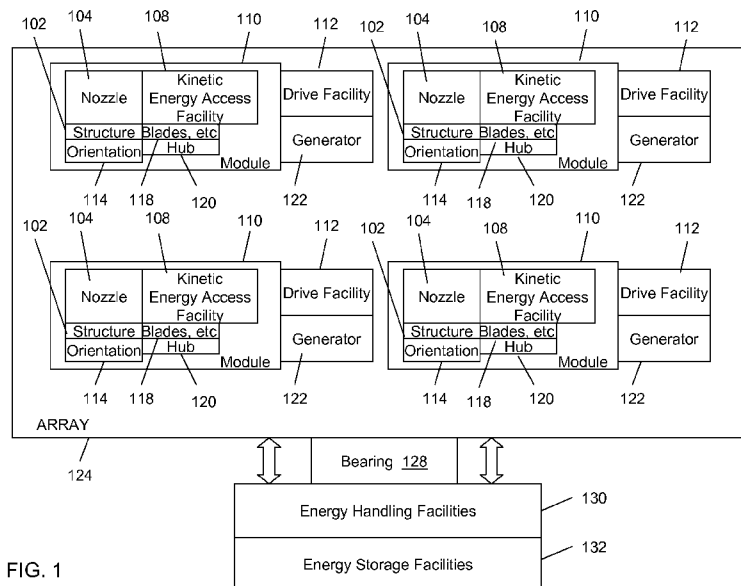
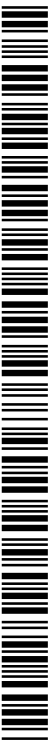


FIG. 1

(57) Abstract: In embodiments of the present invention improved capabilities are described for the efficiency with which fluid energy is converted into another form of energy, such as electrical energy, where an array of fluid energy conversion modules is contained in a scalable modular networked superstructure. In certain preferred embodiments, a plurality of turbines, such as for instance wind turbines, may be disposed in an array, where the plurality of arrays may be disposed in a suitable arrangement in proximity to each other and provided with geometry suitable for tight packing in an array with other parameters optimized to extract energy from the fluid flow. In addition, the turbines may be a more effective adaptation of a turbine, or an array of turbines, to varying conditions, including fluid conditions that may differ among different turbines in an array, or among different turbines in a set of arrays.



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INTERNATIONAL SEARCH REPORT

International application No.
PCT/US2008/086295**A. CLASSIFICATION OF SUBJECT MATTER****F03D 1/02(2006.01)i, F03D 11/04(2006.01)i, F03D 1/00(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)

IPC8 F03D

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 application for Utility Models since 1975

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

KOMPASS (KIPO internal) & keywords: wind power, array, duct, nozzle, and system

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	JP 2003-97416 A (Kami Kaze Co., Ltd.) 03 April 2003 See page 4, paragraph [0014] - page 5, paragraph [0025]; figures 1,2,7,8.	18-20, 33-36, 58-81 1-17, 21-32, 37-57, 82-87
X A	JP 2003-97415 A (Kami Kaze Co., Ltd.) 03 April 2003 See page 3, paragraph [0010] - page 5, paragraph [0023]; figures 1-7.	18-20, 33-36, 58-81 1-17, 21-32, 37-57, 82-87
A	US 2005/0232753 A1(Lawrence G. Hopkins) 20 October 2005 See page 6, paragraphs [0070]-[0073]; figures 16,17.	23-29
A	US 2008/0258467 A1 (Samuel B. Wilson) 23 October 2008 See page 6, paragraph [0066]; figures 3,4.	1-3, 5,8, 37

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

Date of the actual completion of the international search

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INTERNATIONAL SEARCH REPORT

International application No.

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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.: 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:

Claims 1 ~ 87 (group 1), claims 88 ~ 96 (group 2), claims 97 ~ 232 (group 3), claims 233~239 (group 4), and claims 240 ~290 (group 5) are respectively directed to an array of nozzles, a rotor, a nozzle, a structural array, and a method of providing an array of fluid energy conversion modules.

Therefore, there is no technical relationship left over the general concept of using wind power among the group 1~5.

- 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 an additional fee, this Authority did not invite payment of any additional fee.
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.: 1-87

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.

INTERNATIONAL SEARCH REPORT

Information on patent family members

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Patent document cited in search report	Publication date	Patent family member(s)	Publication date
JP 2003-97416 A	03.04.2003	None	
JP 2003-97415 A	03.04.2003	None	
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US 2008/0258467 A1	23.10.2005	None	