

(57) Abstract: A fuel processor (15) that produces hydrogen (39) from a fuel source (29). The fuel processor (15) comprises a reformer (32) and a burner (30). The reformer (32) includes a catalyst for production of the hydrogen (39). Voluminous reformer chambers increase the amount of catalyst used in the reformer (32) and consequently increase hydrogen production for given fuel processor size. The burner (30) provides heat to the reformer (32). One or multiple burners can surround the reformer on multiple sides to increase heat transfer. Dewars (150) can be used to further increase thermal management of the fuel processor (15) and increase burner efficiency. A dewar (150) includes one or more dewar chambers that receive inlet air (31) before the burner (30) receives the air (31). The air (31) is preheated in the dewar (150) chamber using heat generated by the burner (30).



— *before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments*

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INTERNATIONAL SEARCH REPORT

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A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : B01J 8/04

US CL : 48/127.9; 422/198, 211, 190-193

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)

U.S. : 48/127.9; 422/198, 211, 190-193

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)

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 3,119,671 A (KONIEWIEZ et al.) 28 January 1964 (28.01.1964)	1-121
A	US 3,541,729 A (DANTOWITZ) 24 November 1970 (24.11.1970)	1-121
A	US 3,595,628 (CONNOE et al.) 27 July 1971 (27.07.1971)	1-121
A	US 4,522,894 A (HWANG et al.) 11 June 1985 (11.06.1985)	1-121



Further documents are listed in the continuation of Box C.



See patent family annex.

* 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
"E"	earlier application or patent published on or after the international filing date	"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
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"P"	document published prior to the international filing date but later than the priority date claimed		

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