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- (71) **Applicant (for all designated States except US):** GENERAL ELECTRIC COMPANY [US/US]; (A NEW YORK CORPORATION), 1 River Road, Schenectady, NY 12345 (US).
- (72) **Inventors; and**
- (75) **Inventors/Applicants (for US only):** LIU, Ke [US/US]; 255 Montana DeLago Drive, Rancho Santa Margarita, CA 92688 (US). MALE, Jonathan, Lloyd [GB/US]; 345 State Route 443, Schoharie, NY 12157 (US). FRYDMAN, Arnaldo [CA/US]; 3410 South Main Street, Apt. F7, Santa Ana, CA 92707 (US). PRIMUS, Roy, James [US/US]; 1436 Rosehill Boulevard, Niskayuna, NY 12309 (US). ZAMANSKY, Vladimir [US/US]; 2539 Ivy Road, Ocean-side, CA 92054 (US). ROCHA, Teresa, Grocela [US/US]; 37 Castle Pines, Clifton Park, NY 12065 (US).
- (74) **Agents:** GNIBUS, Michael et al.; General Electric Company, Global Patent Operation, 187 Danbury Road., Suite 204, Wilton, CT 06897 (US).

- (81) **Designated States (unless otherwise indicated, for every kind of national protection available):** AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.
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**Declarations under Rule 4.17:**

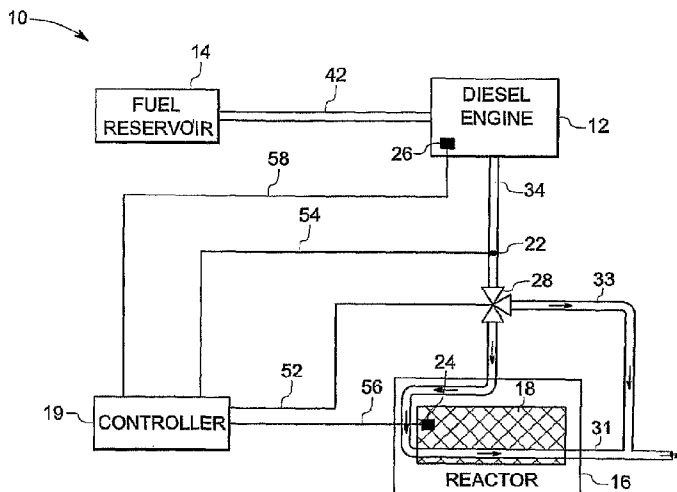
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii))
- as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii))

**Published:**

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) **Title:** METHOD AND SYSTEM FOR REGENERATION OF A CATALYST



(57) **Abstract:** The disclosed embodiments relate to a method and system (10) for regeneration of a catalyst (18). The system includes an engine (12) that creates an exhaust stream, a reactor (16) that includes the catalyst is in fluid communication with the engine to receive the exhaust stream and a sensor (22) that measures a system parameter related to the engine or the reactor and produces a signal corresponding to the system parameter. The system also includes a controller (19) that receives the signal and directs the exhaust stream to the catalyst if the system parameter is indicative of a regeneration value.

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*For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.*

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-16

System for regeneration of a catalyst and a railroad locomotive comprising said system.  
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2. claims: 17-26

method for regeneration of a catalyst  
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# INTERNATIONAL SEARCH REPORT

International application No.  
PCT/US2006/023794

## Box 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 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:

see additional sheet

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.:

1-16

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

**INTERNATIONAL SEARCH REPORT**

International application No  
**PCT/US2006/023794**

**A. CLASSIFICATION OF SUBJECT MATTER**  
INV. F01N3/08 F01N3/20 F01N9/00

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)  
F01N

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 practical, search terms used)

EP0-Internal

**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 540 280 A1 (TOYOTA MOTOR CO LTD [JP]) 5 May 1993 (1993-05-05)	1,2,5, 7-9
Y	column 3, line 47 - column 9, line 49; figures 1-4	13-16
Y	----- US 5 829 248 A (CLIFTON BRIAN J [US]) 3 November 1998 (1998-11-03)	13-16
	column 2, line 1 - line 23 column 4, line 32 - line 49; figure 1	
A	----- EP 1 484 103 A (UMICORE AG & CO KG [DE]) 8 December 2004 (2004-12-08)	1-16
	column 4, line 3 - column 9, line 29; figures 1-3	
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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 document 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 another 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

27 October 2006

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Name and mailing address of the ISA/

European Patent Office, P.B. 5818 Patentlaan 2  
NL - 2280 HV Rijswijk  
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,  
Fax: (+31-70) 340-3016

Authorized officer

Zebst, Marc

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No

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