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[Continued on next page]

(54) Title: EXHAUST GAS PURIFYING CATALYST

Fig. 1

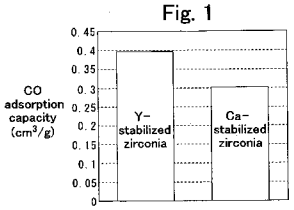


Fig. 2

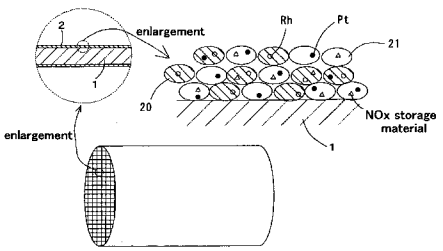


Fig. 3

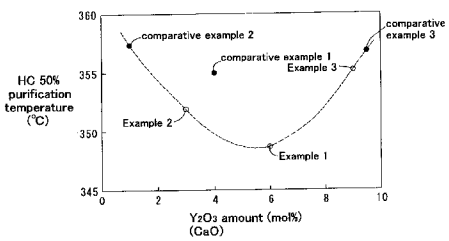
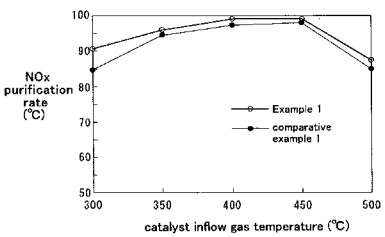


Fig. 4



(57) Abstract: Disclosed is an exhaust gas purifying catalyst, including Rh/Y-ZrO_2 particles obtained by supporting Rh on zirconia support particles which contain yttria, wherein yttria is contained in an amount of 2~9 mol% in the support particles. The exhaust gas purifying catalyst exhibits a superior high-temperature durability because the zirconia support can resist heat, thereby particularly increasing the structure retaining power and the thermal stability of Rh.

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Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
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C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	EP 0 414 573 A (TONEN CORP [JP]; PETROLEUM ENERGY CENTER FOUND [JP]) 27 February 1991 (1991-02-27) page 3, lines 12-27 - lines 47-57; claims 1-4 page 4, lines 10-12 page 5, lines 31-37	1,2
X	US 5 232 890 A (GANGULI PARTHA S [US] ET AL) 3 August 1993 (1993-08-03) column 1, lines 64-68 - column 2, lines 16-20; claims 1-4 column 3, lines 60-64	1,2
X	US 5 275 997 A (GANGULI PARTHA S [US] ET AL) 4 January 1994 (1994-01-04) column 3, lines 25-35; examples 1-3	1,2

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[X] Further documents are listed in the continuation of Box C. [X] See patent family annex.

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PCT/JP2008/065801

C(Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 5 814 576 A (YAMAMOTO SHINJI [JP]) 29 September 1998 (1998-09-29) column 5, lines 12-19 - lines 34-37; claims 1,3; examples 1,4; table 2 column 6, lines 22-24	1,2
X	EP 0 443 765 A (ENGELHARD CORP [US]) 28 August 1991 (1991-08-28) page 3, line 33 - page 4, line 5; claims 1,11,12,16 page 6, lines 46-56 page 7, lines 36,37	1-4
A	EP 1 036 591 A (TOYOTA MOTOR CO LTD [JP]) 20 September 2000 (2000-09-20) paragraphs [0002] - [0024], [0037], [0038], [0043], [0054]; claims 1,2; figures 9,10,14	1-4
A	JP 2000 070717 A (TOYOTA CENTRAL RES & DEV) 7 March 2000 (2000-03-07) paragraphs [0008], [0009], [0011], [0013], [0015], [0022], [0027], [0031] - [0035]; claims 1,3,5; example 1	1-4
A	EP 1 036 767 A (TOYODA CHUO KENKYUSHO KK [JP] TOYOTA CHUO KENKYUSHO KK [JP]) 20 September 2000 (2000-09-20) paragraphs [0015] - [0019], [0047] - [0057], [0066], [0086], [0093], [0101], [0102]; claims 3,4; figure 6	1-4
A	US 6 878 354 B1 (MITSUDA KENRO [JP] ET AL) 12 April 2005 (2005-04-12) column 1, line 38 - column 2, line 17; figures 4,11 column 8, line 31 - column 9, line 7; example 3	1-4

Form PCT/ISA/210 (continuation of second sheet) (April 2005)

INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No
PCT/JP2008/065801

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0414573 A	27-02-1991	DE 69006802 D1	31-03-1994
		DE 69006802 T2	25-08-1994
		DK 0414573 T3	11-04-1994
		JP 3080937 A	05-04-1991
		US 5075277 A	24-12-1991
US 5232890 A	03-08-1993	CA 2101676 A1	31-01-1995
		EP 0637461 A1	08-02-1995
		JP 7060118 A	07-03-1995
US 5275997 A	04-01-1994	NONE	
US 5814576 A	29-09-1998	JP 3498453 B2	16-02-2004
		JP 9141098 A	03-06-1997
EP 0443765 A	28-08-1991	AT 218921 T	15-06-2002
		CA 2034063 A1	23-08-1991
		DE 69133034 D1	18-07-2002
		DE 69133034 T2	17-10-2002
		JP 3274688 B2	15-04-2002
		JP 4219140 A	10-08-1992
		US 5057483 A	15-10-1991
		ZA 9100431 A	29-01-1992
EP 1036591 A	20-09-2000	CA 2314358 A1	17-06-1999
		DE 69833964 T2	01-03-2007
		WO 9929417 A1	17-06-1999
		JP 3741303 B2	01-02-2006
		JP 11226404 A	24-08-1999
		KR 20010032907 A	25-04-2001
		US 6461579 B1	08-10-2002
JP 2000070717 A	07-03-2000	NONE	
EP 1036767 A	20-09-2000	DE 60032044 T2	06-06-2007
		JP 3643948 B2	27-04-2005
		JP 2000327329 A	28-11-2000
		US 6391276 B1	21-05-2002
US 6878354 B1	12-04-2005	NONE	