

(19) World Intellectual Property Organization
International Bureau(43) International Publication Date
7 July 2011 (07.07.2011)(10) International Publication Number
WO 2011/081727 A3

(51) International Patent Classification:

F01N 3/08 (2006.01) *B01J 21/06* (2006.01)
B01D 53/94 (2006.01) *F01N 3/20* (2006.01)

(21) International Application Number:

PCT/US2010/056485

(22) International Filing Date:

12 November 2010 (12.11.2010)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

12/638,166 15 December 2009 (15.12.2009) US

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(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM,

AO, AT, AU, AZ, BA, BB, BG, BH, BR, BW, BY, BZ, CA, CH, CL, CN, CO, CR, CU, CZ, DE, DK, DM, DO, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, GT, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LY, MA, MD, ME, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PE, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, ST, SV, SY, TH, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LR, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AL, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HR, HU, IE, IS, IT, LT, LU, LV, MC, MK, MT, NL, NO, PL, PT, RO, RS, SE, SI, SK, SM, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report (Art. 21(3))
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments (Rule 48.2(h))

(88) Date of publication of the international search report:

9 September 2011

(54) Title: SELECTIVE CATALYTIC REDUCTION SYSTEM FOR CAPTURE OF VOLATILIZED COMPOUNDS

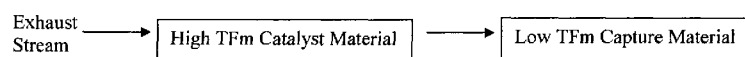


Figure 1

(57) Abstract: An apparatus and method for treating diesel exhaust gases are described. The system consists of two functionalities, the first being a selective catalytic reduction (SCR) catalyst system and the second being a capture material for capturing catalyst components that have appreciable volatility under extreme exposure conditions. The SCR catalyst component is typically based on a majority phase of titania, with added minority-phase catalyst components comprising of one or more of the oxides of vanadium, silicon, tungsten, molybdenum, iron, cerium, phosphorous, copper and/or manganese vanadia. The capture material typically comprises a majority phase of high surface area oxides such as silica-stabilized titania, alumina, or stabilized alumina, for example, wherein the capture material maintains a low total fractional monolayer coverage of minority phase oxides for the duration of the extreme exposure. The method involves treatment of hot exhaust streams by both the catalyst material and capture material, wherein the capture material can be in a mixture with the catalyst material, or can be located downstream thereof, or both, but still be maintained at the extreme temperatures. Volatile catalyst components such as vanadia and tungsta are thus removed from the vapor phase of the exhaust gas.