

Nissan Cuts In Half Amount of Precious Metals Required in Catalysts

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(PhysOrg.com) -- Nissan Motor Company Inc. has announced a new ultra-low precious metal catalyst that will cut in half the amount of precious metals used by car manufacturers. The new catalyst will be introduced in the new "Cube" compact car that will be announced on November 19, 2008. According to Motohiko Hamada, Nikkei Automotive Technology, the new ultra-low precious metal catalyst which purifies exhaust gas is the first in the world.

The "Cube" compact car is equipped with an underfloor ultra-low precious metal catalyst uses 0.65g precious metals as compared to 1.3g used presently in the car manufacturer industry. Notwithstanding the lower precious metal use, the new "Cube" has emission levels 75-percent lower than exhaust emission standards established in 2005 by Japan. It is rated as a Super Ultra Low Emission Vehicle, (SU-LEV).

Nissan recognizes the limited supply and rising costs of platinum, palladium and rhodium, key precious metals used in the manufacturing of catalysts. Car manufacturers use approximately 50-percent of the platinum mined each year and approximately 80-percent of the world's rhodium. Thus, Nissan's technology will be a cost-saver and go a long way to curb the depletion of scarce precious metals. Nissan's development of the ultra-low precious metal catalyst is viewed by the company as critical to the car manufacturing industry.

Existing catalyst tend to cluster platinum due to the heat generated while the automobile is running. The clustering impairs the purification

performance because it reduces the surface area exposed to exhaust gas. Heretofore, precious metals had to be added in order to compensate for performance degradation.

Nissan solved this performance problem by creating physical partitions around the substrate to avoid the reduction of surface area exposed to exhaust gas. This process is called precious metal aggregation and is applicable to platinum, palladium and rhodium key precious metals.

Nissan developed this technology in collaboration with Renault SAS of France. Both Nissan and Renault intend to introduce the technology in cars. The ultra-low precious metal catalyst will be manufactured at Nissan's Yokohama plant and the company envisions it will be introduced eventually to the Japanese automobile industry and other non-automotive sectors.

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