

Initially, the idea was to boost oxygen production to support the recovery of the ozone layer, by passing water through a process we call “electrolysis”. Electrolysis would have broken down the water molecules into Hydrogen and Oxygen gas, and so all that was left was to figure out how to emit the oxygen gas to the stratosphere. However, that idea got scrapped because it wasn’t sustainable in any way; a lot of water would have been required for this to happen, and a large scale project of such sort may drastically cause shortage of water around the world. So, this was not so sustainable.

Eventually, it was decided to revise the design of the typical catalytic converter into something that should guarantee, if not 100%, the emission of gases to be less harmful for us. Currently, even the converters used today emit hazardous gases, namely carbon monoxide, methane and quite rarely even nitrogen oxides, all of which damage the ozone layers significantly.

What I had to target was the control of carbon monoxide emissions, since that gas in itself is heavily responsible for air pollution. Carbon Monoxide is achieved when any carbon-related chemical undergoes combustion, but under very little oxygen. Normally, when there is enough oxygen present, you get carbon dioxide, but the lack of oxygen in combustion results in carbon monoxide. This reaction can happen if the car is being driven in an extremely cold engine, or if the fuel inside the car is too cold to undergo successful combustion. What was then required is to guarantee that such a reaction does not emit out of the vehicle.

This is a kind of converter that should not even replace your vehicle's catalytic converter, but it can be attached to its tailpipe to maximize efficiency. The internal structure will be plated with Nickel, as nickel works as an excellent catalyst in hydrogenation reactions. The inside will also consist of Iron (III) Oxide (a.k.a. Ferric Oxide), a tannish-red powder that will oxidize the carbon monoxide and cause a chemical reaction to turn it into carbon dioxide, a less-harmful gas to emit. The result of passing Carbon Monoxide and Hydrogen gas through this device will result in Iron (residue will remain inside the converter), Carbon Dioxide, Hydrogen Gas, and Steam, all of which are, compared to the initial gases, much safer for the environment.

Sources:

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