

## Licensable Technologies

# Endure SCR™

### Applications:

- Light and heavy trucks
- SUVs
- Vans
- Sedans
- Locomotives.

### Benefits:

- Enables vehicle conversion to diesel power to take advantage of 25% to 35% mpg advantage.
- Allows diesel-powered vehicles to meet increasingly stringent EPA standards for the reduction of NO<sub>x</sub>.
- Operates efficiently from 150° C to as high as 500° C.
- Converts from 90% to greater than 98% of NO<sub>x</sub>
- Requires no expensive precious metals and no complex engine controls.
- Technology is highly compatible with existing manufacturing techniques.

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*The streaming headlights on a nighttime freeway, symbolic of the traffic carried day and night by U.S. roads, form the background for a heavy truck and a small passenger car. Those vehicles represent the two ends of the automotive spectrum that could benefit from an efficient catalytic system that reduces harmful nitrogen oxide (NO<sub>x</sub>) emissions in diesel-engine exhaust.*

### Summary:

Endure SCR™ (formerly NO<sub>x</sub> HyCat) is an advanced catalytic system designed by Los Alamos National Laboratory (LANL) researchers to mitigate environmentally problematic forms of nitrogen oxide (NO<sub>x</sub>) compounds inherent in exhaust systems found in diesel engines and factory operations.

This technology is unique in that it functions efficiently over a broad range of temperatures (150° C to 500° C) reducing up to 98 percent of NO<sub>x</sub> emissions. Endure SCR™ includes an innovative iron zeolite catalyst augmented with cerium-manganese oxide configured to produce an optimum ratio of exhaust components at low temperature. LANL's patented catalyst composition and structure enables efficient NO<sub>x</sub> reduction at a broad temperature range unattainable by competing technologies.

### Development Stage:

Reduced to practice.

### Patent Status:

Patent pending

### Licensing Status:

Endure SCR™ is available for non-exclusive licensing by LANL for automotive industry applications. All other fields-of-use have been exclusively licensed by CleanAIR Systems, Inc. Interest in sublicensing this technology from CleanAIR Systems, Inc. should be directed to the company. For more information, please call CleanAIR Systems, Inc. at (505) 474-4120 or visit their website at [www.cleanairsys.com](http://www.cleanairsys.com).

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