

## A Novel NOx and Particulate Matter Filter Using Non-Thermal Plasma

### KEY FEATURES

- Retrofitted to the exhaust system
- Adaptable to all diesel engines
- NOx reduction
- PM reduction

### ADVANTAGES

- Active control system compatible for energy efficiency
- Adapted to different applications using pulsed power signal.
- Does not breach engine's warranty

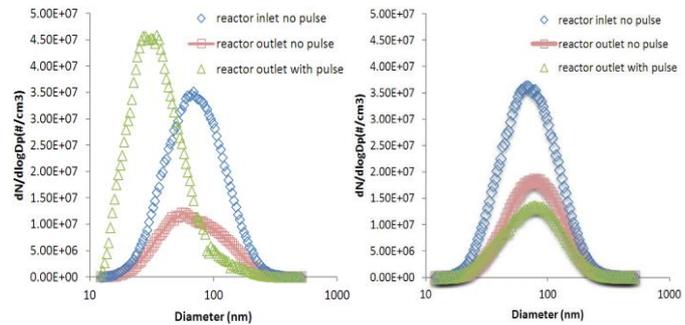
### CHALLENGE

Emissions reduction is a common goal across the transportation sector, driven by greater awareness of the damaging effects to both people and environment and significant tightening of compliance standards over the past few years. Vehicle emissions include Carbon dioxide (CO<sub>2</sub>), Nitrous Oxide (NO<sub>x</sub>), Sulphur Dioxide (SO<sub>x</sub>) and particulate matter (PM).

In 2015, Tier 4 requirements were introduced which reduced particulate matter limits by a further 70% and NO<sub>x</sub> emissions by 76% from Tier 3 emission levels. These levels are much more challenging and other solutions should be considered.

### SOLUTION

Researchers at The University of Queensland (UQ) have developed Non-thermal plasma (NTP) treatment of exhaust



PM size and density control based on Pulsed Power

gas as a promising technology for both nitrogen oxides (NO<sub>x</sub>) and particulate matter (PM) reduction by introducing plasma into the exhaust gases. This study considers the effects of NTP on PM mass reduction, PM size distribution and PM removal efficiency. The experiments have been performed on real exhaust gases from a diesel engine and preliminary results are promising.

### COMMERCIALISATION OPPORTUNITY

UniQuest is seeking industry partners to assist in development, and licensees interested in taking this unique, novel technology to the global market.

### PARTNERSHIPS

UniQuest is Australia's leading university commercialising entity, specialising in global technology transfer and facilitating business access to the world-class expertise, intellectual property and facilities of UQ.

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The University of Queensland (UQ) ranks in the top 50 as measured by the Performance Ranking of Scientific Papers for World Universities. The University also ranks 51 in the QS World University Rankings, 47 in the US News Best Global Universities Rankings, 60 in the Times Higher Education World University Rankings and 55 in the Academic Ranking of World Universities.

## ABOUT UNIQUEST

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