

SBIR 06.2 PHASE I - AWARD DETAILS	
ORGANIZATION	TARDEC
TOPIC NUMBER	A06-237
CONTRACT NUMBER	
YEAR OF AWARD	
AWARD START DATE	
AWARD COMPLETION DATE	
PROPOSAL NUMBER	A062-237-2589
TITLE	Pollution Control Technologies for Use with High Sulfur Fuels
PROJECT MANAGER	James H. White (303) 530-0263 eltron@eltronresearch.com
COMPANY	Eltron Research, Inc. 4600 Nautilus Court South Boulder CO 80301-3241 Minority Owned: No Veteran Owned: No Number of Employees: 43
KEYWORDS	sulfur tolerant, nitrogen oxides, pollution control
ABSTRACT	The state-of-the-art pollution control technology for highway diesel engines is the NOx storage–release (NSR) trap and the catalytic diesel particulate filter (CDPF). The NSR incorporates precious metal and basic functions for oxidizing NO and adsorbing NO2. This makes the device vulnerable to the presence of sulfur oxides in exhaust gas; the adsorber is irreversibly poisoned at fuel sulfur levels of >15 ppm, requiring use of ultra-low sulfur diesel (ULSD). Because of the sulfur levels of JP 8, pollution control devices employed in civilian automobiles are not applicable to the military. This proposed project will apply Eltron’s sulfur tolerant catalytic technology for after-treatment of exhausts from logistic fueled engines. The technology is based on a passive lean NOx catalyst which has demonstrated activity greatly exceeding that of competing passive lean NOx catalysts for NOx removal from diesel exhaust at an estimated current cost of ~\$350 (versus ~\$1400 for a catalytic NOx trap) for a heavy vehicle. Phase I will validate previous results, optimize catalysts, and test the catalyst in the exhaust of an engine operating on logistic fuel. Phase II will demonstrate a retrofit catalyst which outperforms existing technologies, while minimizing costs while transitioning the technology to the Army procurement system.
BENEFITS	At the conclusion of the overall effort, we will have demonstrated a sulfur tolerant diesel exhaust after-treatment technology for nitrogen oxides abatement. It would comprise the only available such technology and would be less expensive than existing NSR technology. We anticipate that the technology would be applicable to both on- and off-road diesel retrofit markets. The technology will also be applicable to exhausts from lean burn gasoline engines, natural gas fired boilers and turbines, and coal-fired combustion sources and has already garnered the interest of a major catalyst manufacturer.