Grant Deliverables and Reporting Requirements for UTC Grants

UTC Project Information	
Project Title	Smart Sensors to Reduce Pollutant Emissions in Transportation, Phase II
University	The University of Texas at El Paso (UTEP)
Principal Investigator	Ramana Chintalapalle
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Funding Source(s) and Amounts Provided (by each agency or organization)	USDOT: $60,000 UTEP: $40,056
Total Project Cost	$100,056
Agency ID or Contract Number	Sponsor Source: Federal Government CFDA #: 20.701 Agreement ID: 69A3551747119
Start and End Dates	Start date: 10/01/2018 End date: 03/31/2020
Brief Description of Research Project	Today's automobiles lack flexibility in design and contribute to the major portion of pollution. This project intends to design, develop, evaluate, and demonstrate the feasibility of smart sensors for utilization in advanced transportation to reduce pollution. The project objectives are: (1) Design and performance test oxygen sensors for combustion engines and (2) Demonstrate the temperature independent "smart sensing" features for emission control and fuel efficiency in transportation systems. This is the Phase-II of a multi-year project. The methodologies to be developed are expected to be applicable in a broader context.
Describe Implementation of Research Outcomes (or why not implemented) Place Any Photos Here	**Outputs:** The structure and quality of the BFTO30 compounds can be controlled by tuning the processing temperature in the manufacturing process. The electrical conductivity of the BFTO30 compound is stable at a variety of high temperature. **Outcomes:** The quality of the BFTO30 ceramic finished product, including its thermal and electrical properties have been found to be stable, further proven the feasibility of this material in oxygen sensors.

Impacts/Benefits of Implementation (actual, not anticipated)	This research has further demonstrated the feasibility of BFTO30 ceramics as material for use in oxygen sensor. This material has the potential to be used to manufacture sensors that are used in combustion engines to control the optimal oxygen intake for improve engine efficiency and reduce emissions.
Web Links • Reports • Project website	http://ctech.cee.cornell.edu/final-project-reports/