

## **Project Title: Statistically Validated Codes and Standards - Stationary Fuel Cells**

### **Principal Investigator:**

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### **Student Involvement: Yes**

**Project Objective:** The objective of the proposed research is statistical validation of codes and standards for a stationary fuel cell installed at UMR and/or FLW.

**Project Abstract:** Although hydrogen has an established history in industrial use, its use as an energy carrier on a large commercial scale remains largely untested and undeveloped. The development of hydrogen codes and standards is critical to establish a consumer-receptive environment for hydrogen-based systems. For successful development of hydrogen infrastructure establishment, research and development efforts are essential to strengthen the scientific bases for technical requirements incorporated in national and international standards. The objective of the proposed research is statistical validation of codes and standards in collaboration with appropriate organizations for a stationary fuel cell installed at UMR and/or FLW.

**Anticipated Benefits:** Installation and operation of a commercially available 5kW PEM stationary fuel cell on UMR campus will allow statistical validation of some critical safety codes and standards and improve the knowledge and public acceptance of the hydrogen economy.

**Modal Orientation:** Stationary fuel cells

**Relationship to other Research/Projects:** The proposed project is related to the development of a rural hydrogen transportation test bed that will demonstrate, evaluate and promote hydrogen-based technologies in a real-world environment.

### **Technology Transfer Activities:**

1. Technical reports showing findings, conclusions and recommendations;
2. Technical papers for publication in conference proceedings and journals; and
3. Development of consensus codes and standards.

**Transportation Research Board Keywords:** Hydrogen, Fuel Cell, Safety Codes and Standards