



STUDENT GREEN ENERGY FUND

BSF Exhaust Fume Hoods Retrofit



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Ph.D. Candidate

University of South Florida

Project Title	BSF Exhaust Fume Hoods Retrofit
Principle Investigator	Arun Kumar Narasimhan
Proposed Starting Date	July 2018
Project duration	8 months
PI Expected graduation date	May 2019
Requested SGEF Funds	\$ 75,993

Applicant Information:	Full Name	Department	Email Address	Phone
Principal Investigator	Arun Kumar Narasimhan	Chemical & Biomedical Engineering	arunkumar@usf.edu	813-451-0612

Project description:

The fume hoods and the mechanical ventilation systems operate at high constant air flow rates at all times resulting in a very large energy consumption and consequently very large carbon footprint. Per Occupational Safety and Health Administration (OSHA) regulations, the exhaust hoods must exhaust air at a face velocity of 100 feet per minute across the face area of the sash opening. This air must be made up through mechanical ventilation system, where the air is cooled and dehumidified first and then reheated before introducing into the occupied space. In Tampa, this simultaneous heating and cooling of outdoor air and then eventually exhausting it through the exhaust hoods goes on 24x7 and 365 days of the year. The potential to save energy, while complying with the regulatory and user comfort level standards, lies in controlling the air flow

Project Sustainability:

Facilities Management Division has agreed to operate and maintain the system in the future.

Project Budget Breakdown:

This request is quoted for 8 fume hoods that are located in two labs.

ECS Quote	\$56,493
Permit	\$500
Work by Others ¹	\$7,000
Engineering ² + TAB (Testing and Balancing)	\$7,000
Student Rate	\$5,000 (For 1 year)
Total Project Cost	\$75,993