**Objective**

To attain a position with an organization where my skills will be effectively augmented in utilizing integrated strategies to develop and expand matters in the field of Mechanical Engineering

**Summary**

* Over five years of research experience with strong background in thermal energy storage system and encapsulation of phase change material (PCM) with polymers, metal and ceramic
* Designed and constructed a 1kWhth latent heat packed bed storage with encapsulated PCM
* Hands-on experience with various material characterization techniques
* Expertise in electroplating metal (nickel and zinc) on polymers and ceramics
* Synthesized graphene based nano particles and characterization for water purification
* Instructed in instrumentation and measurement lab (slide calipers, strain gauge, lab view)
* Operated and maintained the 50 kWe parabolic trough solar power plant
* Published peer reviewed journal and conference papers on encapsulation technique and storage
* Designed a 1 MW PV power plant with cost analysis by using System Advisor Model

**Experience**

# *Graduate Research Assistant* August 2010 to 2015

Department of Mechanical Engineering, University of South Florida, Tampa, FL

***Clean Energy Research Center, Tampa, FL*** January 2012 to 2015

* Coordinated the low temperature PCM based TES project with E-On Corporation and DOE
* Encapsulated PCM for latent heat thermal energy storage and thermal cycling the capsules
* Characterized different PCMs and coating materials using Thermo Gravimetric Analysis (TGA)
* Electroplated metal on polymer and ceramic materials
* Designed and constructed a 1kWhth latent heat packed bed storage with encapsulated PCM
* Investigated thermal cycling behavior of the capsules in packed bed storage environment
* Operated and maintained the 50 kWe parabolic trough solar power plant
* Trained undergraduate and new PhD students with different characterization instruments

***Advanced Material Lab, Tampa, FL*** August 2010 to April 2012

* Synthesized graphene metal oxide nano particles to remove heavy metal & organic material from water
* Characterized different nano materials using Scanning Electron Microscopy (SEM), Energy Dispersive Spectroscopy (EDS), and X-Ray Diffraction Spectroscopy (XRD)

***Graduate Teaching Assistant*** August 2010 to present

Department of Mechanical Engineering, University of South Florida, Tampa, FL

* Instructed students in Mechanical Instrumentation lab to teach various measurement techniques such as measurement with slide calipers, thermocouple setup, data acquisition system
* Modified and updated the instrumentation and measurement lab manual
* Mentored students in Advanced Mathematics II and Advanced Conduction Heat transfer course

***Undergraduate Project*** 2008-2009

* Designed and constructed an automated viscosity measurement device

***Internship*** June 2008-July 2008

Aftab Automobiles Limited, Chittagong, Bangladesh

* Exposed to different sections in Automobile assembly line to gain practical experience of assembling chassis, shock absorber, breaks and other parts of the automobile

**Skills**

* Characterization Techniques: Thermo Gravimetric Analysis (TGA), Scanning Electron Microscopy (SEM), Energy Dispersive Spectroscopy (EDS), X-Ray Diffraction Spectroscopy (XRD), Optical microscopy, and XFA 300/600 Linseis Diffusivity Measurement Apparatus
* Software: Solidworks, Microsoft office suit, TA Universal Analysis, System Advisor Model and Visio, MATLAB
* Electroplating techniques: Electroless nickel plating and Electroplating of Nickel and Zinc
* Additional Languages: Bangla

**Education**

***Doctor of Philosophy in Mechanical Engineering*** August 2015

University of South Florida, Tampa, FL

Supervisor: D. Yogi Goswami, PhD; GPA 3.88/4.00

***Master of Science in Mechanical Engineering*** May 2012

University of South Florida, Tampa, FL

Supervisor: Ajit Mujumdar, PhD; GPA 3.88/4.00

***Bachelor of Science in Mechanical Engineering*** October 2009

Bangladesh University of Engineering and Technology, Dhaka Bangladesh

Supervisor: Abu Rayhan Md Ali,PhD; GPA 3.53/4.00

**Awards and Honors**

* Best Poster Award (Travel Grant)

Research Day at University of South Florida 2013

* Merit Scholarship

Bangladesh University of Engineering & Technology, Dhaka, Bangladesh 2004-2009

* Education Board Scholarship

Government of People’s Republic of Bangladesh, Dhaka Bangladesh 2002-2004

**Student Involvement**

* American Society of Mechanical Engineers (ASME) 2013-present
* Co-Founder and active member of Ex-Udayan Students Friendship Society 2006-present
* American Water Works Association 2015-present

**Hobbies & Interests**

* Playing Cricket and tennis
* Cooking
* Travelling