

## HANUMANTH REDDY PALLE

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### SUMMARY

Research assistant with experience in inverse Heat transfer analysis, scheduling and testing Li-ion batteries. Adept in writing technical reports and giving oral presentations. Display of analytical thinking and critical reasoning in analyzing, processing and modeling thermal/ electrical data of batteries using MATLAB and Excel. Supervised and guided many student teams in achieving their project goals as a Teaching Assistant. Seeking to bring effective problem solving and team working skills to your company.

### EDUCATION

**Texas A&M University**, College Station, Texas May 2017  
Masters in Mechanical Engineering, GPA: 3.14

**Osmania University**, Hyderabad, India June 2015  
Bachelors in Mechanical Engineering, CGPA: 8.45

### SKILLS

**Software:** AUTOCAD 2012, MATLAB, MITS Pro, CATIA V5, SOLIDWORKS, MSC ADAMS, ANSYS, CNC programming, C and C++, MS Office suite (2003 – 2013), Adobe Photoshop and windows (XP, 7, 8) OS.

**Technical:** Arbin BT2000 testing System, hands on various machines and tools in Machine shop, various tools from Metrology and Instrumentation lab, various experimental setups in Thermal engineering lab, tensile, torsion, impact and hardness testing machines.

### EXPERIENCE

**Graduate Research Assistant** at Energy and Transport Sciences Lab, TAMU – College Station Jan 2016 – present  
Topic: Thermal implications in Li-ion batteries based on experimental and theoretical analysis

**Graduate Teaching Assistant** at Texas A&M University, College Station Sept – Dec 2016  
Course: Statics and Particle Dynamics Jan – May 2017  
Course: Heat Transfer Jan – May 2017  
Course: Thermo-fluid Analysis and Design June – Aug 2014

**Manufacturing Intern**, Advanced Systems Laboratory, DRDO, Hyderabad, India June – Aug 2014  
**Manufacturing processes and aging studies of CFRP composites**  

- Conducted a study on various types of composites, their manufacturing processes and aging of CFRP composites.
- Developed a tool using C++ for calculating the aging time of CFRP composites.

### PUBLICATIONS/PRESENTATIONS

**Texas A&M Conference on Energy, TAMU, College Station, TX, Sept 2016.**  
Presentation: “Inverse Heat Transfer Quantification of Heat Generation Rates during Electrochemical Operation of an 18650 Li-ion Cell”

### ACADEMIC PROJECTS

**Correlating cyclic-voltammogram with capacity fade in li-ion batteries**  

- Conducted micro-cyclic voltammetry on fresh and cycled cells, studied reaction kinetics and correlated the effects of cycling on capacity fade due to the formation of Solid Electrolyte Interface (SEI) layer with variations in voltammograms.

**Improvement of heat transfer in fins by using the shape memory alloys**  

- Investigated the feasibility of using shape memory alloys (SMA) as fins and modeled and simulated working of a fin using SMA in MATLAB and calculated the effectiveness of SMA fin over an ordinary (copper, aluminum) fin.

**Modeling of Two Phase Multicomponent flow for the Cathode of Polymer Electrolyte Membrane Fuel Cell**  

- Modeled 1D two -phase multicomponent non-isothermal flow for analyzing the transport limitations in the cathode of polymer electrolyte fuel cell.

**Effect of clearances in revolute joint on the performance of multi-link manipulators**  

- Modeled joints with clearances (planar bearing joint) using ADAMS package and analyzed dynamic behavior of system using Hertzian contact force model and simulated and compared the results for various joint clearances.

### LEADERSHIP ROLES

- Served as chief coordinator and sole graphic designer for MECHARENA 2015, a national level technical symposium held by Dept. of Mech. Engineering, Osmania University, Hyderabad.
- Member of SAE, BAJA team from Osmania university, India.
- Organized MECHARENA 2K14, MECHARENA 2K13 and volunteered MECHARENA 2K12, national level technical symposia held by Dept. of Mech. Engineering, Osmania University, Hyderabad.

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