

Funds Utilisation Report

Dear Mr. Sajal Singh, Thanks for contributing Rs. 5.0 Lakhs to IIT Hyderabad. We have given below a report on the utilisation of funds.

Cause for which donation received:


Research Excellence Award for B.Tech students of Mechanical and Aerospace Engineering (MAE) department. The funds received are utilised to set up an endowment in the name of "Najafi & Singh UG Research Excellence Award in MAE".

The endowment return amount received annually will be about Rs. 25000 and the selected student will be awarded a cash prize of Rs. 25,000 plus a citation. The award will be given every year for one student.

Selection criteria for choosing the awardee:

Nominations were sought from students for this award. A team comprising of Prof. Najafi, Dean IAR and Head of the Department of Mechanical and Aerospace Engineering, department shortlisted the nominations and chose the winner after listening to their presentations. This year **Ms. K V Mridula**, final year B.Tech. Mechanical Engineering student is selected for this award. The winner was announced on the IITH foundation day celebrated on 22.06.2021.

A short profile of Mridula her picture and her topic of research is as under.

<p>Kuppa Venkata Mridula ME17BTECH11050 B.Tech in Mechanical Engineering with Minor in Aerospace Engineering IIT Hyderabad CGPA - 9.4</p>	
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Brief about the research work of Ms. Mridula:

Research work at Purdue University: With increasing interest in large-format Li-ion batteries for automotive applications, we need to better understand the abuse tolerance of these batteries. To this end, I developed a three-dimensional thermal abuse model to study the behavior of a lithium-ion pouch cell under abuse conditions like cell overheat, nail penetration etc. A cell sandwich consisting of the negative current collector, negative electrode, separator, positive electrode and positive current collector subject to the abuse reactions like SEI decomposition, negative solvent reaction, positive active material solvent reaction and electrolyte decomposition reaction was studied. Implicit scheme with lagging was used to model the heat generation terms and Gauss Seidel iterative method was used to solve the final discretized equation. With this model, I was able to obtain the spatial temperature distribution and the onset temperature of thermal runaway in the lithium-ion pouch cell. This project has helped me

develop a thorough understanding of numerical modelling of physical systems and has motivated me to pursue a career in research.

IIT Hyderabad thanks Mr. Sajal Singh for instituting this award.

IIT Hyderabad also thanks Prof. Khalil Najafi of Michigan University for lending his name for this award.



Dean IAR

IIT Hyderabad

Dated: 07.07.2021