

Final Year Project Showcase Batch-2018 Year 2022

Department: Physics Programme: Applied Physics		
1	Project Idea	Lithium-ion cell tester is the circuit which determines the capacity of the lithium-ion cells. Besides that, it can be used to test 80 cells altogether where capacity, cell voltage and current are portrayed on the dashboard of the individual cells.
2	Process	This tester work on the principle of determination of area under the discharging curve obtained for the battery.
3	Outcome	<ul style="list-style-type: none"> The working circuit of this project is basically a POC (Proof of Concept) that justifies that 80 cells can be tested simultaneously with accuracy. This tester generates the curve for the specific cell out of which the capacity can be measured with the method of integration-area under curve. This tester offers modular design, that means any no. of cells tester can be designed from 1 to 80 cells depending on the user demands. This tester is very cost effective. To sum up all, its accurate, modular, cost effective and can offer 80 cells testing.
4	Evidence (Theoretical Basis)	Please provide the summary of the FYP instead of attaching the FYP report.
5	Competitive Advantage or Unique Selling Proposition (Cost Reduction, Process improvement, Attainment of any SDG (Sustainable Development Goal), increase of market share or capturing new market or having superior performance over a competitor. In summary, any striking aspect of the project that compels the industry to invest in FYP or purchase it. Some detailed description is required in terms of how, why when what. You can select one or more from the following dropdown and delete the rest of them). Please keep relevant options, delete the rest of them, and correct the sequence	
a	Attainment of any SDG (e.g. How it is achieved and why it is necessary for the region)	SDG#9: Industry, Innovation and Infrastructure We developed a more accurate and multiple battery tester in affordable price. Which can be a smart and efficient tool for commercial testing.
b	Any Environmental Aspect (e.g. carbon reduction, energy-efficient, etc.)	N/A
c	Cost Reduction of Existing Product	It is cost-effective because it can test multiple cells at the same time.
d	Process Improvement which Leads to Superior Product or Cost Reduction, Efficiency Improvement of the Whole Process (e.g. What is the issue is current process and what improvement you suggests)	This tester can be modified as per the customer requirement for a number of multiple battery testing simultaneously.
e	Expanding of Market share (e.g. how it expand and what is the problem with the current market)	It is not available in the local market

f	Capture New Market (e.g. Niche market or unaddressed segment)	As demand of Li-ion battery increasing day by day due to more capacity and smaller dimension due to which market share will increase.
6	Target Market (Industries, Groups, Individuals, Families, Students, etc) Please provide some detail about the end-user of the product, process, or service	<p>Every single individual and community that works on the li-ion cells is supposed to be targeted. That means all:</p> <ul style="list-style-type: none"> • DIY Communities, • Different startups developing smart and consumer electronics using li-ion cells • Startups for building EVs and E-bikes • Recycling li-ion cells industry • Industry developing high power applications
7	Team Members (Names along with email address)	<p>Adeel Moiz (adeelmoizzafar802@gmail.com) Hafiz Muhammad Saad Yousuf (alvisaad17@gmail.com) Pardeep Kumar (pardeepkumar1727@gmail.com)</p>
8	Supervisor Name (along with email address)	<p>Junaid Kareem Khan (junaidkk@neduet.edu.pk) Dr. Saad Qasim Khan (saadqasimkhan@neduet.edu.pk)</p>
10	Pictures (If any)	 