

BATTERY MANAGEMENT SYSTEM FOR ELECTRIC BIKES



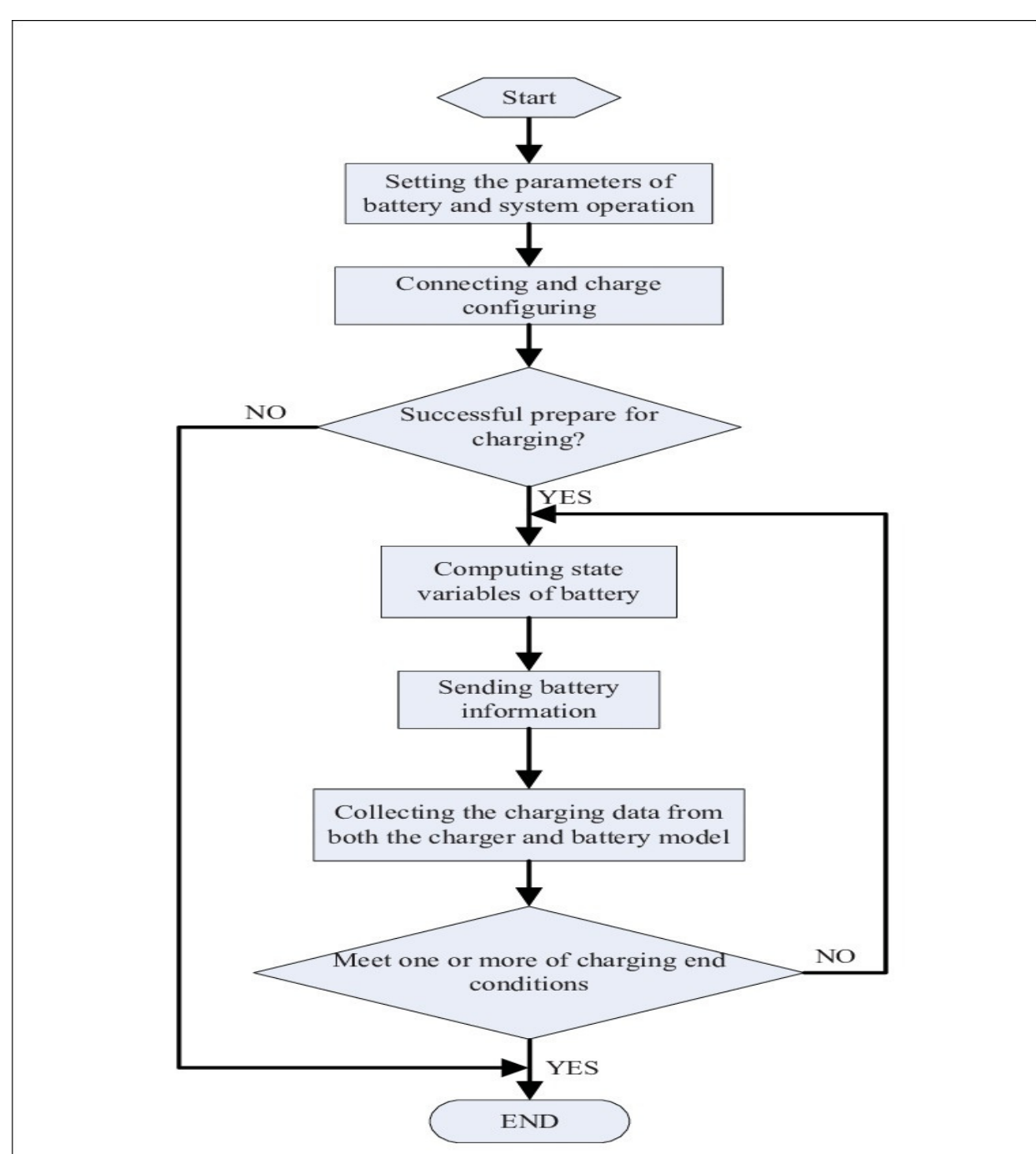
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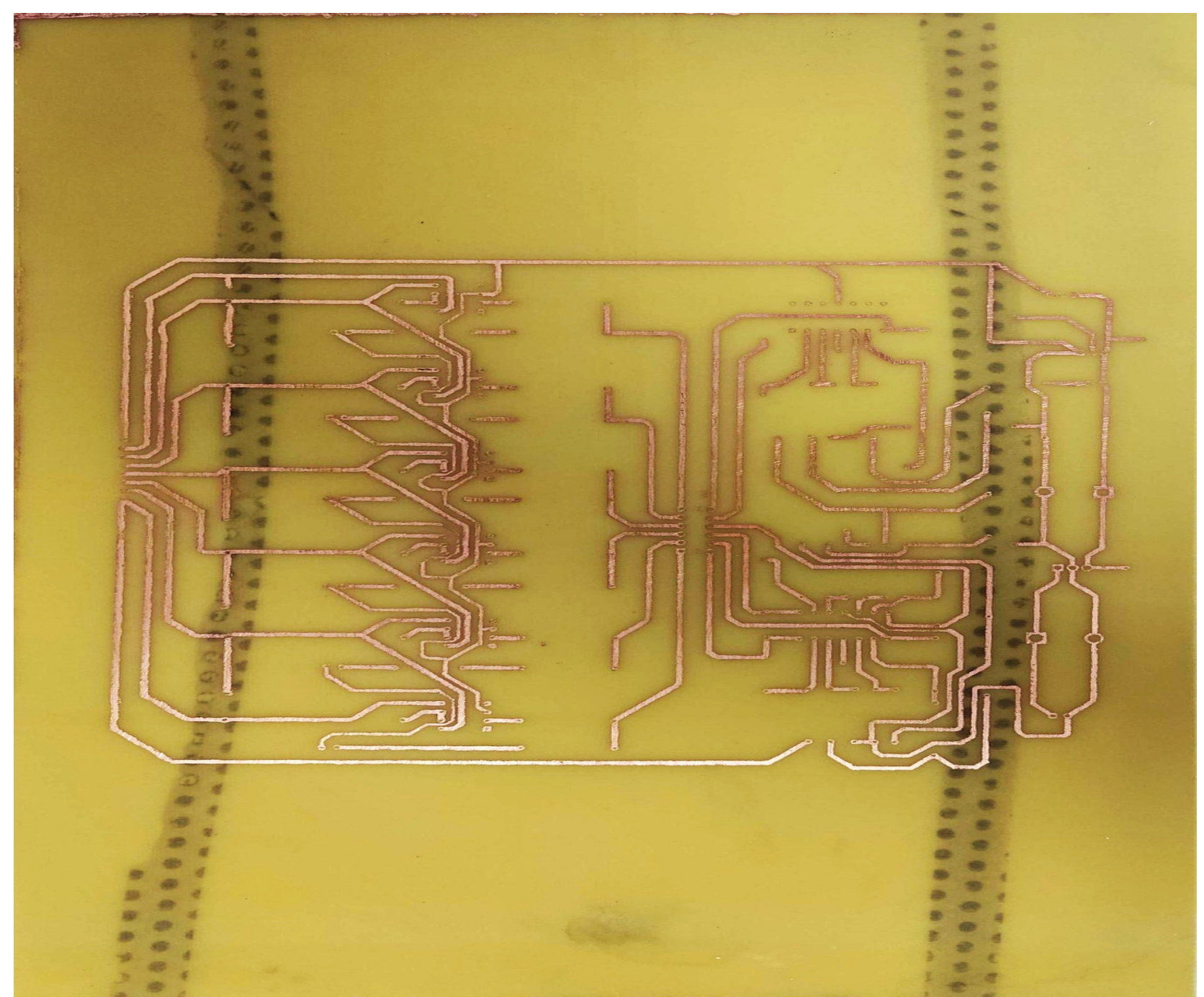
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Abstract

The battery management system developed for electric bicycles is designed to protect the health of each cell in the battery pack. This system ensures that the cells are maintained at the desired nominal values during charging and discharging, protecting their health.



FLOWCHART



CIRCUIT DESIGN WE MADE OURSELVES

Main Components

ATMEGA2560, LM358, DS18B20 , ACS712, TLP250.

Main board

It measures the instantaneous voltage, current, and temperature of the battery pack and decides if they are within the desired values. If there is any problem, it sends information to the Vehicle Control System (VCS) to activate the protections of the vehicle.

Conclusion

Our general purpose protect the circuit with protection methods and balancing for the health and continuity of the circuit. These protection methods are current, temperature, and voltage protections. The battery management system prototype successfully fulfills its purpose. In addition, it can be used not only on a bicycle, but also on anything under suitable conditions.

References

- <http://dSPACE.yildiz.edu.tr/xmlui/bitstream/handle/1/7811/0072583.pdf?sequence=1&isAllowed=y> (Implementation of energy management system on a prototype electric vehicle. Thesis (Master's) - Yıldız Technical University, Institute of Science and Technology, 2011) (Literature Search Sample)
- https://www.direnc.net/?gclid=Cj0KCQjwmtGjBhDhARIsAEqfDEdWR1GC uB6DLoCkvtnQejzEisgTb55O9ZPQhGrlb4DkgMgwIUjJQ4aAveBEALw_wcB (WebsiteSample where components will be procured)
- <https://ozdisan.com/>