



Yangtao Liu

PhD Proposal



July 13, 2020
2:30 pm – 4:00 pm

Zoom meeting

<https://wpi.zoom.us/j/9222490641>

Advisor:

Prof. Yan Wang

Committee:

Prof. Richard Sisson, Jr.

Prof. Satya Shivkumar

Prof. Mei Yang

Prof. Heng Pan

Advanced manufacturing methods for Lithium-ion Batteries

Abstract:

Introducing advance-manufacturing methods to battery processing is an efficient way to meet the highly growing battery market and applications. The conventional battery manufacturing is a heavily polluting industry, which accompanied by high power demand processes. Therefore, more and more governments are introducing environmental policies to restrict emission and power consumption. Beyond the large-scale manufacturing, the portable devices market also requires customizable battery products.

Here we created an aerosol spray based additive manufacturing method to meet the requirement from the customizable market. The non-planar printing technology can also save the limited space for portable devices. For the commercial battery market, a solvent-free roll-to-roll printing system was invented to avoid the toxic organic solvent, lower the manufacturing cost, and save the production time.