



Michael Orr

B.S. in Welding Engineering (2015)

M.S. in Welding Engineering (2016)

Ford Motor Company, Dearborn, MI

Describe your overall duties/responsibilities as a Laser Applications Engineer:

As I am currently changing roles, I will be responsible for all laser applications related to battery manufacturing for Electric Vehicles in Ford's new Battery Center of Excellence--Ford Ion Park. As a new facility, we are procuring battery manufacturing equipment to install a pilot line for research and development of Li-ion Batteries for vehicle electrification. I will be the lead engineer responsible for the purchase, installation, maintenance, development, and operation of lasers for this line--which include applications such as: welding, slitting, notching, drying, drilling, and more. My main goal is to implement laser technology wherever possible within the current and future high-speed battery manufacturing process in order to improve productivity, speed, and quality of manufacturing.

Explain the skills/abilities that are required for being successful in your role:

In order to be successful in my role, it is critical to have a strong knowledge base in current and future laser and vision technologies with a foresight for creating a continuous, high-speed, 0-defect future for battery manufacturing for Ford Motor Company. Additionally, my role requires a skillset focused around the sciences of laser technology and laser processing, which include metallurgy, physics, and chemistry.

Furthermore, I must exemplify leadership, communication, and business skills for working alongside colleagues and suppliers alike in order to create new uses for laser and vision technology to move towards our goal of moving towards an emission-free automotive company.

What advice would you give to students who are considering majoring in Welding Engineering?

Enjoy it! Welding Engineering is a major that opens up a lot of doors for its students. Welding exists in all industries--just look around. A WE graduate can work in automotive, medical, aeronautical, power generation, consulting, research and development, etc. In addition to having various employment options upon graduation, welding is a niche expertise--despite the wide-use of welding, the industry lacks widespread knowledge of the physics and applications of welding processes--you will be an instant asset to any company.

