

EWI ADVISORY SERVICES:

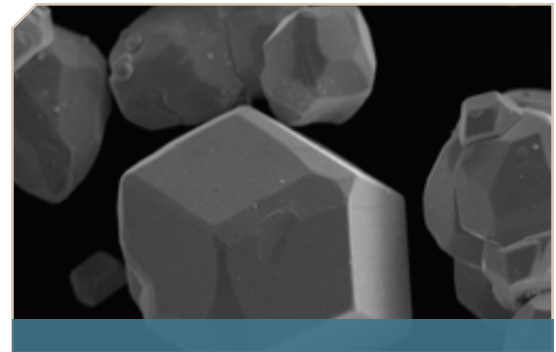
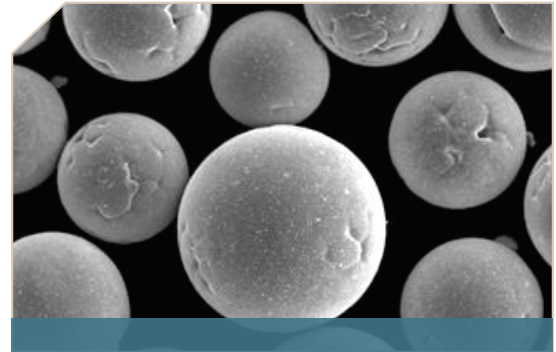
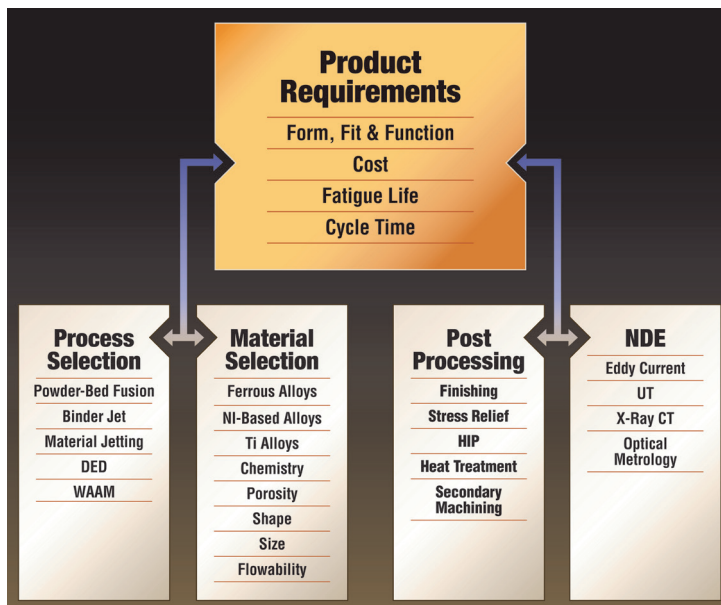
Additive Manufacturing Process Development

EWI specializes in developing process parameter sets to match your specific product requirements.

Every component produced by metal additive manufacturing (AM) has its own unique set of product requirements. Qualification of AM components is critical due to the following issues:

- The lack of a “machinist handbook” for AM processes
- Hundreds of control variables for metal AM machines
- Geometry-specific parameter development requirements
- Inconsistent raw material properties
- No existing industry-wide standards
- The desire to use new and untested alloys in AM applications
- Few reliable process simulation tools
- The need to develop inspection techniques for complex AM geometries

By focusing on all areas of AM development, EWI is uniquely positioned to assist customers in developing the complete solution for their AM needs.



A COMPREHENSIVE APPROACH

Every component produced by metal additive manufacturing (AM) has its own unique set of product requirements.

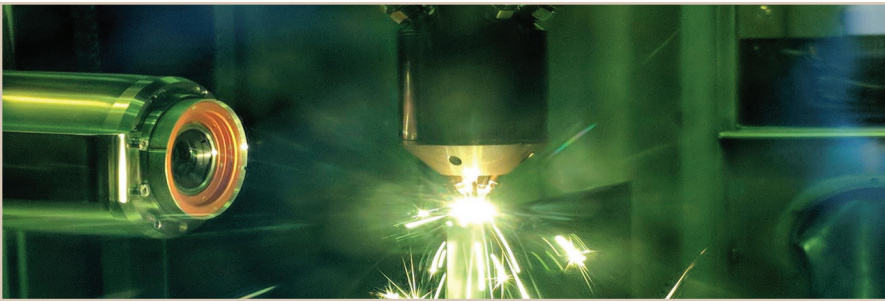
1. Set product requirements and understand trade-offs
2. Select an AM process
3. Modify design for process
4. Select and qualify feedstock
5. Optimize AM machine process parameters
6. Determine post processing methods
7. Define NDE/quality assurance steps
8. Validate process parameters
9. Identify a partner to print parts at production volume

The EWI Advantage

EWI has been at the forefront of additive manufacturing technology development for more than 10 years. Our AM expertise and equipment covers all seven ASTM F42 process categories and is backed by a full range of state-of-the-art equipment in our lab facility.

EWI has the following capital infrastructure in-house to support AM activities:

- **AM systems:**
 - > Laser powder bed fusion (EOS M290 and custom open architecture system)
 - > Electron beam powder bed fusion (Arcam A2X)
 - > Binder jetting (ExOne Innovent)
 - > Laser-directed energy deposition (RPM 557)
 - > Electron beam-directed energy deposition (Sciaky 110)
 - > Robotic AM systems
 - > Multiple polymer AM systems
- **Feedstock characterization tools for:**
 - > Density measurements, flowability, particle size distribution, particle morphology, ONH content, and thermal characteristics
- **Material property characterization:**
 - > Tensile, fatigue, creep, hardness, impact, bend, grain structure, porosity measurement, density, metallographic analysis, and corrosion testing equipment
- **Metrology and NDE capabilities:**
 - > Ultrasound, electromagnetic, X-ray CT, thermography, and microwave based NDE techniques
 - > Surface topography – Optical, non-contact, nm resolution, roughness, shape, waviness, and texture measurements



Get Started

To learn more about additive part design, powder characterization, or process parameter development and how you can benefit from AM in your production, please contact:

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