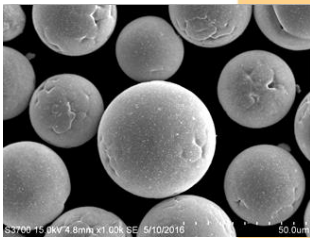
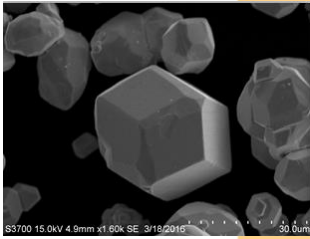


Metal Powder Development for Additive Manufacturing



Adoption of powder-based, metal additive manufacturing (AM) is rapidly increasing. This growth is causing a similar growth in the need for materials for AM, with an expected CAGR of 31% for metal materials through 2022*.

This growing market can be challenging to penetrate. Each AM process – laser powder bed fusion (L-PBF), electron beam powder bed fusion (EB-PBF), laser directed energy deposition (L-DED), and binder jetting – has its own powder requirements, standards for powder quality are still in development, custom process parameters often need to be developed for new powders, and parts are often certified for a set powder manufacture.

EWI works with powder manufacturers to assist them with the challenges of penetrating this growing market.

A COMPREHENSIVE APPROACH

EWI offers a complete suite of validation services for powder makers and their clients who use 3D metal printing in production. Key to these is a set of testing

EWI helps metal powder providers find success in a market that is growing and demands a premium on price on additive manufacturing materials.

and measurement technologies available in the EWI labs to quantify powder characteristics:

Important Properties	Method of Measuring
Density of Particles	Helium Pycnometer/Hall Flow
Flowability	Revolution Powder Analyzer
Particle Size Distribution	Laser Diffraction
Particle Morphology	SEM
Chemical Composition	Gas Content Analyzer
Thermal Characteristics	Differential Scanning Calorimetry/ Thermogravimetric Analyzer

Powder characterization testing can provide confidence in the consistency of a powder product, quantify variability within batches from a supplier, define the

(over)

impact of recycling on powder properties and create a starting point for future development of powders.

Additional powder development services include:

- *AM application identification and process selection*
- *Plasma spherodization* (using the TekSphero-15) to improve flowability, increase density, and reduce powder impurity
- *Printing and testing of sample parts* to prove feasibility
- *Process parameters evaluation and modification* to improve build results
- *Process parameters development and testing* to enable the use of a new powder product

THE EWI ADVANTAGE

EWI empowers manufacturers to overcome complex manufacturing challenges and integrate new processes to bring products to market more quickly and efficiently. Our specialists offer comprehensive engineering services to help companies identify, develop, and implement the best options for their specific applications. With unmatched expertise, state-of-the-art lab facilities, and technology resources, we offer customized solutions that deliver game-changing results.

GET STARTED

To find out how EWI can help you develop, qualify, and enhance the quality of your metal powders for AM, please contact John Conway at jconway@ewi.org or 716.710.5513.



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