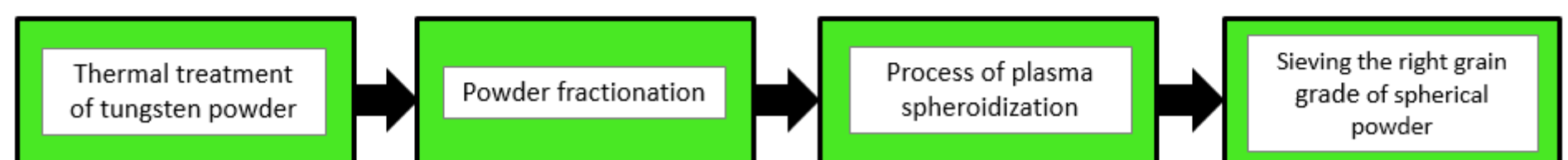
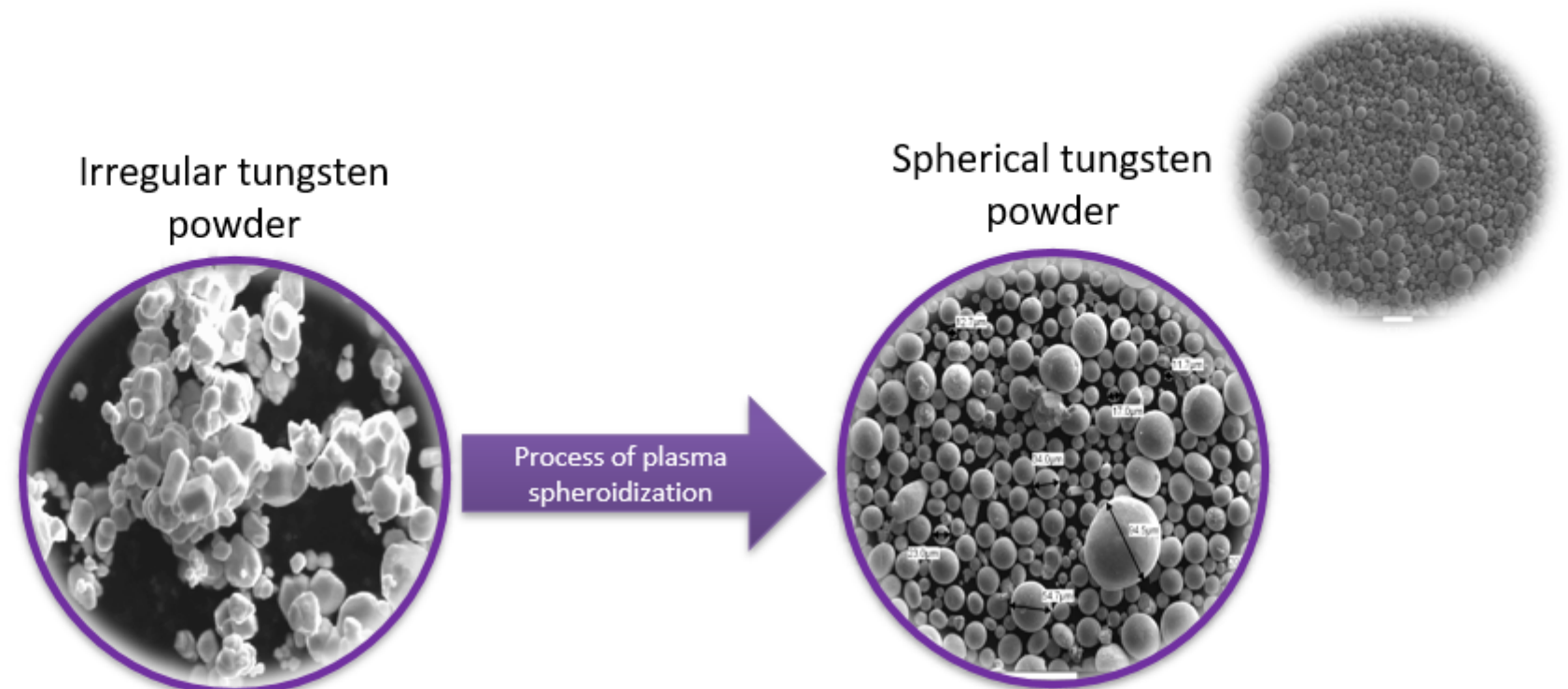


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# TECHNOLOGY FOR THE PRODUCTION OF HIGH-QUALITY SPHERICAL POWDERS FROM REFRACTORY METALS

The process of plasma spheroidization of metal powders consists in introduction of a powder with irregular grains into the plasma area (temperature of several thousand degrees), melting of the powder and its solidification while keeping a spherical shape when leaving the plasma area. One of the advantages of the plasma technique is that it can be used to process refractory metal powders. Due to the high melting point (Mo - 2623°C, W - 3422°C, Re - 3186°C), spheroidization of this type of materials is limited or impossible to be performed by other methods. Thanks to the use of argon-hydrogen plasma, it is possible to obtain a powder of high purity and the proper grain fraction. The developed method of producing the powder uses a constant current (DC) plasma torch.



## PRODUCT CHARACTERISTICS

- Spherical powders are adjusted to the needs of production processes, such as, for example, additive manufacturing techniques (3D printing) or metal injection molding (MIM).
- Spherical powders used in the injection molding (MIM) process facilitate the production of a homogeneous mixture with the binder material.
- In addition, it is possible to produce elements with high dimensional accuracy due to the low contraction of the spherical powder.
- Refractory spherical powders are also used in thermal spraying techniques, for which a material with good physico-chemical properties and a spherical morphology is required.