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(54) **Title:** MICROWAVE PLASMA PROCESSING OF SPHEROIDIZED COPPER OR OTHER METALLIC POWDERS

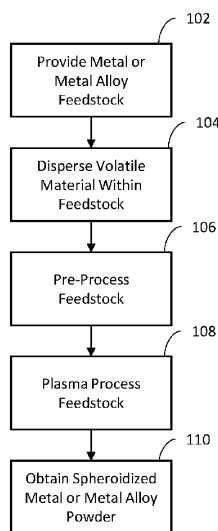


FIG. 1

(57) **Abstract:** Disclosed herein are systems and methods for synthesis of spheroidized metal or metal alloy powders using microwave plasma processing. In some embodiments, the metal or metal alloy may comprise a highly ductile, soft, and/or malleable metal or metal alloy such that machining of the metal or metal alloy is difficult or impossible. In some embodiments, a volatile material is dispersed within the metal or metal alloy feedstock to enable machining and pre-processing of the feedstock. In some embodiments, the dispersed volatile material alters the physical properties of the feedstock, such that the metal or metal alloy, which is difficult to machine due to high ductility, softness, and/or malleability, is easily machined in a pre-processing step. In some embodiments, the pre-processed feedstock, can be fed into a plasma processing apparatus. In some embodiments, the volatile material dispersed within the feedstock material may be vaporized upon exposure to the microwave plasma apparatus.

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