WHAT IS CLAIMED IS:

1. A method for manufacturing a spheroidized powder from powder previously manufactured from a gas atomization process, the method comprising:

introducing powder previously manufactured from a gas atomization process into a microwave plasma torch, the powder previously manufactured from a gas atomization process having a median aspect ratio of 2:1 or greater~~an average particle size outside of a range for additive manufacturing~~; and

melting and spheroidizing the powder previously manufactured from a gas atomization process within the microwave plasma torch to form spheroidized powder particles having a different ~~average~~ median particle size~~s~~ and a smaller particle size distribution from a median~~the average~~ particle~~s~~ size and a median~~the~~ particle size distribution of the powder previously manufactured from a gas atomization process, and having a median sphericity of 0.91 or greater.

2. The method of Claim 1, wherein the melting and spheroidizing increases the median~~average~~ particle size.

3. The method of Claim 1, wherein the melting and spheroidizing decreases the median~~average~~ particle size.

4. The method of Claim 1 or 3, wherein the particle size distribution of particles of the spheroidized powder is at least 50% less from 10% to 95% as compared to the particle size distribution of the powder previously manufactured from a gas atomization process.

5. The method of any one of Claims 1 or 3-4, wherein the median~~a 50 percentile~~ particle size of the spheroidized powder is reduced by at least 40% as compared to the median~~a 50 percentile~~ particle size of the powder previously manufactured from a gas atomization process.

6. The method of any one of Claims 1 or 3-5, wherein the median~~a 50 percentile~~ particle size of the spheroidized powder is reduced by at least 50% as compared to the median~~a 50 percentile~~ particle size of the powder previously manufactured from a gas atomization process.

7. The method of Claim 1 or 2, wherein the median~~a 50 percentile~~ particle size of the spheroidized powder is increased by at least 40% as compared to the median~~a 50 percentile~~ particle size of the powder previously manufactured from a gas atomization process.

8. The method of any one of Claims 1, 2, or 7, wherein the median~~a 50 percentile~~ particle size of the spheroidized powder is increased by at least 50% as compared to the

median~~a 50 percentile~~ particle size of the powder previously manufactured from a gas atomization process.

9. The method of any one of Claims 1-8, wherein the powder previously manufactured from a gas atomization process comprises a material selected from the group consisting of titanium, titanium alloy, nickel, nickel alloy, cobalt, cobalt alloy, iron, iron alloy, ~~a ductile metal, a ductile metal alloy,~~ and ceramic.

10. The method of any one of Claims 1-9, wherein carbon and nitrogen are removed from the powder previously manufactured from a gas atomization process during the melting and spheroidizing.

11. The method of any one of Claims 1-10, wherein the spheroidized powder particles retain the same rheological properties as the powder previously manufactured from a gas atomization process after the melting and spheroidizing.

12. A spheroidized powder manufactured by a method comprising:

introducing powder previously manufactured from a gas atomization process into a microwave plasma torch, the powder previously manufactured from a gas atomization process having a median aspect ratio of 2:1 or greater~~an average particle size outside of a range for additive manufacturing~~; and

melting and spheroidizing the powder previously manufactured from a gas atomization process within the microwave plasma torch to form the spheroidized powder particles having a different median~~average~~ particle size~~s~~ and a smaller particle size distribution from a median~~the average~~ particle~~s~~ size and a median~~the~~ particle size distribution of the powder previously manufactured from a gas atomization process, and having a median sphericity of 0.91 or greater;

wherein the spheroidized powder particles comprise at least a partially retained microstructure from the powder previously manufactured from the gas atomization process.

13. The spheroidized powder of Claim 12, wherein the melting and spheroidizing increases the ~~average~~ median particle size.

14. The spheroidized powder of Claim 12, wherein the melting and spheroidizing decreases the ~~average~~ median particle size.

15. The spheroidized powder of Claim 12 or 14, wherein the particle size distribution of particles of the spheroidized powder is at least 50% less from 10% to 95% as compared to the particle size distribution of the powder previously manufactured from a gas atomization process.

16. The spheroidized powder of any one of Claims 12 or 14-15, wherein the median~~a 50 percentile~~ particle size of the spheroidized powder is reduced by at least 40% as compared to the median~~a 50 percentile~~ particle size of the powder previously manufactured from a gas atomization process.

17. The spheroidized powder of any one of Claims 12 or 14-16, wherein the median~~a 50 percentile~~ particle size of the spheroidized powder is reduced by at least 50% as compared to the median~~a 50 percentile~~ particle size of the powder previously manufactured from a gas atomization process.

18. The spheroidized powder of Claim 12 or 13, wherein the median~~a 50 percentile~~ particle size of the spheroidized powder is increased by at least 40% as compared to the median~~a 50 percentile~~ particle size of the powder previously manufactured from a gas atomization process.

19. The spheroidized powder of any one of Claims 12, 13, or 18, wherein the median~~a 50 percentile~~ particle size of the spheroidized powder is increased by at least 50% as compared to the median~~a 50 percentile~~ particle size of the powder previously manufactured from a gas atomization process.

20. The spheroidized powder of any one of Claims 12-19, wherein the powder previously manufactured from a gas atomization process comprises a material selected from the group consisting of titanium, titanium alloy, nickel, nickel alloy, cobalt, cobalt alloy, iron, iron alloy, ~~a ductile metal, a ductile metal alloy,~~ and ceramic.