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; 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 median particle size and a smaller particle size distribution from a median particle size and a median 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 particle size.

3. The method of Claim 1, wherein the melting and spheroidizing decreases the median 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 particle size of the spheroidized powder is reduced by at least 40% as compared to the median 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 particle size of the spheroidized powder is reduced by at least 50% as compared to the median particle size of the powder previously manufactured from a gas atomization process.

7. The method of Claim 1 or 2, wherein the median particle size of the spheroidized powder is increased by at least 40% as compared to the median 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 particle size of the spheroidized powder is increased by at least 50% as compared to the median 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, 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; 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 particle size and a smaller particle size distribution from a median particle size and a median 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 median particle size.

14. The spheroidized powder of Claim 12, wherein the melting and spheroidizing decreases the 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 particle size of the spheroidized powder is reduced by at least 40% as compared to the median 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 particle size of the spheroidized powder is reduced by at least 50% as compared to the median particle size of the powder previously manufactured from a gas atomization process.

18. The spheroidized powder of Claim 12 or 13, wherein the median particle size of the spheroidized powder is increased by at least 40% as compared to the median 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 particle size of the spheroidized powder is increased by at least 50% as compared to the median 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, and ceramic.