Claims

1. Additive manufacturing method for the production of components comprising the steps of:

(a) providing and melting a metal based powder,

(b) merging the molten particles with each other and with their underground thereby forming merged material,

(c) cooling and thereby solidifying the merged material,

characterized in that

the metal based powder is a Ti based powder comprising at least Ta, Fe and i) Sn and/or ii) Nb and Zr,

wherein for i) the powder comprises:
- Ta in the range of 3wt% and 10wt%,
- Fe in the range of 2wt% and 10wt%,
- Sn in the range of 0.1wt% and 9wt%, and
- Si in the range of 0.001wt% and 3wt%,
wherein Ti is used as a balance of the composition, and
wherein for ii) the powder comprises:
- Ta in the range of 3wt% and 10wt%,
- Fe in the range of 2wt% and 10wt%, and
- Nb in the range of 4wt% and 12wt% ,
- Zr in the range of 3wt% and 9wt%,
wherein Ti is used as a balance of the composition.

2 . Method according to claim 1, characterized in that the Ti based powder comprises as well Si.

3. Method according to one of the previous claims, characterized in that the Ti-based powder comprises C and/or N and/or O.

4. Ti based powder for additive manufacturing, characterized in that the powder comprises:

- Ta in the range of ~~0.01wt% and 15wt%, preferably in the range of~~ 3wt% and 10wt% ~~and most preferably is comprised with 6wt% and~~,
- Nb in the range of ~~0.01wt% and 25wt%, preferably in the range of~~ 4wt% and 12wt% ~~and most preferably is comprised with 8wt%~~,
- Fe in the range of ~~0.01wt% and 15wt%, preferably in the range of~~ 2wt% and 10wt% ~~more~~ ~~preferably in the range of 2wt% and 6wt%~~, ~~and most preferably~~ ~~around~~ ~~with 4wt%~~
- Zr in the range of ~~0.01wt% and 25wt%, preferably in the range of 0.01wt% and 15wt%, preferably in the range of 2wt% and 10wt%, preferably in the range of~~ 3wt% and 9wt% ~~and most preferably~~ ~~around~~ ~~with 6wt%.~~,

wherein Ti is used as a balance of the composition.

5. Ti based powder for additive manufacturing, characterized in that the powder comprises:

- Ta in the range of ~~0.01wt% and 20wt%, preferably in the range of~~ 3wt% and 10wt% ~~and most preferably is comprised with 7wt% and~~ ,
- Fe in the range of ~~0.01wt% and 15wt% preferably in the range of~~ 2wt% and 10wt% ~~and most preferably~~ ~~around~~ ~~5wt%~~,
- Sn in the range of ~~0.01wt% and 10wt% preferably in the range of~~ 0.1wt% and 9wt% ~~and most preferably~~ ~~around~~ ~~3wt%~~, and
- Si in the range of 0.001wt% and 3wt%,

wherein Ti is used as a balance of the composition.

6. Ti based powder according to claim 4 or 5, characterized in that the powder comprises:

- Oxygen, preferably in the range of 0.001wt% and 0.3wt% and/or
- Nitrogen, preferably in the range of 0.001wt% and 0.2wt% and/or
- Carbon, preferably in the range of 0.001wt% and 0.9wt%.