CLAIMS

What is claimed is

1. An implant having a base body comprising a biocorrodible magnesium alloy, wherein the magnesium alloy contains a plurality of statistically distributed particles, wherein the mean distance of the particles from each other is smaller than the hundredfold mean particle diameter, and the particles comprise one or more of the elements Y, Zr, Mn, Sc, Fe, Ni, Co, W, Pt, and noble earths with the atomic numbers 57 to 71, or alloys, or compounds containing one or more of these elements.

2. The implant according to claim 1, wherein the particles have a mean diameter of 1 nm to 10 µm.

3. The implant according to claim 1 or 2, wherein the particles are incorporated into a surface or into a near-surface region of the base body.

4. An implant according to any one of the preceding claims, wherein a number of the particles on the surface of the base body ranges between 1*10^2 and 1*10^6 per mm^2.

5. An implant according to any one of the preceding claims, wherein a number of the particles in the volume of the base body ranges between 1*10^3 and 1*10^9 per mm^2.

6. The implant according to claim 4 or 5, wherein a ratio of the mean particle diameter to the mean distance of the particles from each other ranges between 1:2 and 1:10.

7. An implant according to any one of the preceding claims, wherein a mean distance of the particles ranges between 200 nm and 100 µm.

8. An implant according to any one of the preceding claims, wherein the implant is a stent.

9. A method for producing an implant having a base body comprising a biocorrodible magnesium alloy, wherein the magnesium alloy contains a plurality of statistically distributed particles, wherein the mean distance of the particles from each other is smaller than the hundredfold mean particle diameter, and the particles comprise one or more of the elements Y, Zr, Mn, Sc, Fe, Ni, Co, W, Pt, and noble earths with the atomic numbers 57 to 71, or alloys, or compounds containing one or more of these elements, and the particles are incorporated into a surface or into a near-surface region of the base body, wherein the method comprises the following steps:
   (i) providing a blank made of the biocorrodible magnesium alloy;
   (ii) applying a non-aqueous suspension of particles having the above-mentioned composition to the blank; and
   (iii) rolling the particles into the surface or into the near-surface region of the blank.

10. A method for producing an implant having a base body comprising a biocorrodible magnesium alloy, wherein the magnesium alloy contains a plurality of statistically distributed particles, wherein the mean distance of the particles from each other is smaller than the hundredfold mean particle diameter, and the particles comprise one or more of the elements Y, Zr, Mn, Sc, Fe, Ni, Co, W, Pt, and noble earths with the atomic numbers 57 to 71, or alloys, or compounds containing one or more of these elements, and the particles are incorporated into a surface or into a near-surface region of the base body, wherein the method comprises the following steps:
   (i) providing a blank made of the biocorrodible magnesium alloy;
   (ii) applying particles having the above-mentioned composition to the blank; and
   (iii) melting the magnesium alloy in the near-surface region of the blank.

CLAIMS

What is claimed is

1. An implant having a base body made of a biocorrodible magnesium alloy, wherein the magnesium alloy contains a plurality of homogenously distributed particles at the near-surface region and/or surface, wherein the mean distance of the particles from each other is smaller than the hundredfold mean particle diameter, and the particles comprise one or more of the elements Y, Zr, Mn, Sc, Fe, Ni, Co, W, Pt, and noble earths with the atomic numbers 57 to 71, or alloys, or compounds containing one or more of these elements.

2. The implant according to claim 1, wherein the particles have a mean diameter of 1 nm to 10 µm.

3. An implant according to any one of the preceding claims, wherein a number of the particles on the surface of the base body ranges between 1*10^2 and 1*10^6 per mm^2.

4. An implant according to any one of the preceding claims, wherein a number of the particles in the volume of the base body ranges between 1*10^3 and 1*10^9 per mm^2.

5. The implant according to claim 3 or 4, wherein a ratio of the mean particle diameter to the mean distance of the particles from each other ranges between 1:2 and 1:10.

6. An implant according to any one of the preceding claims, wherein a mean distance of the particles ranges between 200 nm and 100 µm.

7. An implant according to any one of the preceding claims, wherein the implant is a stent.

8. A method for producing an implant having a base body comprising a biocorrodible magnesium alloy, wherein the magnesium alloy contains a plurality of homogenously distributed particles, wherein the mean distance of the particles from each other is

smaller than the hundredfold mean particle diameter, and the particles comprise one or more of the elements Y, Zr, Mn, Sc, Fe, Ni, Co, W, Pt, and noble earths with the atomic numbers 57 to 71, or alloys, or compounds containing one or more of these elements, and the particles are incorporated into a surface and/or into a near-surface region of the base body, wherein the method comprises the following steps:

(i) providing a blank made of the biocorrodible magnesium alloy;

(ii) applying a non-aqueous suspension of particles having the above-mentioned composition to the blank; and

(iii) rolling the particles into the surface or into the near-surface region of the blank.

9. A method for producing an implant having a base body comprising a biocorrodible magnesium alloy, wherein the magnesium alloy contains a plurality of homogeneously distributed particles, wherein the mean distance of the particles from each other is smaller than the hundredfold mean particle diameter, and the particles comprise one or more of the elements Y, Zr, Mn, Sc, Fe, Ni, Co, W, Pt, and noble earths with the atomic numbers 57 to 71, or alloys, or compounds containing one or more of these elements, and the particles are incorporated into a surface and/or into a near-surface region of the base body, wherein the method comprises the following steps:

(i) providing a blank made of the biocorrodible magnesium alloy;

(ii) applying particles having the above-mentioned composition to the blank; and

(iii) melting the magnesium alloy in the near-surface region of the blank.