krypton or mixtures thereof. It is also preferably possible to successively select combinations of different atmospheres for various time periods.

The pump housing precursor can be treated either in one step or preferably in more than one step. Preferably, the pump housing precursor is treated in a first substep of step d. to a temperature within a range from 301 to 600°C, or preferably within a range from 350 to 550°C, or preferably within a range from 400 to 500°C. Said first substep of treatment step d. can take place over a period within a range from 0.1 to 100 h, preferably within a range from 1 to 50 h, or preferably within a range from 2 to 20 h. Said substep can take place either by introduction of the pump housing precursor from step c. into a preheated atmosphere or by slow stepwise or continuously increased heating of the pump housing precursor. Preferably, the treatment in the first substep of step d. of the pump housing precursor is performed in one step at a temperature within a range from 301 to 600°C.

In a second substep of the treatment from step d., which preferably follows the first substep, the pump housing precursor is preferably heated to a temperature within a range from 800 to 2500°C, or preferably within a range from 1000 to 2000°C, or preferably within a range from 1100 to 1800°C. Said substep, too, can take place either by introduction of the pump housing precursor from the first substep of step d. into a preheated atmosphere or by slow stepwise or continuously increased heating of the pump housing precursor. Preferably, the treatment in the second substep of step d. of the pump housing precursor is performed in one step to a temperature within a range from 800 to 2500°C. The treatment of the pump housing precursor in the second substep is performed over a period within a range from 0.1 to 20 h, preferably within a range from 1 to 12 h, or preferably within a range from 2 to 5 h. As stated above, the shape of the pump housing after the production process is preferably continuous.

The present invention further provides a pump housing for a pump device obtainable by the above-described method according to the invention.

A fourth aspect of the present invention further provides a housing for a pump device which at least partly surrounds an interior region, having a first end and a second end,

wherein the housing has at least one first subregion and at least one further subregion;

wherein the first subregion comprises a ceramic to an extent of at least 61% by weight, based on the total mass of the first subregion,

oxide (MgO), a piezoceramic, barium (Zr, Ti) oxide, barium (Ce, Ti) oxide and sodium potassium niobate or a mixture of at least two thereof.

6. The pump device as claimed in any of the preceding claims, wherein the metal of the at least one further subregion is selected from the group consisting of platinum (Pt), iron (Fe), stainless steel (AISI 304, AISI 316 L), iridium (Ir), niobium (Nb), molybdenum (Mo), tungsten (W), titanium (Ti), cobalt (Co), chromium (Cr), a cobalt-chromium alloy, tantalum (Ta) and zirconium (Zr) or a mixture of at least two thereof.

7. The pump device as claimed in any of the preceding claims, wherein the at least one first subregion comprises less than 10% by weight, based on the total mass of the first subregion, of metal.

8. The pump device as claimed in any of the preceding claims, wherein the at least one first subregion and the at least one further subregion are connected to one another by at least one third subregion.

9. The pump device as claimed in ~~the preceding~~ claim 8, wherein the at least one third subregion has a metal content between the metal content of the first subregion and the metal content of the further subregion.

10. The pump device as claimed in any of the preceding claims, wherein the pump device is at least partly surrounded by a component housing, with at least one part of the at least one further subregion of the pump device being connected to the component housing.

11. The pump device as claimed in ~~the preceding~~ claim 10, wherein the component housing comprises at least 30% by weight, based on the total mass of the component housing, of titanium.

12. The pump device as claimed in any of the preceding claims, wherein ~~the~~ a wall of the pump housing has a magnetic permeability of less than 2 μ.

13. The pump device as claimed in any of the preceding claims, wherein ~~the~~ a surface of the at least one first subregion which faces the interior region of the

pump housing has a Vickers hardness of at least 330 HV, preferably at least 350 HV, preferably at least 370 HV.

14. The pump device as claimed in ~~any of the preceding~~ claims 10, wherein at least ~~the~~ outer surfaces of the component housing and ~~the~~ a surface facing the interior region of the pump housing are biocompatible.

~~15. A method for producing a pump housing for a pump device, comprising the steps:~~

~~a. providing a first material;~~

~~b. providing a further material;~~

~~c. forming a pump housing precursor, wherein a first subregion of the pump housing is formed from the first material and wherein a further subregion of the pump housing is formed from the further material;~~

~~d. treating the pump housing precursor at a temperature of at least 300°C.~~

~~16. A method for producing a pump housing for a pump device, comprising the steps:~~

~~a) providing a first material;~~

~~b) providing a further material;~~

~~c) forming a pump housing precursor, wherein firstly a further subregion of the pump housing is formed from the further material and then a first subregion of the pump housing is formed from the first material and wherein a second further subregion of the pump housing is formed from the further material;~~

~~d) treating the pump housing precursor at a temperature of at least 300°C.~~

~~17. The method as claimed in claim 15 or 16, wherein step c. comprises a shaping process, preferably selected from the group consisting of a lithographic process, an injection molding process, a machining process, an extrusion process or a combination of at least two thereof.~~

~~18. A pump housing for a pump device obtainable by a method as claimed in at least one of claims 15 to 17.~~

~~19~~15. A housing for a pump device which at least partly surrounds an interior region, having a first end and a second end,

wherein the housing has at least one first subregion and at least one further subregion;

wherein the first subregion comprises a ceramic to an extent of at least 61% by weight, based on the total mass of the first subregion,

wherein the further subregion comprises a metal content within a range from 40 to 90% by weight, based on the total mass of the further subregion,

wherein at least one part of the first subregion and at least one part of the further subregion are connected to one another.

~~20~~16. The housing as claimed in claim ~~19~~15, wherein a slidable element is located in the housing, at least in one part of the housing.

~~21. A pump device comprising at least one housing as claimed in claim 19 or 20, or a pump housing obtainable by a method as claimed in at least one of claims 15 to 17.~~