CLAIMS

1. Medical bone implant (1; 11, 14) for stabilizing a bone region, comprising

an implant body manufactured from a thermoplastic composite material for the purpose of being anchored in or on a human or animal bone (W) for the purpose of stabilizing the bone region, as well as

at least one sensor (2) for measuring one or more parameter(s) of the healing process and/or of a condition of the implant (1; 11, 14),

characterized in that

the at least one sensor is a passive magnetoelastic sensor (2).

2. Bone implant (1; 11, 14) according to claim 1, wherein the at least one sensor (2) exploits the Barkhausen-effect for measuring the one or more parameter(s).

3. Bone implant (1; 11, 14) according to claim 1 or 2, wherein the at least one sensor is a micro wire (2) with a diameter of preferably 10 µm to 250 µm.

4. Bone implant (1; 11, 14) according to one of the preceding claims, wherein the at least one sensor (2) is arranged at least partially or entirely in the interior of the implant body.

5. Bone implant (1; 11, 14) according to one of the preceding claims, wherein the implant (1; 11, 14) comprises a main longitudinal center line, and wherein the at least one sensor (2) extends essentially along the entire longitudinal extension of the main longitudinal center line.

6. Bone implant (1; 11, 14) according to claim 5, wherein the implant (1; 11, 14) comprises several such sensors (2), which are arranged in a regularly spaced manner along the main longitudinal center line.

7. Bone implant (1; 11, 14) according to one of the preceding claims, wherein the implant (11, 13) comprises several such sensors (2), which extend parallel to each other.

8. Bone implant (1; 11, 14) according to one of the preceding claims, wherein the implant is a spine implant, such as especially a vertebral body replacement, a spinal disc replacement, a dowel, a screw-anchor, a fixation plate, a pedicle screw (11) or a connecting rod (14) of a pedicle system.

9. Bone implant (1; 11, 14) according to one of claims 1 to 7, wherein the implant is a trauma implant, such as for example a screw-anchor, a dowel, a bone plate, or a bone screw.

10. Bone implant (1; 11, 14) according to one of the preceding claims, wherein the one or more parameter(s) concern(s) mechanical loads, such as especially compressive forces and/or bending forces, and/or a temperature.

11. Bone implant (1; 11, 14) according to one of the preceding claims, wherein the at least one sensor (2) has a temperature stability of up to at least 450°C.

12. Method for monitoring the condition of an implant (1; 11, 14), wherein the implant especially is a bone implant (1; 11, 14) according to one of the preceding claims, and wherein the implant (1; 11, 14) comprises at least one passive magnetoelastic sensor (2) for measuring one or more parameter(s) of the condition of the implant (1; 11, 14),

characterized in that

the sensor (2) for monitoring the condition of the implant (1; 11, 14) is used during its manufacturing process and/or during its storage.