CLAIMS

1. A method for osteogenesis comprising contacting bone cells to silicon dioxide nanosprings in the form of a nanostructure mat, which nanosprings are coated with a zinc or zinc-based coating and with a titanium or titanium-based coating, and maintaining the contact of the nanosprings and the bone cells for a time sufficient for bone cells to proliferate and/or for the bone cells to deposit bone matrix on the nanostructures.

2. A method according to Claim 1, in which the nanostructures of the nanostructure mat are bound to a solid surface.

3. A method according to Claim 2, in which the solid surface is metallic.

4. A method according to Claim 3, in which the metallic solid surface is titanium or titanium oxide.

5. A method according to Claim 2, in which the solid surface is glass.

6. A method according to Claim 1, in which the nanostructures are not bound to a solid surface.

7. A method according to any preceding claim, in which the nanostructures are textured.

8. A composition comprising a multiplicity of silicon dioxide nanosprings in the form of a nanostructure mat, which nanosprings are coated with a film of a zinc or zinc-based coating and a film of a titanium or titanium-based coating, and a multiplicity of bone cells in association with the nanosprings.

9. A composition according to Claim 8, in which the nanosprings are textured.

10. A composition according to Claim 8, in which the nanosprings of the nanospring mat are bound to a solid surface other than bone.

11. A composition according to Claim 8, in which the nanostructures are not bound to a solid surface other than bone.

CLAIMS

1. A method for osteogenesis comprising contacting bone cells to silicon dioxide nanosprings in the form of a nanostructure mat, which nanosprings are coated with a film of a zinc or zinc-based coating and with a film of a titanium or titanium-based coating, and maintaining the contact of the nanosprings and the bone cells for a time sufficient for bone cells to proliferate and/or for the bone cells to deposit bone matrix on the nanostructures.

2. A method according to Claim 1, in which the nanostructures of the nanostructure mat are bound to a solid surface.

3. A method according to Claim 2, in which the solid surface is metallic.

4. A method according to Claim 3, in which the metallic solid surface is titanium or titanium oxide.

5. A method according to Claim 2, in which the solid surface is glass.

6. A method according to Claim 1, in which the nanostructures are not bound to a solid surface.

7. A method according to any preceding claim, in which the nanostructures are textured.

8. A composition comprising a multiplicity of silicon dioxide nanosprings in the form of a nanostructure mat, which nanosprings are coated with a film of a zinc or zinc-based coating and a film of a titanium or titanium-based coating, and a multiplicity of bone cells in association with the nanosprings.

9. A composition according to Claim 8, in which the nanosprings are textured.

10. A composition according to Claim 8, in which the nanosprings of the nanospring mat are bound to a solid surface other than bone.

11. A composition according to Claim 8, in which the nanostructures are not bound to a solid surface other than bone.