CLAIMS:

1. An implantable structure comprising at least one biocompatible backbone scaffold and at least one biocompatible and biodegradable collagen membrane deposited on at least a part of said backbone surface; wherein the biodegradation rate of the membrane is controllable, wherein the collagen membrane comprises crosslinked, compressed collagen, which is crosslinked by a non-polymeric reducing sugar and/or a reducing sugar derivative;

   wherein said crosslinked collagen membrane comprises regions having different degrees of crosslinking and/or different densities;

   wherein the density of the collagen membrane is lower in an inner membrane, closer to the backbone, and higher in an outer membrane; and

   wherein the different degrees of crosslinking and/or different densities of the collagen membrane provide a gradient of crosslinking degrees and/or densities which results in a gradient of degradation rates.
2. The implantable structure according to claim 1, wherein said backbone scaffold is formed of at least one of titanium, nitinol, polytetrafluoroethylene (PTFE, Teflon®), stainless steel, polypropylene, polystyrene, polyester, silicon, or any combination thereof.
3. The implantable structure according to claim 1 or 2, wherein said backbone scaffold is in the form of a woven or non-woven mesh, wires, rods, or any combination thereof.
4. The implantable structure according to any one of the preceding claims, wherein the collagen membrane further comprises at least one pharmaceutically active agent.
5. The implantable structure according to claim 4, wherein said pharmaceutically active agent is selected from antimicrobial agents, anti-inflammatory agents, factors having tissue regeneration induction properties and any combination thereof.
6. The implantable structure according to any one of the preceding claims, further comprising a space maintainer.
7. A method of preparing the implantable structure as defined in claims 1 to 6, said method comprising: providing at least one biocompatible backbone; immersing at least a part of said biocompatible backbone scaffold in a solution comprising collagen; fibrillating said collagen; compressing said fibrillated collagen; and

crosslinking said collagen with a non-polymeric reducing sugar and/or a reducing sugar derivative, thereby providing crosslinked collagen membrane deposited on the surface of said backbone, wherein said crosslinked collagen membrane comprises regions having different degrees of crosslinking, different densities or both;

wherein the density of the collagen membrane is lower in an inner membrane, closer to the backbone, and higher in an outer membrane; and

wherein the different degrees of crosslinking and/or different densities of the collagen membrane provide a gradient of crosslinking degrees and/or densities which results in a gradient of degradation rates.

8. The method according to claim 7, wherein the solution comprises at least one fibrillation agent.
9. The method according to claim 8, wherein said at least one fibrillation agent is selected from sodium phosphate, Tris HCl, potassium hydroxide or sodium hydroxide.
10. The method according to claim 9, wherein said at least one non-polymeric reducing sugar and/or a reducing sugar derivative agent is selected from glycerose, threose, erythrose, lyxose, xylose, arabinose, ribose, allose, altrose, glucose, mannose, gulose, idose, galactose, talose, or any other diose, triose, tetrose, pentose, hexose, septose, octose, nanose or decose, or any combination thereof.
11. The method according to any one of claims 7-10, further comprising washing the collagen membrane to remove residual reactants.
12. The method according to any one of claims 7-11, further comprising dehydrating the collagen membrane.
13. The implantable structure according to any one of claims 1 to 6, for use in at least one of dental or orthopedic bone regeneration, hernia repair, dura repair and any combinations thereof.
14. The implantable structure according to any one of claims 1 to 6, for use in conjunction with at least one space-maintainer.
15. A kit comprising the implantable structure according to any one of claims 1 to 6.
16. A kit comprising at least one biocompatible backbone scaffold, at least one solution of collagen, at least one fibrillation agent, at least one non-polymeric reducing sugar and/or a reducing sugar derivative crosslinker and instructions for use thereof,

wherein the kit is used in order to provide the implantable structure according to any one of claims 1 to 6.