CLAIMS

1. A sheet for radiotherapy, comprising:

a sheet base configured for placement on tissue of a patient;

a radium-binding material coupled to the base sheet; and

alpha-emitting radium radionuclides coupled to the radium-binding material, wherein the radium radionuclides do not leave the sheet, but radon and lead resulting from decay of the radium radionuclides, easily leave the sheet.

2. The sheet of claim 1, wherein the sheet base is formed from the radium-binding material.

3. The sheet of claim 1, wherein the sheet base is formed of a material different from the radium-binding material.

4. The sheet of claim 3, wherein the radium-binding material is coated over the sheet base.

5. The sheet of claim 3, wherein the radium-binding material comprises mini-particles dispersed on the sheet base.

6. The sheet of claim 3, wherein the radium-binding material comprises micro-particles dispersed on the sheet base.

7. The sheet of claim 3, wherein the radium-binding material comprises nano-particles dispersed on the sheet base.

8. The sheet of claim 1, wherein the alpha-emitting radium radionuclides have an activity of at least 1 microcurie per centimeter length.

9. The sheet of claim 1, wherein the radium-binding material comprises manganese oxide.

10. The sheet of claim 1, wherein the radium-binding material comprises alginate.

11. The sheet of claim 1, wherein the sheet base comprises a silicone substrate.

12. The sheet of any of claims 1-11, wherein the sheet base comprises a mesh.

13. The sheet of claim 8, wherein the mesh comprises a titanium mesh.

14. A sheet for radiotherapy, comprising:

a sheet base configured for placement on tissue of a patient;

sources of a length of at least one millimeter, carrying alpha-emitting radionuclides with an activity of at least 1 microcurie per centimeter length, coupled to the sheet base, such that at least part of the sources are external to the sheet base; and

a layer of gel on the sheet.

15. The sheet of claim 14, wherein the sheet base is configured to mold to contours of the skin of the patient.

16. The sheet of claim 14, wherein the sheet base comprises a silicone sheet.

17. The sheet of claim 14, wherein the sheet base comprises a mesh and the sources have internal tunnels threaded on the mesh.

18. The sheet of claim 14, wherein the sheet base has an area of at least 2 centimeters square.

19. The sheet of claim 14, wherein the alpha-emitting radionuclides comprise radium-224 radionuclides.

20. A sheet for radiotherapy, comprising:

a sheet base configured for placement on tissue of a patient; and

sources of a length of at least one millimeter, carrying alpha-emitting radionuclides with an activity of at least 1 microcurie per centimeter length, coupled to the sheet base, such that at least part of the sources are external to the sheet base,

wherein the alpha-emitting radionuclides are coupled to the sources in a manner which prevents detachment of the alpha-emitting radionuclides from the sources but allows escape from the sources of daughter radionuclides of the alpha-emitting radionuclides, upon decay.

21. The sheet of claim 20, wherein the alpha-emitting radionuclides have an activity of at least 5 microcurie per centimeter length.

22. The sheet of claim 20, wherein the sources protrude from the sheet base by at least 1 millimeter.

23. The sheet of claim 20, wherein the sources are coupled to the sheet base by an adhesive.