

IN THE CLAIMS

Amend the claims as follows.

1. (Currently amended) A collection of nanoparticles suitable for use in hyperthermia treatment by light irradiation at a wavelength in the transparency window of biological tissue, wherein each nanoparticle has been exposed to electromagnetic radiation that has a wavelength in a biological transparency window of 800 -1300 nm to cause heating of the nanoparticles and comprises:

a crystalline host structure, and

at least one species of rare-earth dopant ion;

wherein the concentration of the at least one species of dopant is in the range 60 to 100 molecular %.

2. (Currently amended) A collection of nanoparticles in accordance with claim 1, wherein the concentration of the at least one species of dopant is in the range ~~30~~ 90 to 100 molecular %.

3. (Currently amended) A collection of nanoparticles in accordance with claim 1, wherein the concentration of the at least one species of dopant is in the range ~~80~~ 95 to 100 molecular %.

4. (Original) A collection of nanoparticles in accordance with claim 1, wherein the concentration of the at least one species of dopant is in the range 90 to 100 molecular %.

5. (Original) A collection of nanoparticles in accordance with claim 1, wherein the concentration of the at least one species of dopant is in the range 95.0 to 100.0 molecular %.

6. (Original) A collection of nanoparticles in accordance with claim 1, wherein the at least one species of rare-earth dopant ion is selected from the list of Dy<sup>3+</sup>, Pr<sup>3+</sup>, Nd<sup>3+</sup>, Sm<sup>3+</sup>, Eu<sup>3+</sup>, Tb<sup>3+</sup>, Ho<sup>3+</sup>, Er<sup>3+</sup>, and Tm<sup>3+</sup> ions.

7. (Original) A collection of nanoparticles in accordance with claim 1, wherein the crystalline host structure is a dielectric material.

8. (Original) A collection of nanoparticles in accordance with claim 7, wherein the dielectric is a phosphate, a vanadate, a molybdate, a tungstate, an oxide or a fluoride.

9. (Original) A collection of nanoparticles in accordance with claim 1, wherein the crystalline host structure is a semiconductor material.
10. (Original) A collection of nanoparticles in accordance with claim 1, wherein the average diameter of the nanoparticles is in the range 5 to 500 nm
11. (Original) A collection of nanoparticles in accordance with claim 1, wherein the average diameter of the nanoparticles is in the range 20 to 60 nm.
12. (Currently amended) A collection of nanoparticles in accordance with claim 1, wherein the crystalline host structure ~~may be~~ is double or triple doped by any combinations of Dy<sup>3+</sup>, Pr<sup>3+</sup>, Nd<sup>3+</sup>, Sm<sup>3+</sup>, Eu<sup>3+</sup>, Tb<sup>3+</sup>, Ho<sup>3+</sup>, Er<sup>3+</sup>, Tm<sup>3+</sup>, and Yb<sup>3+</sup> ions.
13. (Original) A collection of nanoparticles in accordance with claim 1, wherein the nanoparticles have a core of a first host material doped with one or more types of rare earth dopant ions and a shell of a second host material doped with one or more types of rare earth dopant ions.
14. (Original) A collection of nanoparticles in accordance with claim 13, wherein the concentration of the dopant ions in the core is less than 1 mol% and the concentration of the dopant ions in the shell is in the range 30-100 mol%.
15. (Original) A collection of nanoparticles in accordance with claim 1, wherein the nanoparticles are conjugated with molecules that specifically bind to a target cell.
16. (Original) A collection of nanoparticles in accordance with claim 15, wherein the conjugated molecules are antibodies suitable for the formation of an antigen/ antibody complex with the target cell.
17. (Original) A collection of nanoparticles in accordance with claim 15, wherein the conjugated molecules are liposomes having targeting ligands suitable for the formation of a ligand/ receptor complex with the target cell.
18. (Original) A collection of nanoparticles in accordance with claim 1 for use in the hyperthermia treatment of over-proliferating cells.
19. (Original) A collection of nanoparticles in accordance with claim 1 for use in the hyperthermia treatment of over-proliferating cells, wherein the over-proliferating cells are malignant.

20. (Original) A pharmaceutical composition containing the collection of nanoparticles of claim 1.

21. (Withdrawn) A method of inducing localised hyperthermia in target cells comprising the steps of delivering nanoparticles of the type claimed in claim 1 to cells and exposing the nanoparticles to electromagnetic radiation.

22. (Withdrawn) A method of inducing localised hyperthermia and imaging target cells, comprising the steps of delivering nanoparticles of the type claimed in claim 1 to cells and exposing the nanoparticles to electromagnetic radiation and detecting the absorption, fluorescence or scattering of the radiation to simultaneously heat and view the target cells.

23. (Withdrawn) A method of inducing localised hyperthermia in target cells in accordance with claim 21, wherein the electromagnetic radiation has a wavelength in a biological transparency window of 800-900nm.

24. (Withdrawn) A method of inducing localised hyperthermia in target cells in accordance with claim 21, wherein the method is applied to cells in vitro.

25. (Withdrawn) A method of inducing localised hyperthermia in target cells in accordance with claim 21, wherein the conjugated molecules are antibodies suitable for the formation of an antigen/ antibody complex with the target cell.