

## REMARKS

Claim 1 has been amended to recite that the collection of nanoparticles have been exposed to electromagnetic radiation that has a wavelength in a biological transparency window of 800 -1300 nm to cause heating of the nanoparticles. Support for this amendment can be found at application page 3, line 15.

Claim 1 has been further amended to recite that the concentration of dopant is in the range 60-100 mol%, by introducing the features described on page 3, line 25 of the description.

The cited art does not teach or suggest what is claimed for the following reasons.

US Patent Publication 2007/0087195 to Meyer

The document describes luminescent inorganic nanoparticles comprising a core and a shell that are used in fluorescence resonance energy transfer bioassays. The material selected for the shell structure is luminescent and therefore the doping level in the shell structure must tend to a low concentration, e.g. 20%, to prevent quenching of luminescence (see Paragraph [0049]). In contrast, the claimed particles exploit the heating mechanism of phonon relaxation, whereby the heating effect is proportional to the dopant concentration, therefore the higher the dopant concentrations the higher the change in temperature of the nanoparticles upon irradiation: “wherein the concentration of the at least one species of dopant is in the range 60 to 100 molecular %.”

US 2007/0274664 to Stouwdom

The document describes a photonic material for use in telecoms and imaging, and employs nanoparticles with at least one luminescent dopant ion. Similarly to Meyer, luminescence is a requirement of the particles created and therefore low dopant concentrations of around 5% are specified (see Paragraph [0109]). Again, this contrasts with what is now claimed.

Evangelisti et al (Phys. Rev. B, 2011)

The document describes the use of Dysprosium Phosphate nanoparticles in studies of the magnetic properties of these compounds. There is no teaching in this document of the use of the nanoparticles for heat treatment or irradiation by electromagnetic radiation, especially not in the biological transparency window.

Based on the foregoing, all of the claims are now believed to be allowable and the

WIL.P002.US.01

undersigned requests a notice to that effect.

Sincerely,

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