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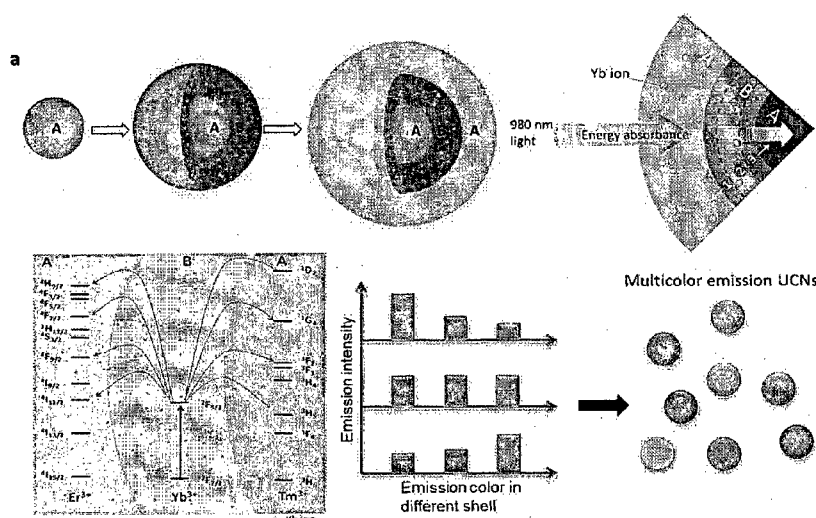
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(54) Title: AN UPCONVERSION FLUORESCENT NANOPARTICLE

Figure 1

(57) Abstract: The present invention provides upconversion fluorescent nanoparticles comprising: a first nanocrystal layer, a second nanocrystal layer, and an energy absorbing layer disposed between the first nanocrystal layer and the second nanocrystal layer. There is also provided an article of manufacture comprising the upconversion fluorescent nanoparticles, as well as a bio-imaging and/or bio-detection apparatus comprising the upconversion fluorescent nanoparticles. The bio-imaging and/or bio-detection apparatus may further comprise a biomolecule and a source of excitation.



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