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Research Article

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[Synthesis of NaYF<sub>4</sub>:Yb,Er@SiO<sub>2</sub>@Ag core-shell nanoparticles for plasmon-enhanced upconversion luminescence in bio-applications](#)

The present report highlights our results on synthesis of NaYF<sub>4</sub>:Yb,Er@SiO<sub>2</sub>@Ag core-shell nanoparticles (CSNPs) for plasmon-enhanced upconversion luminescence (UCL). Hydrophilic surface UCL nanoparticles (UCLNPs) as cores were obtained by precipitation of Rare Earth Elements (REE) chlorides from water-alcohol solutions. The formation of a hydrophobic surface of  $\beta$ -NaYF<sub>4</sub>:Yb,Er NPs was achieved by thermolysis method at 280 °C and  $\beta$ -NaYF<sub>4</sub>:Yb,Er by precipitation method in nonpolar medium at 320 °C. Silica shell was formed by the modified Stöber method on the surfaces of UCLNPs with different polarity and phase composition. A mixture of hexane-cyclohexane-isopropyl alcohol was used as a medium for the formation of mononuclear CSNPs on hydrophobic surfaces of cores with different thicknesses of the silica shell: 5 nm and 14 nm. Formation of a predetermined thickness of silica shell was carried out by introducing a precise quantity of TEOS taking into account the size of core NPs with molar ratio TEOS: H<sub>2</sub>O equal to 1:6. The morphology and phase composition of cores and CSNPs were examined by transmission electron microscopy and selected area electron diffraction, respectively. The insertion of Ag NPs into the structure of NaYF<sub>4</sub>:Yb,Er@SiO<sub>2</sub> was carried out in parallel at the stage of shell formation, which made this synthesis a one-step process. The control of the size of Ag NPs was implemented through the use of a colloidal solution of NPs of the cluster structure by changing the polarity of the medium. The highest intensity enhancement of 85-fold with 5 nm and 29-fold with 14 nm shell thickness was recorded, respectively. For the first time, tests on bioimaging of neutrophil cells by those CSNPs are demonstrated.

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Short Communication

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[Nanotherapeutic agent for cancer: Miracle or catastrophe](#)

Nanotechnology is a smart technology in the field of biomedical engineering used for the diagnosis and treatment of diseases. Nanodrugs provide better encapsulation of drug and efficiency at low dosage to kill the targeted tissue/cells. However, the chances of chronic toxicity and high cost of treatment limits its applicability [1]. To overcome these problems still, the experts of the scientific community have been working on it, to design the best one and cost-effective treatment for the human welfare.

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Research Article

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[Naphazoline nitrate treat the Frey effect of microwave and other sonic weapon's damages in Human's Internal, Endogenous Organs](#)

State Department had evacuated a number of Americans from the U.S. consulate in Guangzhou, China after they experienced unexplained health issues. A group of U.S. diplomats stationed in China have been brought back to the states after being inflicted by a mystery illness that reportedly resembles the brain injuries previously suffered by staff in Cuba. At the end of the December 2018 we have found a medicine fully treating the damages caused the Frey Effect of Microwave and other types of Sonic Weapons in Human's internal, endogenous organs. I am proposing to use Naphazoline nitrate, (former) nasal decongestant, to treat Carcinogenesis of the Human's internal, endogenous organs caused by Sonic Weapons through the release and cleaning of the Lymphatic ways in patients with colorectal, colon, pancreatic, breast, etc., cancer. I have proved this healing effect of the Naphazoline nitrate on myself during treatment in last months of the year 2018.

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