



ISTITUTO ITALIANO
DI TECNOLOGIA

TITLE

Star-shaped gold nanoparticles

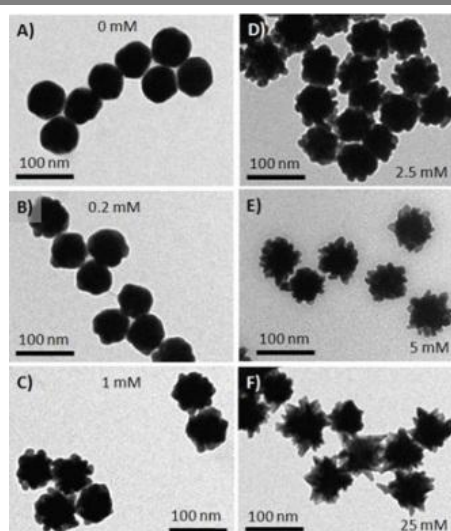
INVENTORS

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DESCRIPTION

Method to synthesize in aqueous solution branched gold nanoparticles by which it is possible to control the size and the degree of branching at the same time. The method does not use cytotoxic capping agents, such as CTAB, organic thiol molecules or others. A further coating can also be realized on the surface of branched nanoparticles.

It also allows to control with extreme precision the optical properties of the nanoparticles in a broad region of UV-visible and near-ir spectrum. The nanoparticles can be used for application based on the Surface Enhanced Raman Scattering phenomenon, or as Metal Enhanced Fluorescence or Metal Enhanced Chemiluminescence materials. Due to the finely optical absorption in certain region of spectrum, these nanoparticles can be applied also for the therapeutic treatment of neoplastic diseases through a photo-thermal effect.



APPLICATIONS

Raman spectroscopy, biomedical applications, therapeutic treatments, coloring dyes for coatings

KEYWORDS

Gold branched nanoparticles, SERS, hyperthermic treatment, optical properties

BIBLIOGRAPHIC DATA

1) Procedimento di sintesi di nanoparticelle d'oro stellate aventi dimensioni e ramificazioni controllate e nanoparticelle d'oro stellate così ottenute

Application Number	TO2010A000968
Priority Date	December 06, 2010
Applicants	Fondazione Istituto Italiano di Tecnologia

2) A method of syntetizing branched gold nanoparticles having controlled size and branching and the branched gold nanoparticles thereby obtained

Application Number	WO/2012/077043
Priority Date	December 06, 2010
Applicants	Fondazione Istituto Italiano di Tecnologia

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