

In this issue

Johann Toudert

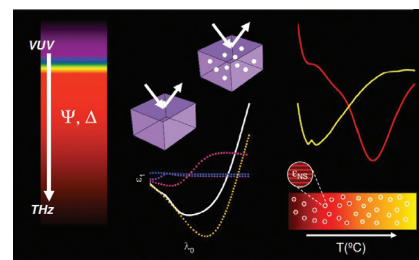
Spectroscopic ellipsometry for active nano- and meta-materials

DOI 10.1515/ntrev-2013-0043

Nanotechnol Rev 2014; 3(3): 223–245

Review: Spectroscopic ellipsometry can be performed in a broad spectral range thus providing rich information about the dielectric properties and structure of materials; it is a powerful tool for the characterization of nano- and metamaterials and a key element in the development of novel ultrasensitive detectors.

Keywords: active plasmonics; meta-materials; nanostructured materials; sensing; spectroscopic ellipsometry.



Li Yao and Shoujun Xu

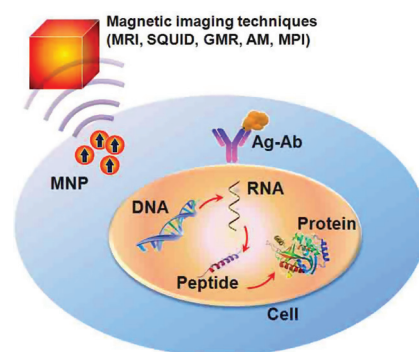
Detection of magnetic nanomaterials in molecular imaging and diagnosis applications

DOI 10.1515/ntrev-2013-0044

Nanotechnol Rev 2014; 3(3): 247–268

Review: The advances in the development of magnetic imaging techniques for magnetic nanoparticles (MNP) used in molecular imaging and diagnosis applications are summarized.

Keywords: atomic magnetometry; magnetic imaging; magnetic nanoparticles; molecular imaging.



Remant Bahadur K.C., Bindu Thapa and Narayan Bhattarai

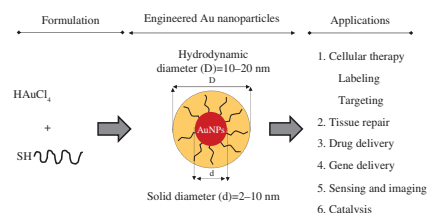
Gold nanoparticle-based gene delivery: promises and challenges

DOI 10.1515/ntrev-2013-0026

Nanotechnol Rev 2014; 3(3): 269–280

Review: The state-of-the-art formulation of functional gold nanoparticles composed with monolayer genetic materials and stabilizer molecules for implication in various biomedical applications.

Keywords: bioconjugation; functionalization; gene delivery; gold nanoparticles.



Mahendra Rai, Sonal Birla, Avinash P. Ingle, Indarchand Gupta, Aniket Gade, Kamel Abd-Elsalam, Priscyla D. Marcato and Nelson Duran

Nanosilver: an inorganic nanoparticle with myriad potential applications

DOI 10.1515/ntrev-2014-0001

Nanotechnol Rev 2014; 3(3): 281–309

Review: Inorganic nanoparticles like silver are in the focus of current nanotechnology research and development.

Keywords: bioactivity; bionanotechnology; diversity; inorganic nanoparticles; toxicity.



Katla Sai Krishna, Ming He, David A. Bruce and Challa S.S.R. Kumar

The enigma of $\text{Au}_{21}(\text{SCH}_2\text{CH}_2\text{Ph})_{14}$ nanocluster: a synthetic challenge

DOI 10.1515/ntrev-2013-0038

Nanotechnol Rev 2014; 3(3): 311–317

Research highlight: We show through DFT calculations that the optimized thiol-stabilized Au_{21} cluster consists of a center Au_{13} core capped by two $\text{Au}_2(\text{SCH}_2\text{CH}_3)_3$ fragments and four $\text{Au}(\text{SCH}_2\text{CH}_3)_2$ fragments and is energetically stable.

Keywords: atomically precise clusters; DFT calculations; gold nanoclusters.

