IN THIS ISSUE:

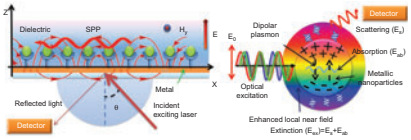
Wenwei Zheng, Heather C. Chiamori, Gang Logan Liu, Liwei Lin and Fanqing Frank Chen

Nanofabricated plasmonic nano-bio hybrid structures in biomedical detection

DOI 10.1515/ntrev-2011-0008
Nanotechnol Rev 1 (2012): 213–233

Review: Biosensor exploiting localized nanoplasmonics resonance. Surface plasmon polaritons (or propagating plasmon) and a resulting reflectivity spectrum obtained in an angle-solved mode (left); and a typical measurement using localized surface plasmons and a resulting scattering spectrum in biosensing (right).

Keywords: genomic and proteomic sensing; LSPR; nano-bio hybrids; plasmonic nano-resonance; plasmonic structures; SERS; surface enhancements; surface plasmons.



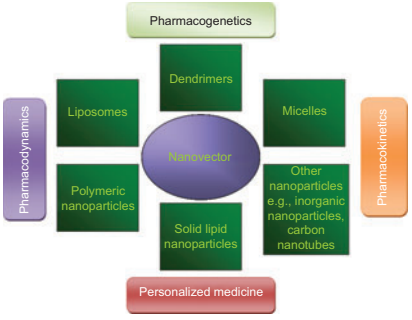
Santanu Bhattacharya, Khalid M. Alkharfy, Rajiv Janardhanan and Debabrata Mukhopadhyay

Nanomedicine: pharmacological perspectives

DOI 10.1515/ntrev-2011-0010
Nanotechnol Rev 1 (2012): 235–253

Review: Prospecting nanovectors in personalized medicine combinatorial approaches derived from the concepts of pharmacokinetics, pharmacodynamics, and pharmacogenetics have significantly enhanced the application of nanovectors in personalized medicine.

Keywords: nanomedicine; pharmacodynamics; pharmacogenetics; pharmacokinetics; toxicity.



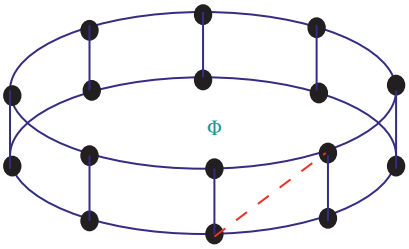
Santanu K. Maiti

Magnetotransport in mesoscopic rings and cylinders: effects of electron-electron interaction and spin-orbit coupling

DOI 10.1515/ntrev-2012-0007
Nanotechnol Rev 1 (2012): 255–271

Review: We explore magneto-transport properties in mesoscopic single-channel rings and multi-channel cylinders within a tight-binding framework in the presence of electron-electron interaction and spin-orbit coupling.

Keywords: persistent current; electron-electron interaction; spin-orbit coupling; mean field approximation.



Gunilla B. Jacobson and Agneta Richter-Dahlfors

Swedish Medical Nanoscience Center at Karolinska Institutet

DOI 10.1515/ntrev-2012-0006
Nanotechnol Rev 1 (2012): 273–279

Review: An integrative research hub that merges cutting-edge nanotechnology and biomedical research to advance the area of nanomedicine.

Keywords: nanomedicine; nanoparticles; nanotechnology; organic bioelectronics; tissue microbiology.

Nebojsa Jaksic

Learning nanotechnology through experimentation: carbon nanotube manufacturing using an electric discharge machine

DOI 10.1515/ntrev-2011-0012
Nanotechnol Rev 1 (2012):
281–287

Review: This work describes implementation, assessment, and evaluation of an undergraduate engineering laboratory experiment dealing with manufacturing of near-gram quantities of multiwall carbon nanotubes using a variation on arc discharge method and an electric discharge machine.

Keywords: arc discharge; carbon nanotubes; electric discharge machine; engineering education.