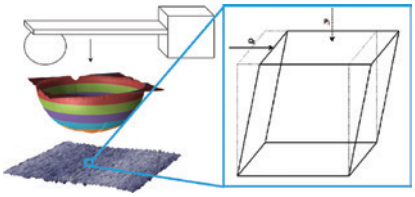
In this issue

Marcin Michałowski
Simulation model for frictional contact of two elastic surfaces in micro/nanoscale and its validation

https://doi.org/10.1515/ntrev-2018-0075
Nanotechnol Rev 2018; 7(5): 355–363

Regular article: In this article, a new friction model is suggested along with a method of its validation with the use of atomic force microscopy, which can be used for this or other nano- or microscale friction models.

Keywords: atomic force microscopy; friction; simulation.

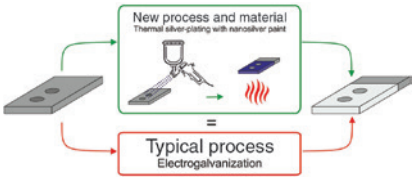


Radosław Pawłowski, Bartłomiej Pawłowski, Hanna Wita, Anna Pluta, Piotr Sobik, Agata Sala, Aleksandra Łanuszewska, Vitalii Patsula, Kazimierz Drabczyk and Małgorzata Jakubowska
Silver nanoparticles in the thermal silver plating of aluminium busbar joints

https://doi.org/10.1515/ntrev-2018-0032
Nanotechnol Rev 2018; 7(5): 365–372

Regular article: Thermal silver plating technology with nanoparticles as an efficient method of conductive layers production on aluminium substrates was studied.

Keywords: aluminium busbars; conductive layers; nanosilver; silver layers; thermal silver plating.

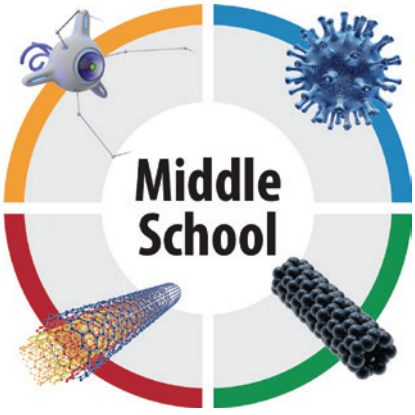


Sohair Sakhnini and Ron Blonder
Insertion points of the essential nanoscale science and technology (NST) concepts in the Israeli middle school science and technology curriculum

https://doi.org/10.1515/ntrev-2018-0026
Nanotechnol Rev 2018; 7(5): 373–391

Nanotechnology Education Contribution: Middle School NST insertion points.

Keywords: middle school; nanoeducation; nanotechnology; science and technology education; science curriculum.



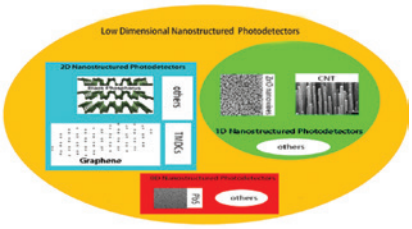
Zhenhui Li, Ke Xu and Fanan Wei

Recent progress in photodetectors based on low-dimensional nanomaterials

https://doi.org/10.1515/ntrev-2018-0084
Nanotechnol Rev 2018; 7(5): 393–411

Review: This manuscript reviews the recent progress in photodetectors based on low-dimensional nanomaterials, including graphene, transition metal dichalcogenides, black phosphorus, ZnO, carbon nanotube, and lead sulfide. Hybrid techniques are also reviewed.

Keywords: nanomaterials; photodetectors; typical low dimensional.



Attarad Ali, Abdul-Rehman Phull and Muhammad Zia

Elemental zinc to zinc nanoparticles: is ZnO NPs crucial for life? Synthesis, toxicological, and environmental concerns

https://doi.org/10.1515/ntrev-2018-0067
Nanotechnol Rev 2018; 7(5): 413–441

Review: Different types of zinc nanoparticles are discussed in detail. Their synthesis, characterization, biomedical and industrial application, toxicity, etc., are highlighted.

Keywords: biologics; cytotoxicity; nanoparticles (NPs); photocatalysis; zinc oxide (ZnO).

Huan Liu, Min Wei and Yuzhong Chen

Optimization of non-linear conductance modulation based on metal oxide memristors

https://doi.org/10.1515/ntrev-2018-0045
Nanotechnol Rev 2018; 7(5): 443–468

Review: This review article provides a practical and useful overview on the issue of conductance modulation linearity in artificial synapses, which can improve through the physical structure and the extra stimulus signal in two ways.

Keywords: conductance modulation; memristor; neuromorphic system; non-linearity.