

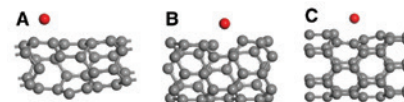
In this issue

Wei Li, Yun Zhao and Teng Wang

Study of Pb ion adsorption on (n, 0) CNTs (n = 4, 5, 6)

<https://doi.org/10.1515/ntrev-2018-0087>
Nanotechnol Rev 2018; 7(6): 469–473

Regular article: The optimized configurations of Pb^{2+} -SV-(n, 0) CNTs (n = 4, 5, 6). The red ball is Pb ion; among these small-diameter CNTs, SV-(6, 0) CNTs have the strongest adsorption to Pb ion.



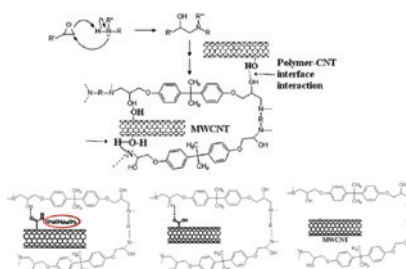
Keywords: adsorption; carbon materials; nanotubes; Pb ion.

Sagar Roy, Roumiana S. Petrova and Somenath Mitra

Effect of carbon nanotube (CNT) functionalization in epoxy-CNT composites

<https://doi.org/10.1515/ntrev-2018-0068>
Nanotechnol Rev 2018; 7(6): 475–485

Regular article: The effective incorporation of CNTs into a polymer matrix is important for enhancing the desired properties of the composites. The introduction of functional groups on the CNT surface promotes efficient adhesion to the polymer and contributes to better dispersion. Together, these provide enhanced properties to the composites. The physical, thermal, and electrical properties of the composites exhibited strong dependence on the nature of functionalization.



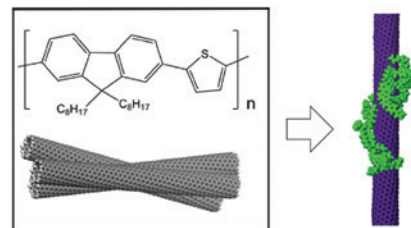
Keywords: functionalized carbon nanotube; interfacial interaction; nanocomposites; physical properties; thermal properties.

Ping Zhang, Wenhui Yi, Hao Xu, Chao Gao, Jin Hou, Weiqiu Jin, Yue Lei and Xun Hou
Supramolecular interactions of poly[(9,9-dioctylfluorenyl-2,7-diyl)-co-thiophene] with single-walled carbon nanotubes

<https://doi.org/10.1515/ntrev-2018-0041>
 Nanotechnol Rev 2018; 7(6): 487–495

Regular article: The strong interaction between PFT and s-SWCNTs can be used in the bulk separation of s-SWCNTs from their mixtures and in enhancing the performance of their hybrid devices.

Keywords: conjugated polymer; energy transfer; photophysical properties; semiconducting single-walled carbon nanotubes.

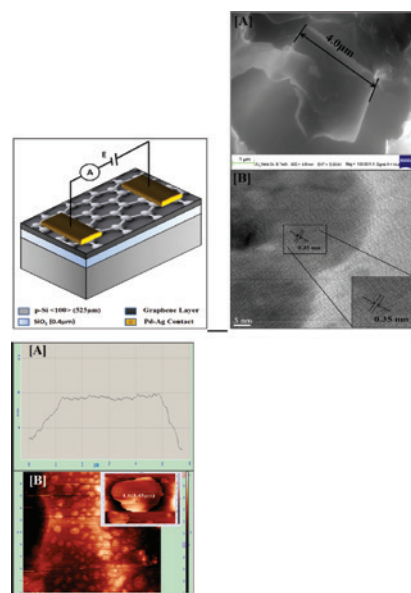


Swapan Das, Chandan K. Ghosh, Chandan K. Sarkar and Sunipa Roy
Facile synthesis of multi-layer graphene by electrochemical exfoliation using organic solvent

<https://doi.org/10.1515/ntrev-2018-0094>
 Nanotechnol Rev 2018; 7(6): 497–508

Regular article: This paper presents a facile method of producing graphene nanosheets by organic liquid-assisted electrochemical exfoliation using tetramethyleammonium hydroxide (TMAH) as organic electrolyte. The process involves low-cost copper as ground electrode and carbon block as anode or cathode. The application of organic electrolyte eliminates the presence of unwanted metal ions on the graphene nanosheets. To the best of our knowledge, this is a maiden effort of producing graphene with pure organic electrolyte using TMAH with low-cost copper electrode. By the use of TMAH, conformal large-area graphene nanosheets of 4.3 nm thickness with an average sheet diameter of 3–4 μm have been obtained.

Keywords: DMF; electrochemical exfoliation; graphene nanosheets; thin film; TMAH.



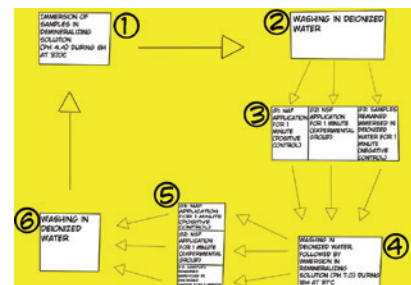
Amitis Vieira Costa e Silva, Joás Araújo Teixeira, Cláudia C.B.O. Mota, Emery Clayton Cabral Correia Lins, Paulo Correia de Melo Júnior, Maria Goretti de Souza Lima, Manuela Arnaud, André Galembeck, Andrea Targino Gadelha, José Ricardo Dias Pereira, Anderson S.L. Gomes and Aronita Rosenblatt

In Vitro morphological, optical and microbiological evaluation of nanosilver fluoride in the remineralization of deciduous teeth enamel

<https://doi.org/10.1515/ntrev-2018-0083>
Nanotechnol Rev 2018; 7(6): 509–520

Regular article: Tooth enamel fragments were treated with Nanosilver fluoride for 14 days through pH cycling then microhardness, fluorescence spectroscopy, OCT and microbiological tests were performed.

Keywords: cariostatic agents; dental caries; dental enamel; *S. mutans*; silver nanoparticles.

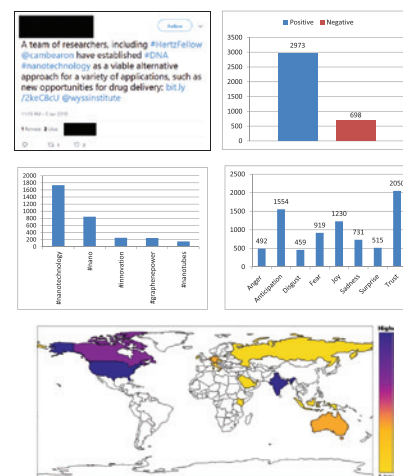


Prabhsimran Singh, Karanjeet Singh Kahlon, Ravinder Singh Sawhney, Rajan Vohra and Sukhmanjit Kaur
Social media buzz created by #nanotechnology: insights from Twitter analytics

<https://doi.org/10.1515/ntrev-2018-0053>
Nanotechnol Rev 2018; 7(6): 521–528

Regular article: This paper critically analyzes the social media hype created by word the *nanotechnology* and related keywords by monitoring and applying the latest data processing strategies on the Twitter traffic.

Keywords: analytics; nanotechnology; sentiment analysis; social media; Twitter.

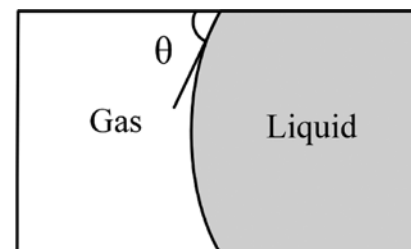


Jia-Zong Jiang, Song Zhang, Lei Liu and Bao-Min Sun
A microscopic experimental study of nanoparticle motion for the enhancement of oxygen absorption in nanofluids

<https://doi.org/10.1515/ntrev-2018-0072>
Nanotechnol Rev 2018; 7(6): 529–539

Regular article: The motion of nanoparticles and the gas-liquid mass transfer coefficients in a quasi-static liquid micro-groove with nanofluids were investigated through image processing and numerical calculation methods by the application of total internal reflection fluorescence microscopy.

Keywords: image analysis; mass transfer; nanoparticle motion; TIRF microscope.



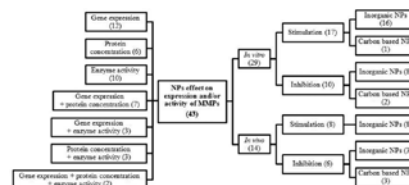
Magdalena Matysiak-Kucharek,
Magdalena Czajka, Krzysztof Sawicki,
Marcin Kruszewski and Lucyna Kapka-
Skrzypczak

Effect of nanoparticles on the expression and activity of matrix metalloproteinases

<https://doi.org/10.1515/ntrev-2018-0110>
Nanotechnol Rev 2018; 7(6): 541–553

Review: This review summarizes and evaluates the current state of knowledge on the effect of nanoparticles on the expression and/or activity of matrix metalloproteinases.

Keywords: enzymes; extracellular matrix; metalloproteinases; nanoparticles.

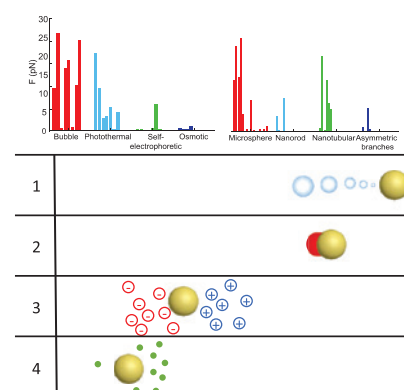


Ziheng Zhan, Fanan Wei, Jianghong Zheng,
Wenguang Yang, Jing Luo and Ligang Yao
**Recent advances of light-driven micro/
nanomotors: toward powerful thrust and
precise control**

<https://doi.org/10.1515/ntrev-2018-0106>
Nanotechnol Rev 2018; 7(6): 555–581

Review: Future advances of light-driven micro/nanomotors (MNM) toward higher driving force and more precise locomotion control are desired before their practical applications. A thorough review of current work on light-driven MNMs indicates that actuation through bubbles and photothermal effect outperforms other mechanisms at driving force. Also, from the perspective of MNM structure shape, microsphere and nanotubular shapes lead to much higher driving force for MNMs when compared with nanorod and asymmetric branches structures. These conclusions will offer a helpful guidance for the promotion of light-driven MNMs.

Keywords: actuation force; light driven; locomotion control; micro/nanomotor.



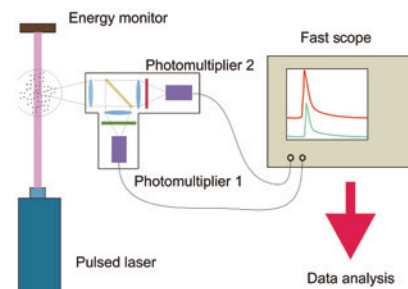
Evgeny Valerievich Gurentsov

A review on determining the refractive index function, thermal accommodation coefficient and evaporation temperature of light-absorbing nanoparticles suspended in the gas phase using the laser-induced incandescence

<https://doi.org/10.1515/ntrev-2018-0080>
Nanotechnol Rev 2018; 7(6): 583–604

Review: The determination of nanoparticle properties using laser-induced incandescence technique is possible.

Keywords: evaporation temperature; nanoparticles; pulsed laser heating; refractive index function; thermal accommodation coefficient.



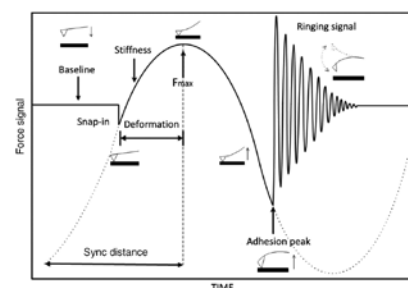
Ke Xu, Weihang Sun, Yongjian Shao, Fanan Wei, Xiaoxian Zhang, Wei Wang and Peng Li

Recent development of PeakForce Tapping mode atomic force microscopy and its applications on nanoscience

<https://doi.org/10.1515/ntrev-2018-0086>
Nanotechnol Rev 2018; 7(6): 605–621

Review: This manuscript reviews the principle of PeakForce Tapping AFM (PFT-AFM) and three typical applications on nanoscience, including high-resolution imaging of soft samples in liquid environment, quantitative nanomechanical property mapping, and electrical/electrochemical property measurement. The future trends of PFT technique development are also discussed.

Keywords: force control; force curve; nanomechanical properties mapping; nanoscience; PeakForce Tapping mode.



Bazila Naseer, Gaurav Srivastava, Ovais Shafiq Qadri, Soban Ahmad Faridi, Rayees Ul Islam and Kaiser Younis
Importance and health hazards of nanoparticles used in the food industry

<https://doi.org/10.1515/ntrev-2018-0076>
Nanotechnol Rev 2018; 7(6): 623–641

Review: Nanotechnology in food is trending but comes with hazards. We need to identify these hazards and make the use of nanotechnology safe and sustainable.

Keywords: food industry; food safety; food technology; nanoparticles; nanotoxicity.

