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REVIEWS

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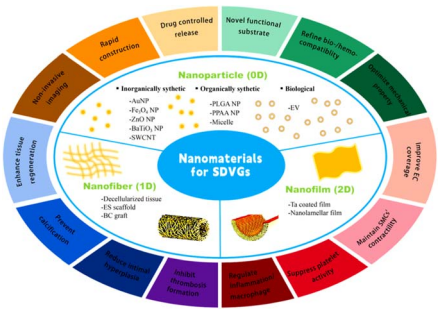
Nanomaterials for small diameter vascular grafts: overview and outlook

Nuoxin Wang,* Haoyuan Wang, Dong Weng, Yanyang Wang, Limei Yu, Feng Wang, Tao Zhang, Juan Liu and Zhixu He*



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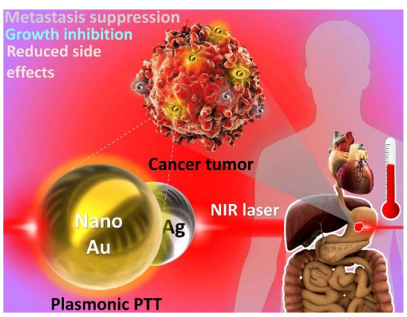
Plasmonic porous micro- and nano-materials based on Au/Ag nanostructures developed for photothermal cancer therapy: challenges in clinicalization

Reza Taheri-Ledari,* Fatemeh Ganjali, Simindokht Zarei-Shokat, Reihane Dinmohammadi, Fereshteh Rasouli Asl, Ali Emami, Zahra Sadat Mojtabapour, Zahra Rashvandi, Amir Kashtiaray, Farinaz Jalali and Ali Maleki*



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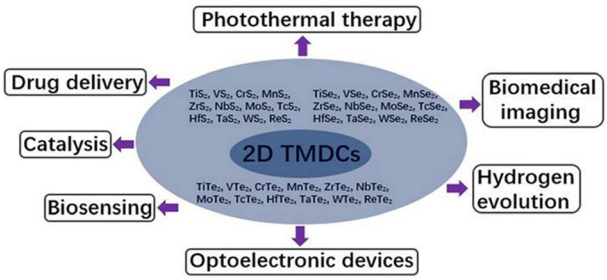
Molybdenum disulfide, exfoliation methods and applications to photocatalysis: a review

Michelle Saliba, Jean Pierre Atanas, Tia Maria Howayek and Roland Habchi*



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Nanoparticle-based applications by atmospheric pressure matrix assisted desorption/ionization mass spectrometry

Yihan Wang, Shunxiang Li* and Kun Qian*

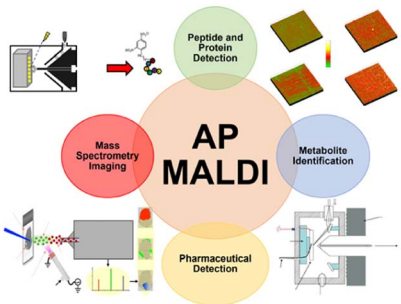

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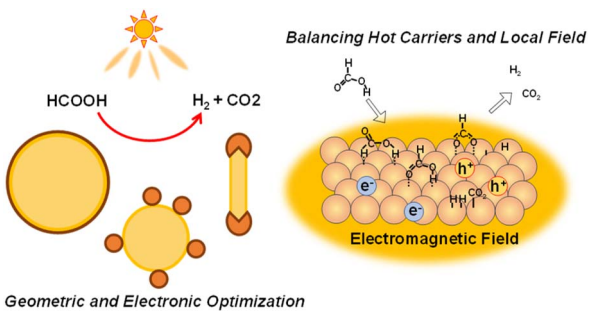
Photo-enhanced dehydrogenation of formic acid on Pd-based hybrid plasmonic nanostructures

Jiannan Zhu, Jiawei Dai, You Xu, Xiaoling Liu, Zhengyun Wang, Hongfang Liu and Guangfang Li*



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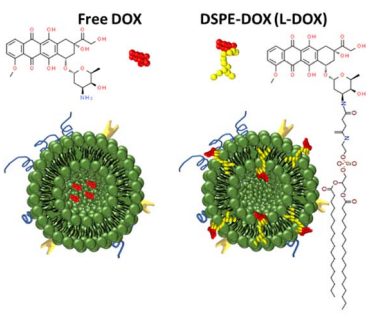
Compartmentalized drug localization studies in extracellular vesicles for anticancer therapy

Arunkumar Pitchaimani,* Miguel Ferreira, Annalisa Palange, Martina Pannuzzo, Claudia De Mei, Raffaele Spano, Roberto Marotta, Beatriz Pelacho, Felipe Prosper and Paolo Decuzzi*



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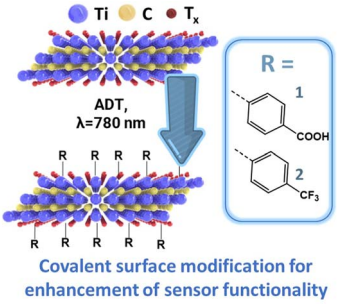

Plasmon assisted $Ti_3C_2T_x$ grafting and surface termination tuning for enhancement of flake stability and humidity sensing performance

Vladislav Buravets, Anastasiia Olshtrem, Vasilii Burtsev, Oleg Gorin, Sergii Chertopalov, Andrei Chumakov, Matthias Schwartzkopf, Jan Lancok, Vaclav Svorcik, Oleksiy Lyutakov and Elena Miliutina*

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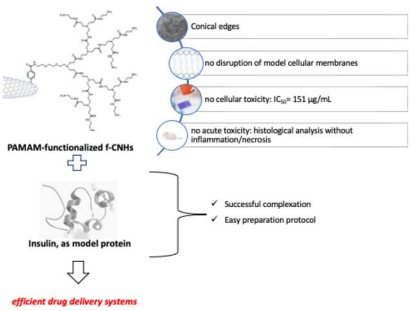

Preclinical evaluation of modified carbon nanohorns and their complexation with insulin

Christina Stangel, Antonia Kagkoura, Natassa Pippa, Dimitris Stellas, Minfang Zhang, Toshiya Okazaki, Costas Demetzos and Nikos Tagmatarchis*

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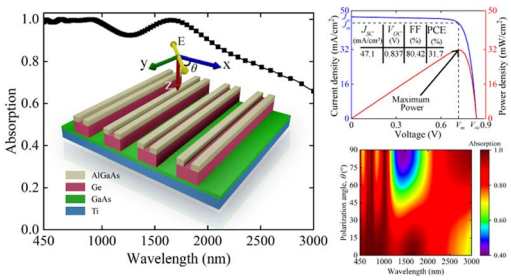

An ingenious high-efficiency double-grating ultra-thin metamaterial-based ultrabroadband light absorber, consisting ofAlGaAs-Ge-GaAs on titanium, was engineered and analyzed.

Ultra-broadband near-perfect metamaterial absorber for photovoltaic applications

Partha Pratim Nakti, Dip Sarker, Md Ishfak Tahmid and Ahmed Zubair*

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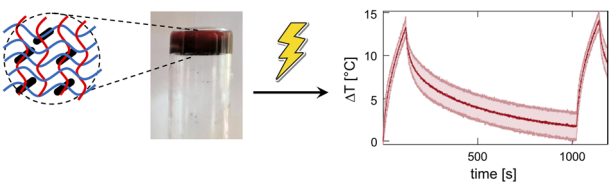

On the role of polymeric hydrogels in the thermal response of gold nanorods under NIR laser irradiation

Elisa Lacroce, Leonardo Bianchi, Laura Polito, Sanzhar Korganbayev, Alessandro Molinelli, Alessandro Sacchetti, Paola Saccomandi* and Filippo Rossi*

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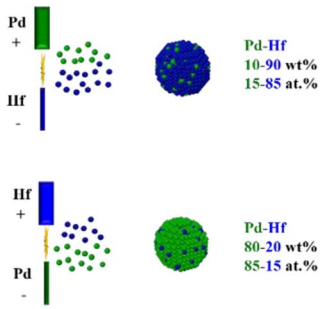
Tuning atomic-scale mixing of nanoparticles produced by atmospheric-pressure spark ablation

Klito C. Petallidou, Pau Ternero, Maria E. Messing, Andreas Schmidt-Ott and George Biskos*



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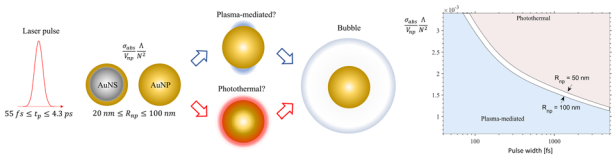
Influence of photothermal and plasma-mediated nano-processes on fluence thresholds for ultrafast laser-induced cavitation around gold nanoparticles

Leonidas Agiotis, Vi Tching De Lille and Michel Meunier*



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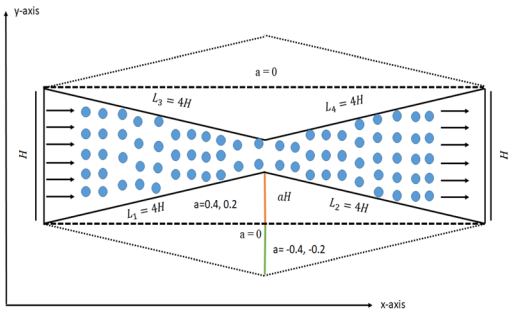
Numerical investigation of heat transfer and fluid flow characteristics of ternary nanofluids through convergent and divergent channels

M. M. Alqarni, Abid A. Memon, M. Asif Memon, Emad E. Mahmoud and Amsalu Fenta*



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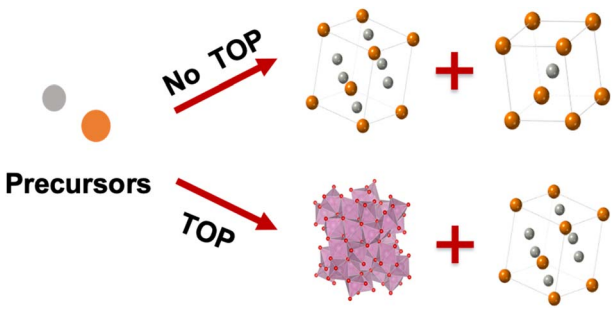
Formation of intermetallic PdIn nanoparticles: influence of surfactants on nanoparticle atomic structure

Baiyu Wang, Jette K. Mathiesen, Andrea Kirsch, Nicolas Schlegel, Andy S. Anker, Frederik L. Johansen, Emil T. S. Kjær, Olivia Aalling-Frederiksen, Tobias M. Nielsen, Maria S. Thomsen, Rasmus K. Jakobsen, Matthias Arenz and Kirsten M. Ø. Jensen*



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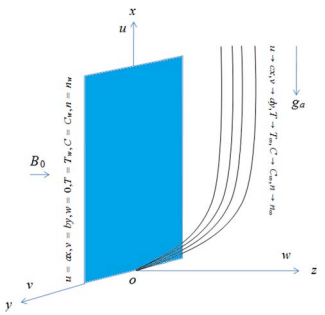

Squeezed Darcy–Forchheimer Casson nanofluid flow between horizontal plates under the effect of inclined magnetic field

M. Asif Memon, Dur-e-Shehwar Sagheer, Mushrifah A. S. Al-Malki, Muhammad Sabeel Khan, Shafqat Hussain, Haseeb ur Rehman and Amsalu Fenta*

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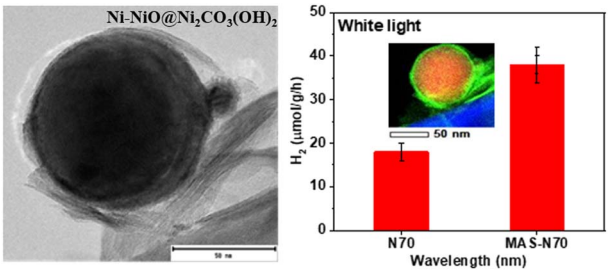

Flexible nanosheets for plasmonic photocatalysis: microwave-assisted organic synthesis of Ni–NiO@$Ni_2CO_3(OH)_2$ core–shell@sheet hybrid nanostructures

Ekta Rani, Parisa Talebi, Terhi Pulkkinen, Vladimir Pankratov and Harishchandra Singh*

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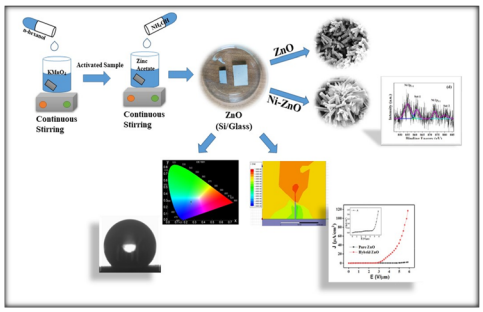

Significant enhancement in the cold emission characteristics of chemically synthesized super-hydrophobic zinc oxide rods by nickel doping

P. Kumar, M. Parashar, K. Chauhan, N. Chakraborty, S. Sarkar, A. Chandra, N. S. Das, K. K. Chattopadhyay, A. Ghoari, A. Adalder, U. K. Ghorai, S. Saini, D. Agarwal, S. Ghosh, P. Srivastava and D. Banerjee*

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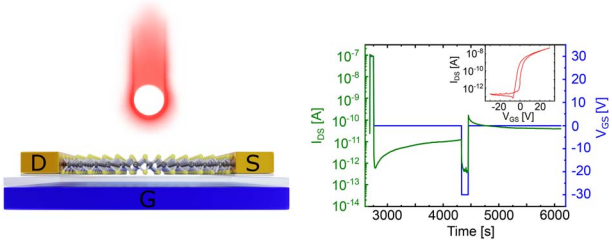

Manipulation of the electrical and memory properties of MoS_2 field-effect transistors by highly charged ion irradiation

Stephan Sleziona,* Aniello Pelella, Enver Faella, Osamah Kharsah, Lucia Skopinski, André Maas, Yossarian Liebsch, Jennifer Schmeink, Antonio Di Bartolomeo and Marika Schleberger

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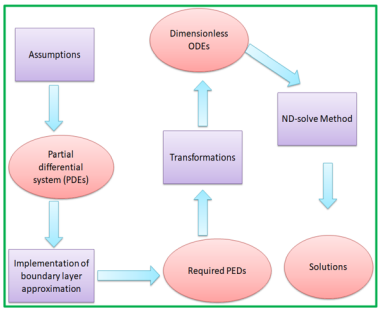
A dissipative and entropy-optimized MHD nanomaterial mixed convective flow for engineering applications

Faqir Shah, Tasawar Hayat, Asad Ullah, Sohail A. Khan* and Shaher Momani



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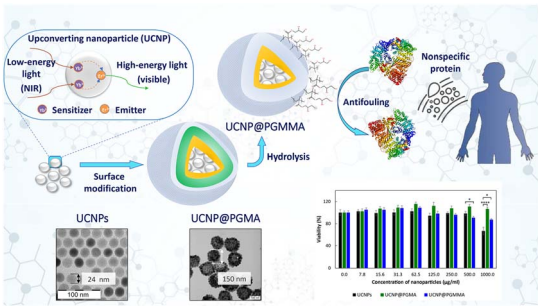
Poly(glycerol monomethacrylate)-encapsulated upconverting nanoparticles prepared by miniemulsion polymerization: morphology, chemical stability, antifouling properties and toxicity evaluation

Taras Vasylyshyn, Vitalii Patsula, Marcela Filipová, Rafal Lukasz Konefal and Daniel Horák*



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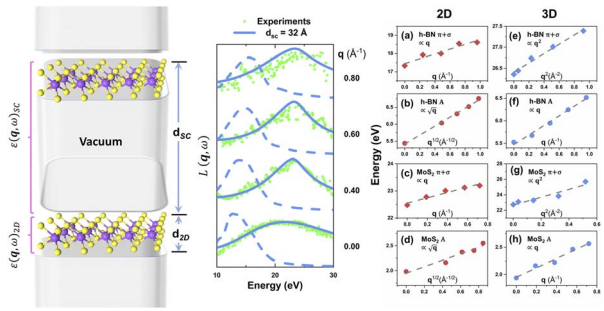
Momentum and thickness dependent excitonic and plasmonic properties of 2D h-BN and MoS_2 restored from supercell calculations

Guang Yang, Jiachen Fan and Shang-Peng Gao*



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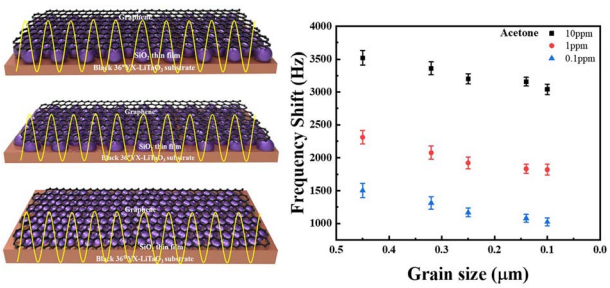
Real-time detection of acetone gas molecules at ppt levels in an air atmosphere using a partially suspended graphene surface acoustic wave skin gas sensor

Haolong Zhou, Sankar Ganesh Ramaraj,* Kaijie Ma, Md Shamim Sarker, Zhiqiang Liao, Siyi Tang, Hiroyasu Yamahara* and Hitoshi Tabata*



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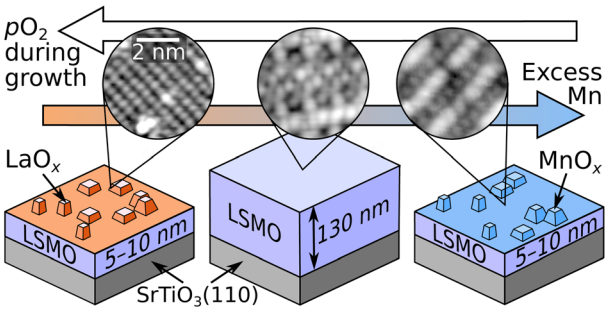

Evolution of the surface atomic structure of multielement oxide films: curse or blessing?

Giada Franceschi,* Renè Heller, Michael Schmid, Ulrike Diebold and Michele Riva

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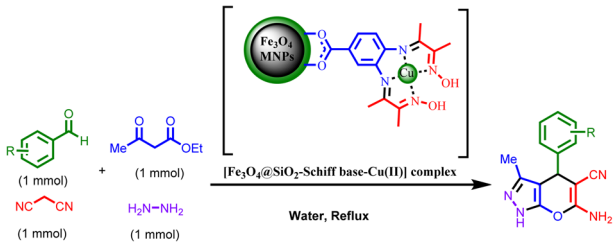
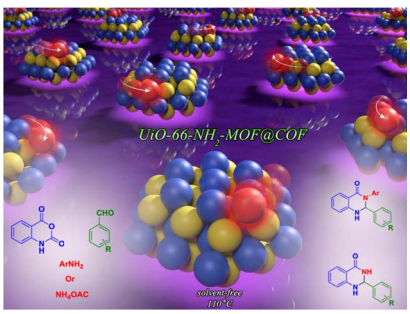


An Fe_3O_4 supported *O*-phenylenediamine based tetraaza Schiff base-Cu(II) complex as a novel nanomagnetic catalytic system for synthesis of pyrano[2,3-*c*]pyrazoles

Rehab Tahseen alhayo, Ghufran Sh. Jassim, Hasanain Amer Naji, A. H. Shather, Israa Habeeb Naser, Luay Ali Khaleel and Haider Abdulkareem Almashhadani*

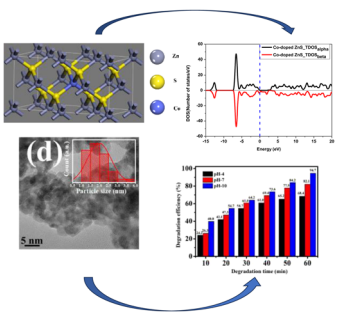
7031



Unique and outstanding catalytic behavior of a novel MOF@COF composite as an emerging and powerful catalyst in the preparation of 2,3-dihydroquinazolin-4(1*H*)-one derivatives

Mohammad Ali Ghasemzadeh* and Boshra Mirhosseini-Eshkevari

7042



Cobalt-substituted ZnS QDs: a diluted magnetic semiconductor and efficient photocatalyst

Rahul Sonkar, Nur Jalal Mondal, Samir Thakur, Eeshankur Saikia, Mritunjoy Prasad Ghosh* and Devasish Chowdhury*

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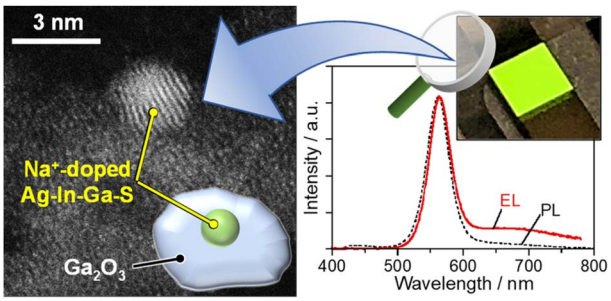
PAPERS

7057

One-pot synthesis of Ag–In–Ga–S nanocrystals embedded in a Ga_2O_3 matrix and enhancement of band-edge emission by Na^+ doping

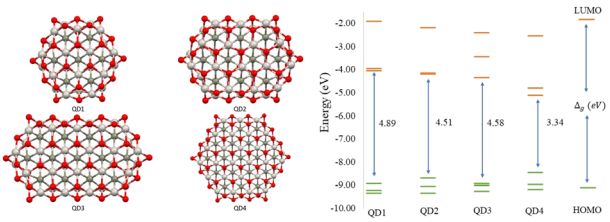
Makoto Tozawa, Chie Miyamae, Kazutaka Akiyoshi, Tatsuya Kameyama, Takahisa Yamamoto, Genichi Motomura, Yoshihide Fujisaki, Taro Uematsu, Susumu Kuwabata and Tsukasa Torimoto*



7067

Modeling size and edge functionalization of MXene-based quantum dots and their effect on electronic and magnetic properties

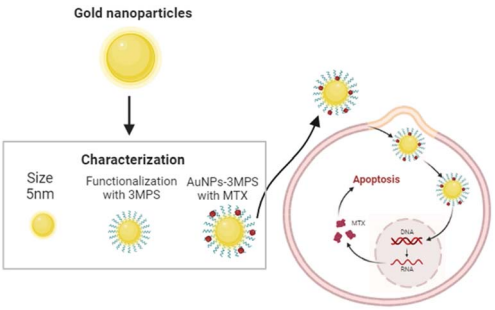
Barbora Vénosová and František Karlický*



7077

Hybrid AuNPs-3MPS-MTX nanosystem and its evaluation for treating cervical cancer and melanoma

M. J. Hernández-Esparza, Ilaria Fratoddi, Sara Cerra, K. Juarez-Moreno* and R. Huirache-Acuña*



EXPRESSION OF CONCERN

7086

Expression of concern: Tin–zinc-oxide nanocomposites (SZO) as promising electron transport layers for efficient and stable perovskite solar cells

Ahmed E. Shalan,* Ayat N. El-Shazly, Mohamed M. Rashad and Nageh K. Allam*

CORRECTION

7087

Correction: A hierarchical integrated 3D carbon electrode derived from gingko leaves *via* hydrothermal carbonization of H_3PO_4 for high-performance supercapacitors

Han Liu, Fumin Zhang, Xinyu Lin, Jinggao Wu and Jing Huang*

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