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Cover
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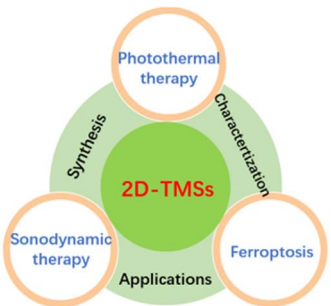
2773

Biotechnology-assisted cancer therapy using metal sulfides based on their optical and thermophysical properties

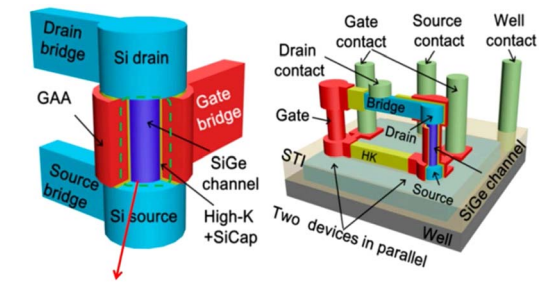
Fei Luo, Shaohua Song,* Gang Zhou, Youfu Wang, Zhiren Fu and Hao Liu*



2796

Advances in core technologies for semiconductor manufacturing: applications and challenges of atomic layer etching, neutral beam etching and atomic layer deposition

Tzu-Yi Lee, Pei-Tien Chen, Chien-Chi Huang, Hsin-Chu Chen,* Li-Yin Chen, Po-Tsung Lee, Fang-Chung Chen, Ray-Hua Horng and Hao-Chung Kuo*



Channel formation by SiGe isotropic selective etching

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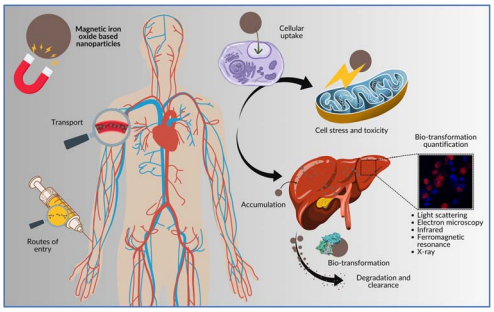
REVIEWS

2818

Biotransformation and biological fate of magnetic iron oxide nanoparticles for biomedical research and clinical applications

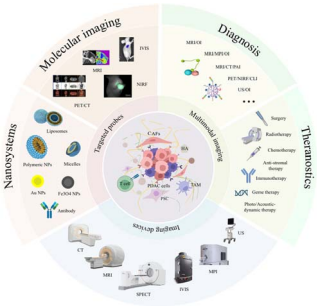
Carlos Jacinto,* Yasir Javed, Gabriel Lavorato, Wilson A. Tarraga, Blessed Isaac C. Conde, Juan Manuel Orozco, Agustin S. Picco, Joel Garcia,* Carlos Sato Baraldi Dias, Sonia Malik* and Surender Kumar Sharma*



2887

Advancements in molecular imaging for the diagnosis and treatment of pancreatic ductal adenocarcinoma

Xun Hu, Zihua Wang, Yuting Zhu, Zhangfu Li, Hao Yan,* Xinming Zhao* and Qian Wang*

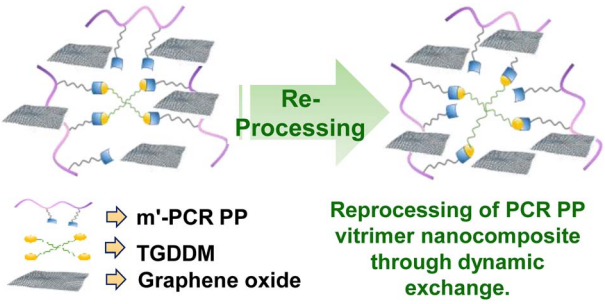


PAPERS

2904

'Vitrimer nanocomposites' derived from graphene oxide and post-consumer recycled polypropylene

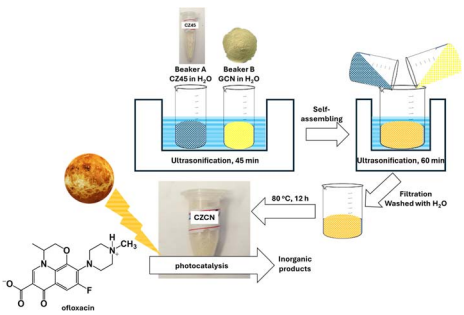
Indranil Dey, Debashrita Kundu, Sayon Ghosh, Samir Mandal, Ketaki Samanta* and Suryasarathi Bose*



2916

Microwave-assisted synthesis of self-assembled C-doped-ZnO/g-C_3N_4 heterojunction catalysts for effective photodegradation of ofloxacin antibiotic

Thi Viet Ha Luu, Ngoc Nhiem Dao,* Van VinhNguyen, Quang BacNguyen, Thi Ha Chi Nguyen, Ngoc Chuc Pham, Ngoc Hoanh Dao and Trung Kien Nguyen*



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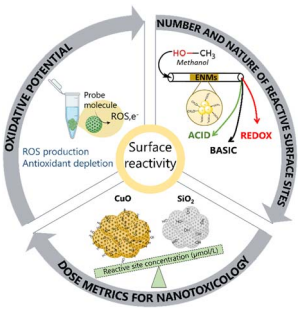
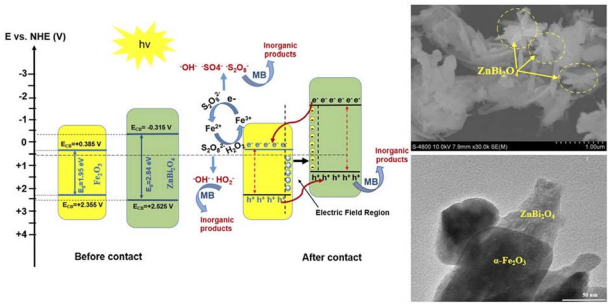


A refined dose metric for nanotoxicology based on surface site reactivity for oxidative potential of engineered nanomaterials

Victor Alcolea-Rodriguez,* Felice C. Simeone, Verónica I. Dumit, Lara Faccani, Victoria Toledo, Andrea Haase, Nicolas Coca-López, Raquel Portela and Miguel A. Bañares*

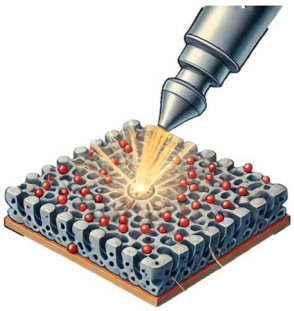
2942



A novel 3D Fe_2O_3@$ZnBi_2O_4$ n–p heterojunction with high photocatalytic activity under visible light

Thi Viet Ha Luu,* Van Cuong Nguyen, Thi Dieu Thuy Tran, Van Dat Doan, Thi Lieu Nguyen, Nguyen Xuan Dung and Huu Phuc Dang*

2955



Engineered etching and laser treatment of porous silicon for enhanced sensitivity and speed of Pt/n-PSi/Pt UV photodetectors

Asad A. Thahe,* Ali Dahi, Motahher A. Qaeed, Omar F. Farhat, Hazri Bakhtiar and Nageh K. Allam*

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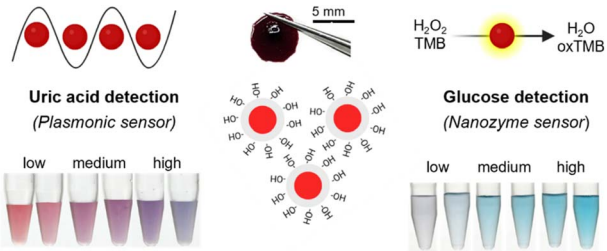

A dual-functional nanogold tablet as a plasmonic and nanozyme sensor for point-of-care applications

Zubi Sadiq, Seyed Hamid Safiabadi Tali, Maryam Mansouri and Sana Jahanshahi-Anbuhi*

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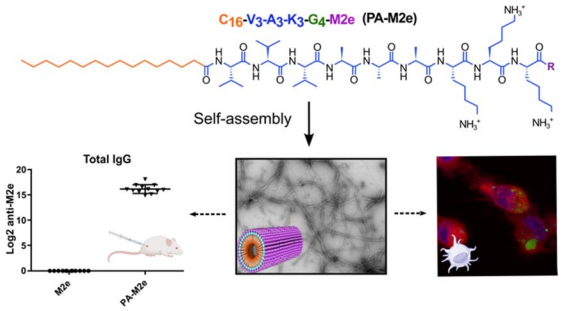
Evaluation of cylindrical micelles assembled from amphiphilic β-peptides as antigen delivery nanostructures

Clément Martin, Mélanie Côté-Cyr, Phuong Trang Nguyen, Denis Archambault* and Steve Bourgault*



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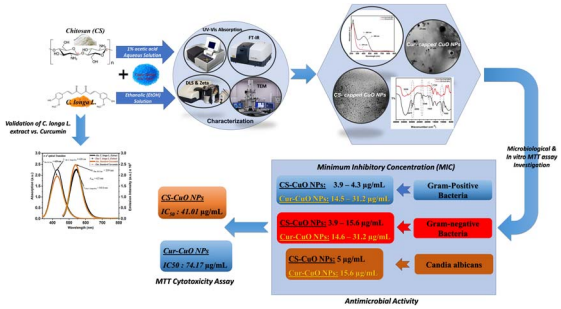
Evaluation of the antimicrobial activity of chitosan- and curcumin-capped copper oxide nanostructures against multi-drug-resistant microorganisms

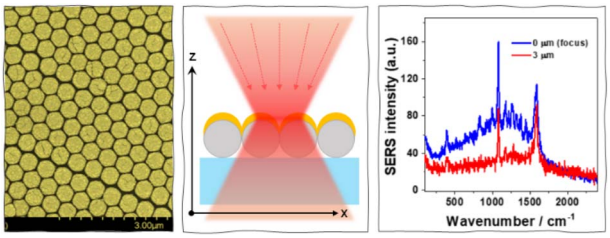
Noura El-Kattan, Mostafa A. Ibrahim, Ahmed N. Emam,* Khaled Metwally, Fady Sayed Youssef, Nourelhuda Ahmed Nassar and Ahmed S. Mansour



3008

The role of focused laser plasmonics in shaping SERS spectra of molecules on nanostructured surfaces

Fran Nekvapil and Cosmin Farcău*



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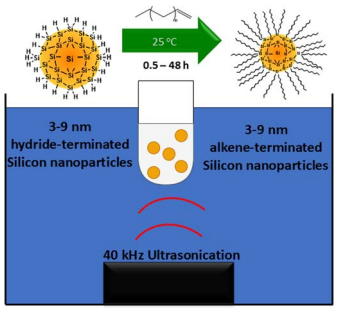
Sonochemically activated room temperature hydrosilylation of silicon nanoparticles

Jonathan Trach, Shawna Williams, Brendan Michalczyk, Cole Butler, Alkiviathes Meldrum, John Washington and Jonathan G. C. Veinot*



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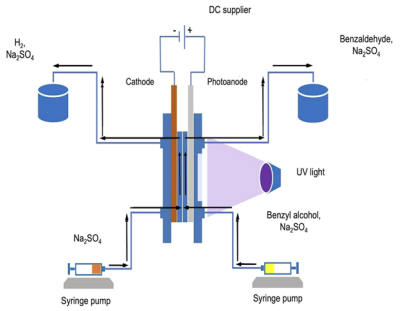
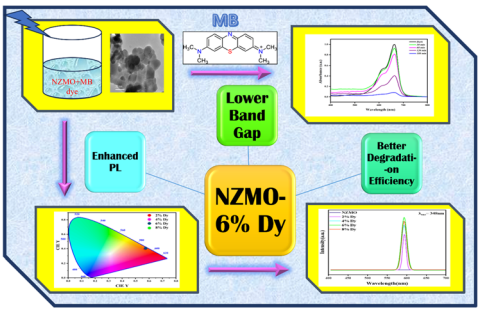


Efficient photoelectrochemical oxidation of benzyl alcohol in a microchannel flow cell using compact and mesoporous TiO_2 photoanodes

Sirachat Sattayarak and Paravee Vas-Umnuay*

3038



Enhanced photoluminescence and photocatalytic properties in Dy-doped sodium zinc molybdate synthesized *via* a green microwave-assisted method

Sourabh Gouraha, Khalid Bin Masood, Sadaf Jamal Gilani, Apoorva Rai, H. S. Tewari and Jai Singh*

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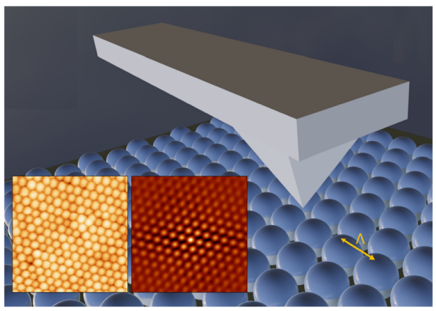

Lattice variation upon water adsorption in silica opals measured by *in situ* atomic force microscopy

Francisco Gallego-Gómez, Eider Berganza,* Miguel Morales, Álvaro Blanco,* Cefe López, Agustina Asenjo and Miriam Jaafar

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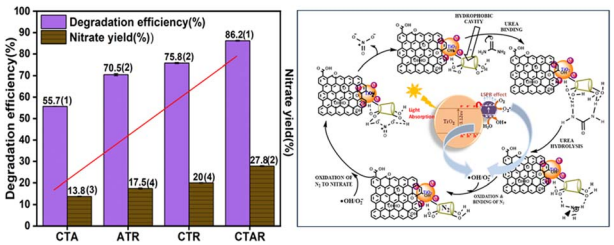

β-Cyclodextrin and reduced graphene oxide loaded Ag–TiO_2 composites for enhanced photocatalytic oxidation of urea under sunlight

Palak Soni, Bonamali Pal* and Raj Kumar Das*

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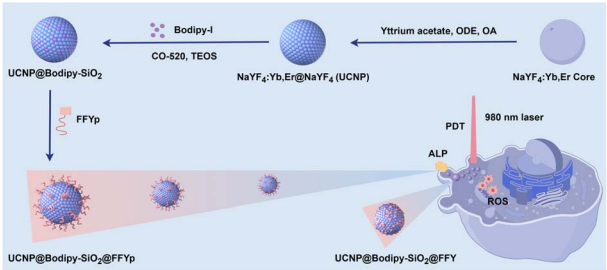
Enzyme-triggered aggregation of upconversion nanoparticles for targeted photodynamic therapy *via* NIR irradiation

Bo Ling, Yaguang Wang, Huaze Dong, Hongqi Chen* and Lun Wang*



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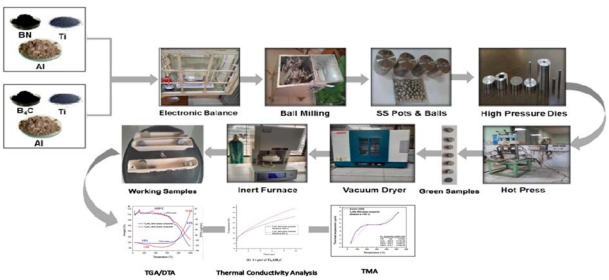
Tailoring the thermal and thermomechanical characteristics of novel MAX phase boron composites in high-temperature applications

Md. Shahinoor Alam,* Mohammad Asaduzzaman Chowdhury, Md. Saiful Islam, Md. Moynul Islam, Tasmina Khandaker, M. A. Gafur and Dipa Islam



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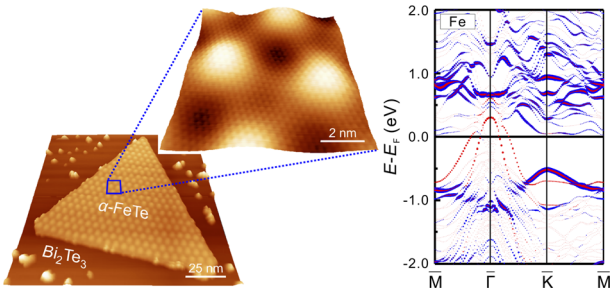
Fabricating a hexagonal FeTe monolayer with a moiré superlattice on topological insulator Bi_2Te_3

Yen-Hui Lin, Yu-Hsiang Chung, Guan-Yu Chen, Hung-Chin Lee, Nitin Kumar, Chia-Ju Chen, Jia-An Lin, Chun-Yu Mou, Allan H. MacDonald, Chih-Kang Shih, Dah-An Luh,* Jung-Jung Su* and Pin-Jui Hsu*



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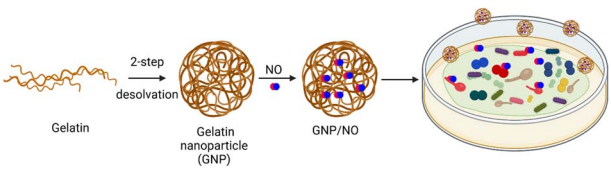
Antimicrobial nitric oxide releasing gelatin nanoparticles to combat drug resistant bacterial and fungal infections

Erin Myles, Raechelle. A. D'Sa and Jenny Aveyard*



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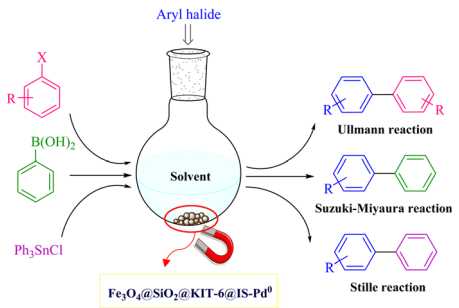

Palladium-immobilization on KIT-6 mesoporous silica magnetite nanoparticles as a stable nanocatalyst for cross-coupling and homo-coupling reactions

Zahra Moradi, Mostafa Koolivand, Mohsen Nikoorazm* and Arash Ghorbani-Choghamarani

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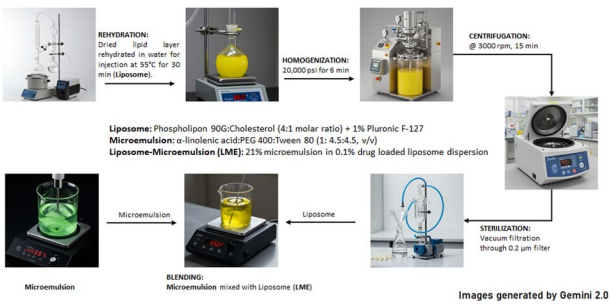

Development and *in vitro* and *ex vivo* characterization of a twin nanoparticulate system to enhance ocular absorption and prolong retention of dexamethasone in the eye: from lab to pilot scale optimization

Muhammad Sarfraz,* Goutam Behl, Sweta Rani, Niall O'Reilly, Peter McLoughlin, Orla O'Donovan, Alison L. Reynolds, John Lynch and Laurence Fitzhenry*

CORRECTION

3143

Correction: Development and *in vitro* and *ex vivo* characterization of a twin nanoparticulate system to enhance ocular absorption and prolong retention of dexamethasone in the eye: from lab to pilot scale optimization

Muhammad Sarfraz,* Gautam Behl, Sweta Rani, Niall O'Reilly, Peter McLoughlin, Orla O'Donovan, Alison L. Reynolds, John Lynch and Laurence Fitzhenry*

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