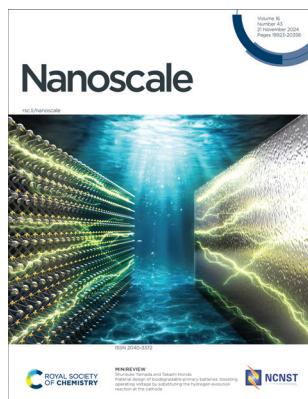


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ISSN 2040-3372 CODEN NANOHL 16(43) 19923–20358 (2024)



Cover

See Shunsuke Yamada and
Takashi Honda,
pp. 20027–20036.

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EDITORIAL

19936

Introduction to micro- and nano-motors

Li Zhang,* Martin Pumera,* Samuel Sánchez* and Xing Ma*

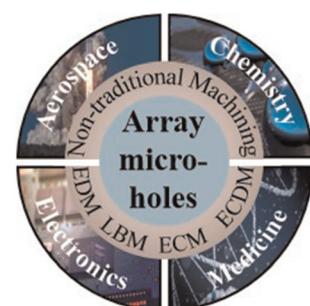


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Developments, challenges and future trends in advanced sustainable machining technologies for preparing array micro-holes

Yang Liu, Pengfei Ouyang, Zhaoyang Zhang,* Hao Zhu,* Xiaolei Chen, Yufeng Wang, Benkai Li, Kun Xu, Jingtao Wang and Jinzhong Lu





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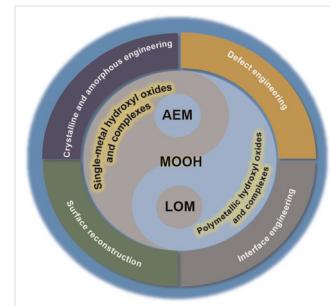
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REVIEWS

19970

Recent advances in the synthesis of transition metal hydroxyl oxide catalysts and their application in electrocatalytic oxygen evolution reactions

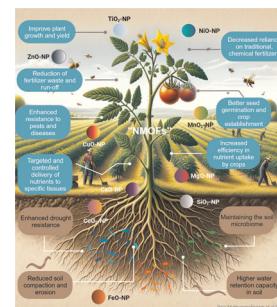
Zhi-Jie Zhang, Hui-Min Xu, Chen-Jin Huang,
Ting-Yu Shuai, Qi-Ni Zhan and Gao-Ren Li*



19998

Nano-sized metal oxide fertilizers for sustainable agriculture: balancing benefits, risks, and risk management strategies

Raja Muthuramalingam Thangavelu,*
Washington Luis da Silva,* Nubia Zuverza-Mena,
Christian O. Dimkpa and Jason C. White

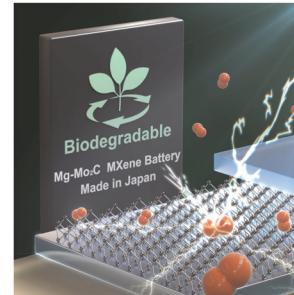


MINIREVIEWS

20027

Material design of biodegradable primary batteries: boosting operating voltage by substituting the hydrogen evolution reaction at the cathode

Shunsuke Yamada* and Takashi Honda



20037

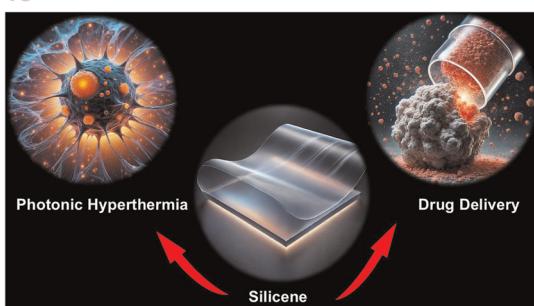
Unlocking new possibilities: application of MXenes in 3D bioprinting for advanced therapy

Yusuf Olatunji Waidi* and Nipun Jain



MINIREVIEWS

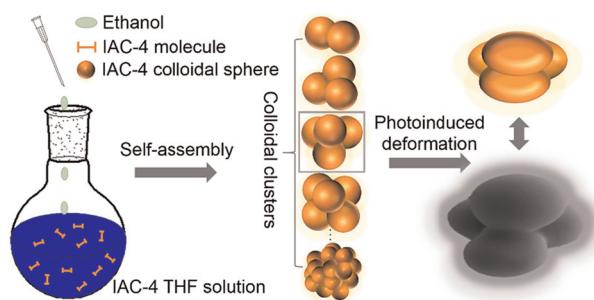
20048

**Two-dimensional silicene-based technologies in oncology: an emerging avenue**

Joydip Sengupta and Chaudhery Mustansar Hussain*

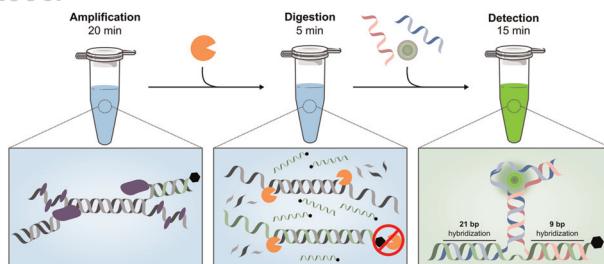
COMMUNICATIONS

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**Photomanipulatable colloidal clusters from the aggregation of azo molecular glass spheres**

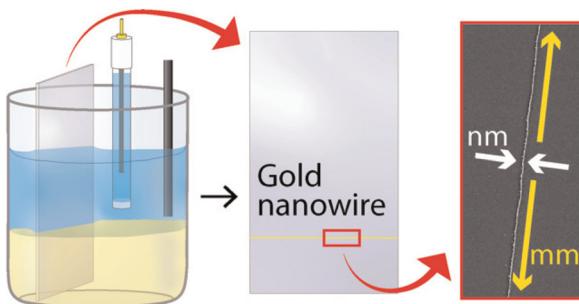
Bo Tang,* Lier Wang, Xitong Ai, Chuyi Liao, Zhiyuan Xiong, Yaning He and Xiaogong Wang*

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**Nucleic acid detection with single-base specificity integrating isothermal amplification and light-up aptamer probes**

Jaekyun Baek, Jihyun Park and Youngeun Kim*

20073

**Single gold nanowires with ultrahigh ($>10^4$) aspect ratios by triphasic electrodeposition**

Guillermo Colón-Quintana, Thomas B. Clarke, Sakshi A. Ailawar and Jeffrey E. Dick*

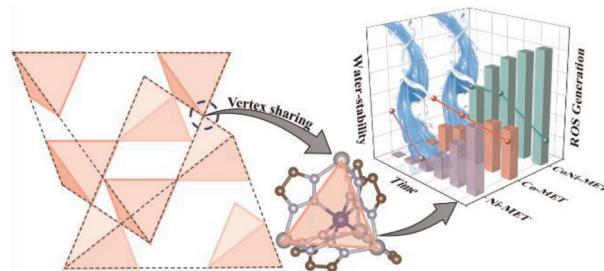


COMMUNICATIONS

20082

Dual metal centers within a water-stable Co/Ni bimetallic metal-triazolate framework contribute to durable photocatalysis for water treatment

Minling Zheng, Yubo Liu, Qifu Zhang, Wenjing Li, Yong Zhang, Guangxue Feng, Yating Hu* and Shaoming Huang

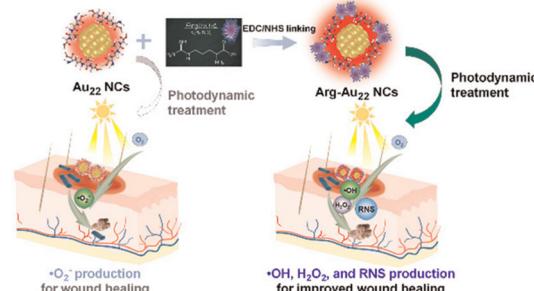


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Modulating the photodynamic modality of Au_{22} nanoclusters through surface conjugation of arginine for promoted healing of bacteria-infected wounds

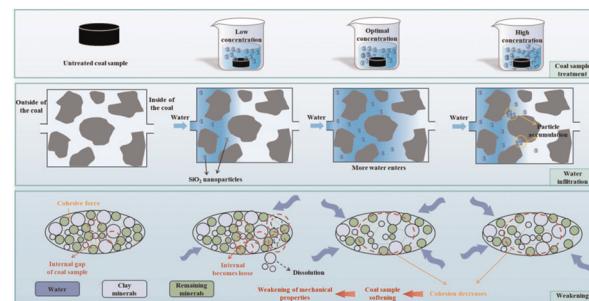
Xinyue Dou,* Sariah Saalah, Chel-Ken Chiam, Jianping Xie* and Coswald Stephen Sipaut*



20100

Effect of SiO_2 nanofluid concentration on micro-mechanical weakening behavior of coal

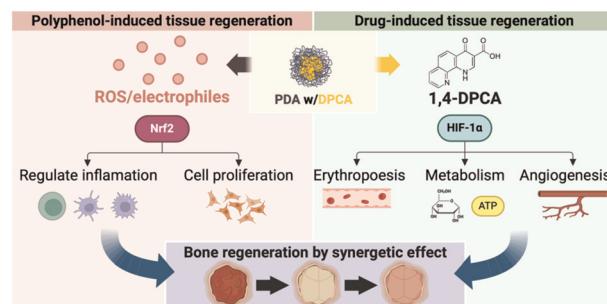
Quanle Zou, Bochao Xu,* Weizhi Wang, Yulin Hu, Ting Liu,* Qingsong Li, Tengfei Ma, Haolong Zheng and Zixuan Huo



20118

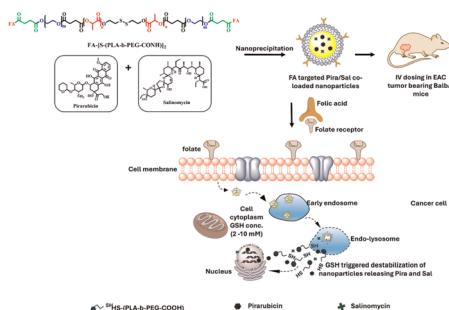
Synergistic effect of ROS-generating polydopamine on drug-induced bone tissue regeneration

Hyeju Han, Bongkyun Kang, Shazid Md. Sharker, Tabassum Binte Kashem, Yuejin Kim, Jeehee Lee, Minok Park, Eunjeong Kim, YunJae Jung, Jinkyu Lim,* Seungwon Ryu* and Kyueui Lee*



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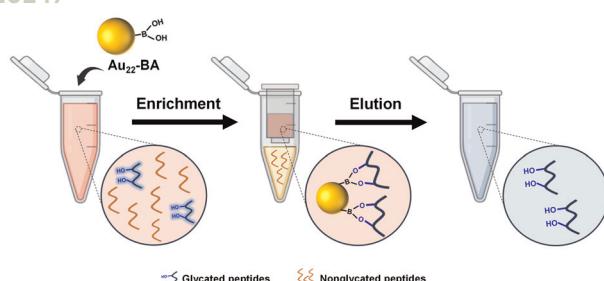
20131



Folic acid-targeted redox responsive polylactic acid-based nanoparticles co-delivering pirarubicin and salinomycin suppress breast cancer tumor growth *in vivo*

Priya Gupta, Ankushi Bansal,* Harshdeep Kaur, Mohd Anees, Neetu Singh and Harpal Singh*

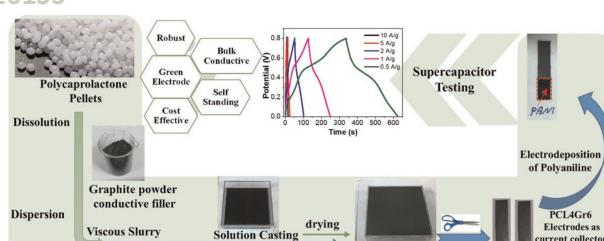
20147



Effective enrichment of glycated proteome using ultrasmall gold nanoclusters functionalized with boronic acid

Hongmae Heo, Seonghyeon Cho, Yuhyeon Kim, Soomin Ahn, Jeong-hun Mok, Hookeun Lee* and Dongil Lee*

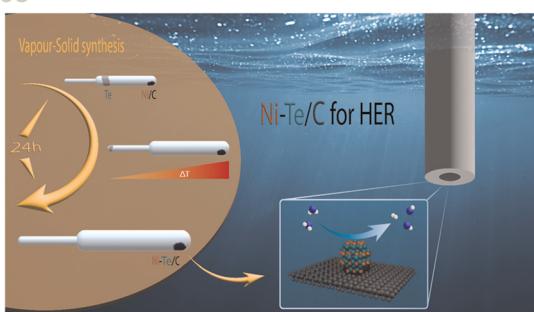
20155



An eco-friendly polycaprolactone/graphite composite as a robust freestanding electrode platform for supercapacitive energy storage

Rajeev Gupta* and Monika Singhal

20168



Active site engineering of intermetallic nanoparticles by the vapour–solid synthesis: carbon black supported nickel tellurides for hydrogen evolution

Daniel Garstenauer, Patrick Guggenberger, Ondřej Zobač, Franz Jirsa and Klaus W. Richter*

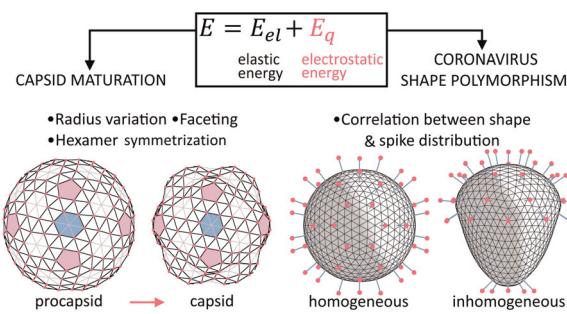


PAPERS

2018

Electrostatic interactions and structural transformations in viral shells

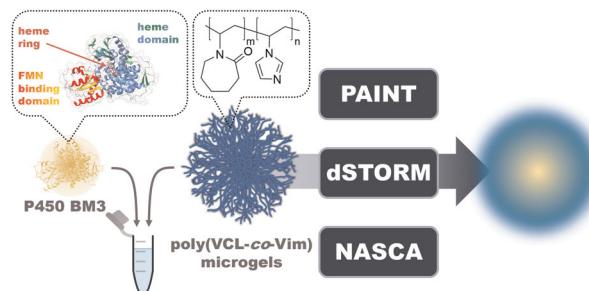
Ivan Yu. Golushko, Daria S. Roshal, Olga V. Konevtsova, Sergei B. Rochal* and Rudolf Podgornik*



2019

Nanoscopic visualization of microgel-immobilized cytochrome P450 enzymes and their local activity

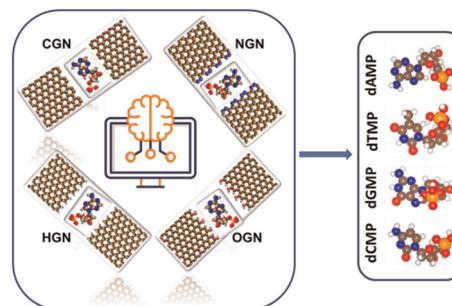
Lukas Schubert, Chiara Nenninger, Maximilian Nöth, Thomke Belthle, Robert Dirk de Lange, Andrij Pich, Ulrich Schwaneberg and Dominik Wöll*



2020

Effect of graphene electrode functionalization on machine learning-aided single nucleotide classification

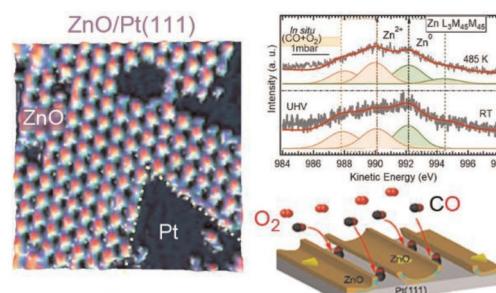
Mohd Rashid, Milan Kumar Jena, Sneha Mittal and Biswarup Pathak*



2021

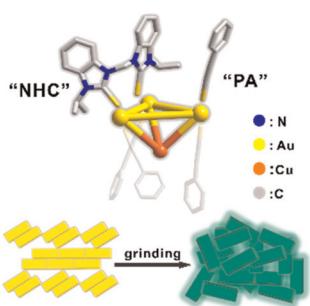
Morphology–electronic effects in ultra-model nanocatalysts under the CO oxidation reaction: the case of ZnO ultrathin films grown on Pt(111)

Hang Liu, Lei Zhang, Sébastien Lebègue, Fabrice Bournel, Jean-Jacques Gallet and Ahmed Naitabdi*



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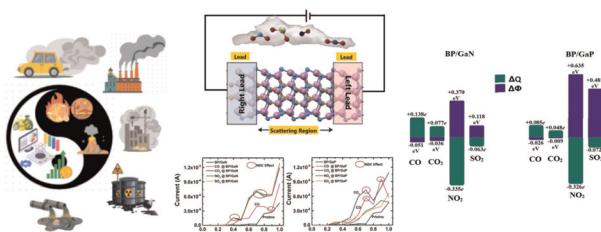
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N-Heterocyclic carbene-stabilized gold–copper nanoclusters: synthesis, bonding and mechanochromism

Dongjie Zuo, Huifang Guo, Qinghua Xu, Ayisha He, Zilin Li, Simin Li* and Hui Shen*

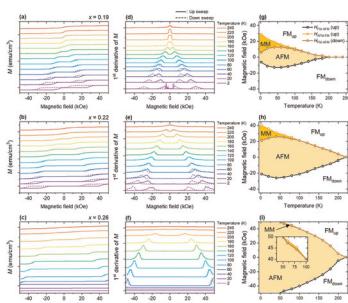
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BP/GaN and BP/GaP core/shell nanowires: theoretical insights into photovoltaic and gas-sensing abilities

Rishit S. Shukla, Vedit B. Zala, Sanjeev K. Gupta* and P. N. Gajjar*

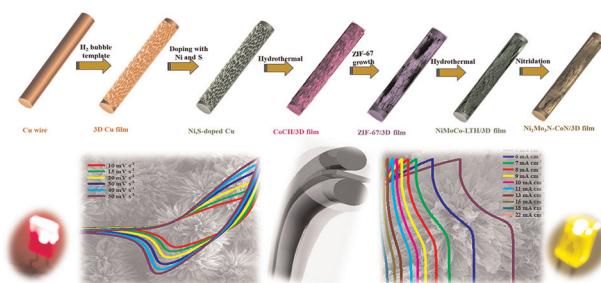
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Metamagnetic transition and meta-stable magnetic state in Co-doped Fe_3GaTe_2

Hyo-Bin Ahn, Hyunjong Lim, Jaegu Song, Jisung Lee, Seung-Young Park, Minwoong Joe, Chang-Jong Kang, Kyoung-Whan Kim, Tae-Eon Park, Tuson Park and Changgu Lee*

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Ni_xS co-doped Cu dendrites decorated with core–shell architecture assisted by MOF and $\text{Fe}_{0.92}\text{Co}_{0.08}\text{S}$ nanoflakes on nanocellulose/graphene fibers for fabrication of flexible wire-type micro-supercapacitor

Leila Naderi and Saeed Shahrokhian*

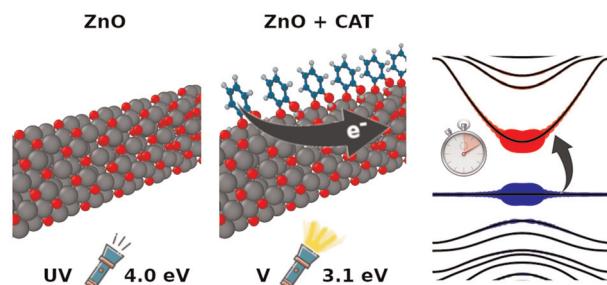


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20280

Rationalization of the light-induced electron injection mechanism in a model 1D ZnO nanowire-dye complex: insights from real-time TD-DFTB simulations

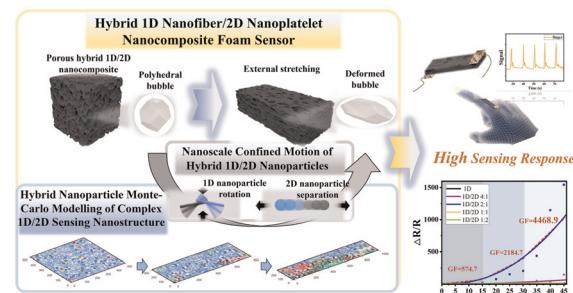
Dalma M. Márquez, Carlos R. Lien-Medrano,* Germán J. Soldano and Cristián G. Sánchez*



20288

High sensing performance flexible nanocomposite sensor with a hybrid nanostructure constructed via nanoscale confined motion of nanofibers and nanoplatelets

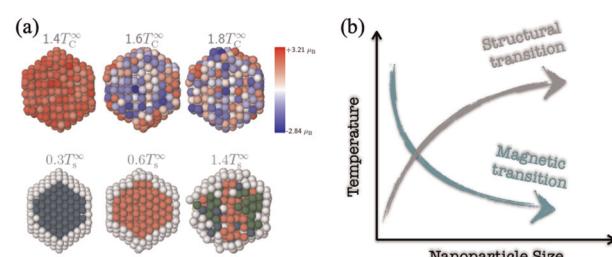
Zhenghui Xie, Feiran Meng, Junlong Yang, Yuhong Wang, Chul B. Park, Pengjian Gong* and Guangxian Li



20304

Size effect on the structural and magnetic phase transformations of iron nanoparticles

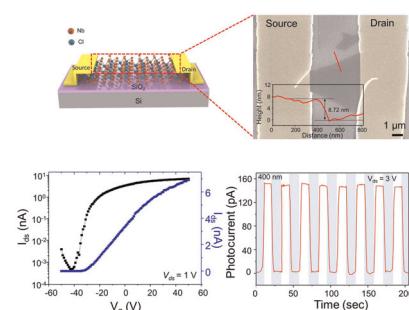
Alexis Front, Georg Daniel Förster, Chu Chun Fu, Cyrille Barreteau and Hakim Amara



20312

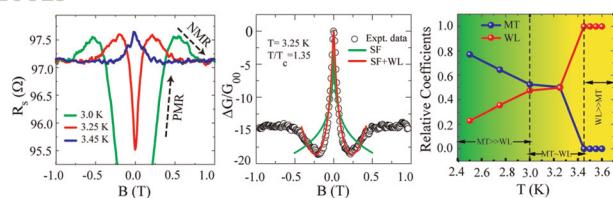
A negative photoconductivity photodetector based on two-dimensional Nb₃Cl₈

Bom Lee, Xiaojie Zhang, Jinsu Kang, Byung Joo Jeong, Sooheon Cho, Kyung Hwan Choi, Jiho Jeon, Sang Hoon Lee, Daho Kim, Yeong Hyeop Kim, Ji-Hee Kim,* Hak Ki Yu* and Jae-Young Choi*



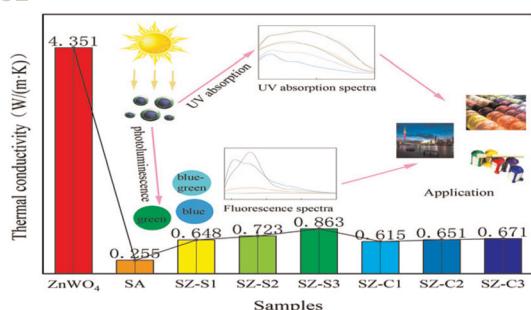
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20319

**Interplay between superconducting fluctuations and weak localization in disordered TiN thin films**

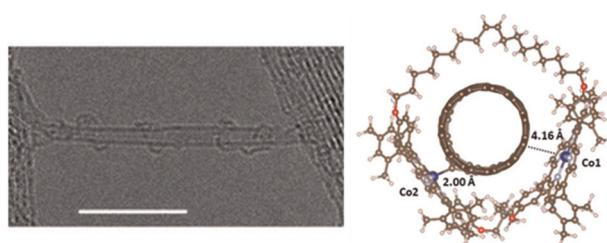
Sachin Yadav, Bikash Gajar, R. P. Aloysius and Sangeeta Sahoo*

20331

**Preparation and application of high thermal conductivity phase change microcapsules with fluorescence characteristics based on a ZnWO₄ shell**

H. Cheng, B. Tang,* H. Y. Bao, F. Shan and C. X. Lu

20342

**Magnetic dimeric metal-porphyrin rings mechanically bonded around carbon nanotubes: the role of nanotube defects modulating magnetic properties**

Rocío Sánchez-de-Armas,* Nicolás Montenegro-Pohlhammer, Emilio M. Pérez, Enrique Burzurí and Carmen J. Calzado

CORRECTION

20354

Correction: Ce6-Conjugated and polydopamine-coated gold nanostars with enhanced photoacoustic imaging and photothermal/photodynamic therapy to inhibit lung metastasis of breast cancer

Ziwei Li, Fan Yang, Di Wu,* Yanhong Liu, Yang Gao, Haichen Lian, Hongxin Zhang, Zhibin Yin, Aiguo Wu* and Leyong Zeng*



RETRACTION

20356

Retraction: Enhanced activity of vancomycin by encapsulation in hybrid magnetic nanoparticles conjugated to a cell-penetrating peptide

Wenjie Zhang, Reza Taheri-Ledari, Zoleikha Hajizadeh, Ehsan Zolfaghari, Mohammad Reza Ahghari, Ali Maleki,* Michael R. Hamblin* and Ye Tian*

