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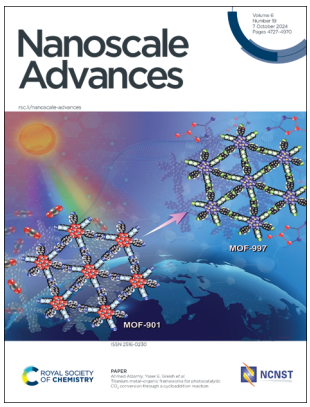

Cover
See Ahmed Alzamly, Yaser E. Greish *et al.*, pp. 4804–4813. Image reproduced by permission of James Kegere, Shaikha S. Alneyadi, Alejandro Perez Paz, Lamia A. Siddig, Afra Alblooshi, Mohamed A. Alnaqbi, Ahmed Alzamly and Yaser E. Greish from *Nanoscale Adv.*, 2024, **6**, 4804.

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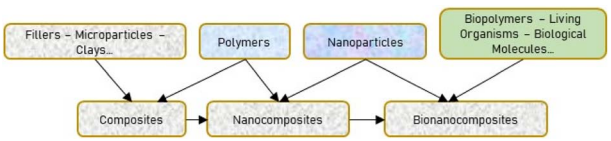
Bionanocomposite materials for electroanalytical applications: current status and future challenges

Gullit Deffo,* Ranil Clément Tonleu Temgoua, Evangéline Njanja and Panchanan Puzari



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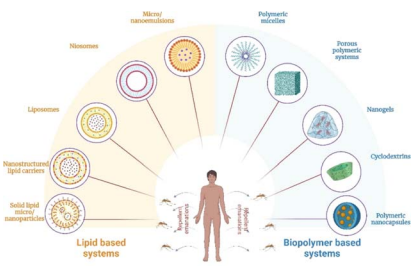
Biopolymeric and lipid-based nanotechnological strategies for the design and development of novel mosquito repellent systems: recent advances

Chinekwu Nwagwu,* Adaeze Onugwu, Adaeze Echezona, Samuel Uzondu, Chinazom Agbo, Frankline Kenechukwu, John Ogbonna, Lydia Ugorji, Lotanna Nwobi, Obichukwu Nwobi, Oluchi Mmuotoo, Ezinwanne Ezeibe, Brigitta Loretz, Clemence Tarirai, Kingsley Chimaeze Mbara, Nnabuife Agumah, Petra Nnamani, Kenneth Ofokansi, Claus-Micheal Lehr and Anthony Attama*



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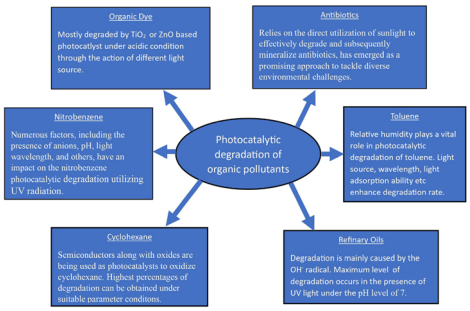
REVIEWS

4781

Metal oxide-based photocatalysts for the efficient degradation of organic pollutants for a sustainable environment: a review

Abdullah Al Miad, Shassatha Paul Saikat, Md. Kawcher Alam, Md. Sahadat Hossain, Newaz Mohammed Bahadur and Samina Ahmed*



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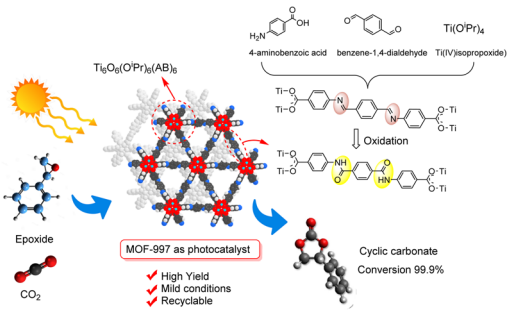
4804

Titanium metal–organic frameworks for photocatalytic CO_2 conversion through a cycloaddition reaction

James Kegere, Shaikha S. Alneyadi, Alejandro Perez Paz, Lamia A. Siddig, Afra Albloosh, Mohamed A. Alnaqbi, Ahmed Alzamly* and Yaser E. Greish*



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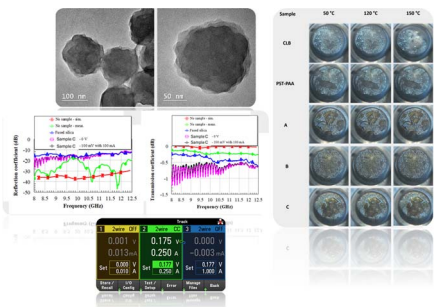
Different morphologies of super-balls obtained to form photonic crystals of cholesteryl benzoate liquid crystals

Edina Rusen,* Alexandra Mocanu, Adrian Dinescu, Adina Boldeiu, Cosmin Romanitan, Sergiu Iordanescu, Martino Aldrigo, Raluca Somoghi, Raul Mitran and Adi Ghebaur



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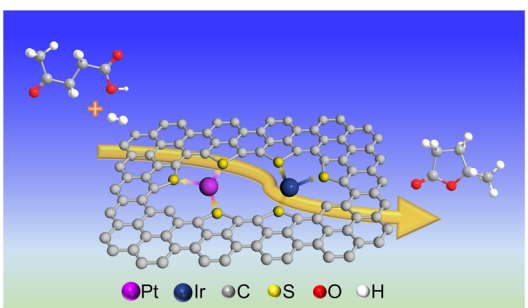
Atomically dispersed Pt_1Ir_1 pair for synergetic hydrogenation of levulinic acid to γ-valerolactone

Boyang Liu, Lin-Wei Chen and Lei Wang*



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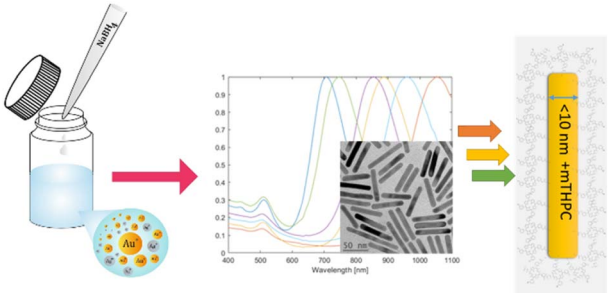

High yield seedless synthesis of mini gold nanorods: partial silver decoupling allows effective nanorod elongation with tunable surface plasmon resonance beyond 1000 nm and CTAB-free functional coating for *m*THPC conjugation

Mike Rozenberg, Matěj Bárta, Anya Muzikansky, Melina Zysler, Karolína Šišková, Yitzhak Mastai and David Zitoun*

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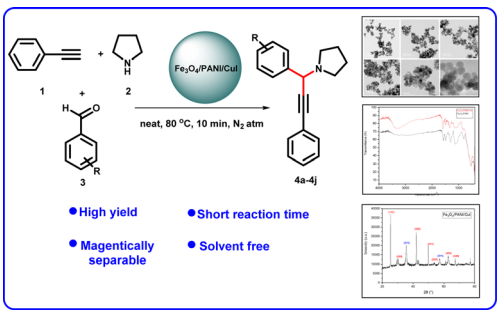

Fe_3O_4/PANI/CuI as a sustainable heterogeneous nanocatalyst for A^3 coupling

Nisha, Sahil Kohli, Snigdha Singh, Neera Sharma* and Ramesh Chandra*

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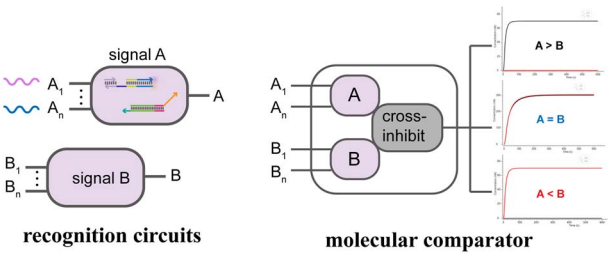

Scalable DNA recognition circuits based on DNA strand displacement

Fang Wang, Beiyu Shi, Ying Chen, Xiaolong Shi, Zheng Kou* and Xiaoli Qiang*

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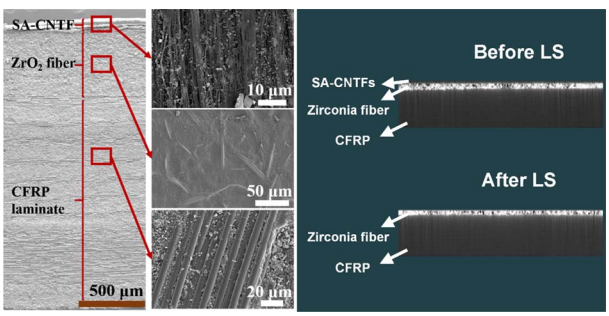

Advanced lightweight lightning strike protection composites based on super-aligned carbon nanotube films and thermal-resistant zirconia fibers

Mingquan Zhu, Peng Zhang, Feng Gao, Yunxiang Bai,* Hui Zhang,* Min Zu, Luqi Liu and Zhong Zhang*

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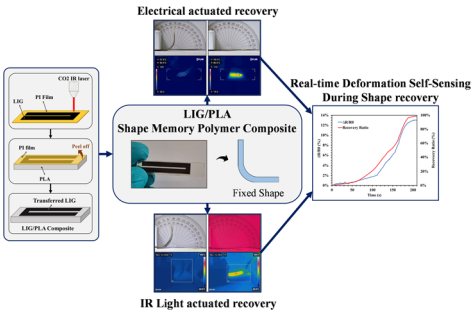
Development of a laser induced graphene (LIG) and polylactic acid (PLA) shape memory polymer composite with simultaneous multi-stimuli response and deformation self-sensing characteristics

Reza Gholami, Ibrahim Lawan, Panuwat Luengrojanakul, Sahar Ebrahimi, Cheol-Hee Ahn and Sarawut Rimdusit*



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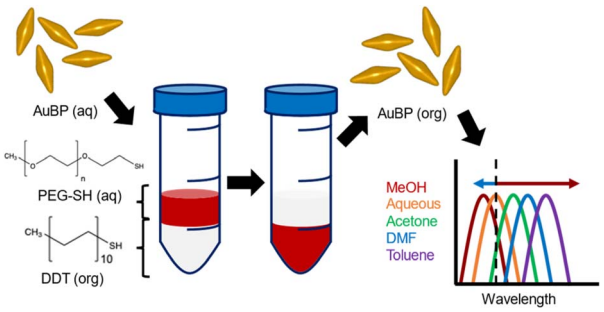
Scalable and adaptable two-ligand co-solvent transfer methodology for gold bipyramids to organic solvents

Caitlin D. Coplan, Nicolas E. Watkins, Xiao-Min Lin and Richard D. Schaller*



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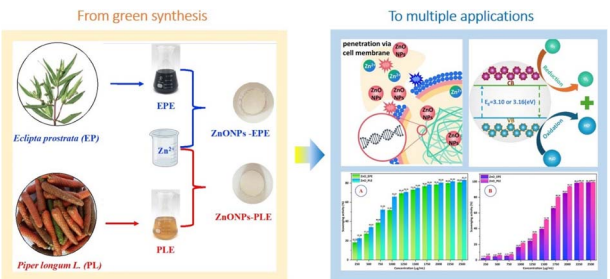
Biosynthesis of ZnO nanoparticles using aqueous extracts of *Eclipta prostrata* and *Piper longum*: characterization and assessment of their antioxidant, antibacterial, and photocatalytic properties

Xuan Thanh Tran, Thanh Thi Lan Bien, Thuan Van Tran* and Thuy Thi Thanh Nguyen*



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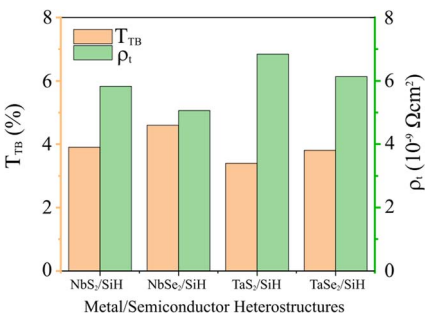
Achieving ultra-low contact barriers in MX_2/SiH (M = Nb, Ta; X = S, Se) metal–semiconductor heterostructures: first-principles prediction

Son T. Nguyen, Chuong V. Nguyen,* Huynh V. Phuc, Nguyen N. Hieu and Cuong Q. Nguyen*



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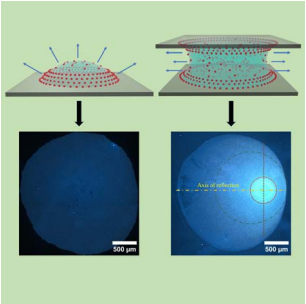

Soft colloidal monolayers with reflection symmetry through confined drying

Sanjib Majumder, Madivala G. Basavaraj* and Dillip K. Satapathy*

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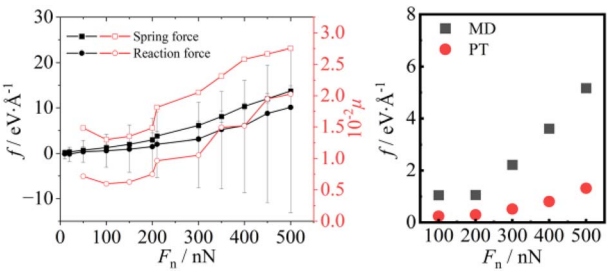

Substrate deformability and applied normal force are coupled to change nanoscale friction

Zhaoyang Yu, Mengyuan Huang* and Xianren Zhang*

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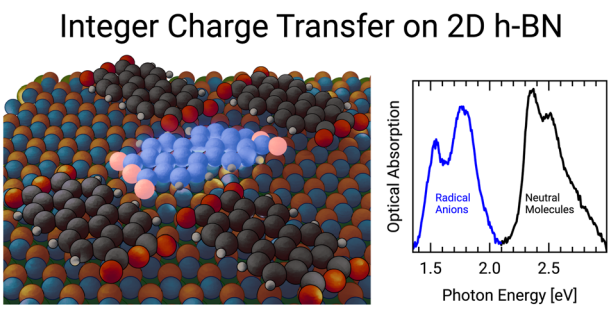

Triggered integer charge transfer: energy-level alignment at an organic-2D material interface

Maximilian Schaal, Anu Baby, Marco Gruenewald, Felix Otto, Roman Forker, Guido Fratesi and Torsten Fritz*

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Experimental investigation of a biomass-derived nanofluid with enhanced thermal conductivity as a green, sustainable heat-transfer medium and qualitative comparison *via* mathematical modelling

Kiran Bijapur, Samir Mandal, P. G. Siddheshwar, Suryasarathi Bose and Gurumurthy Hegde*

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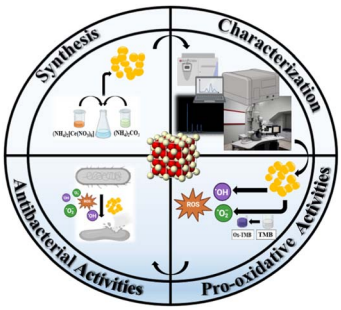
Effect of precipitant on pro-oxidative and antibacterial properties of CeO_2 nanoparticles – an experimental study

Shilpa Maddheshiya, Priyanka Rajwani and Seema Nara*



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