Nanoscale Advances

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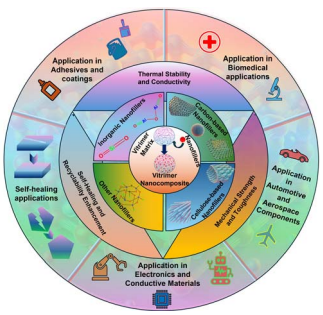
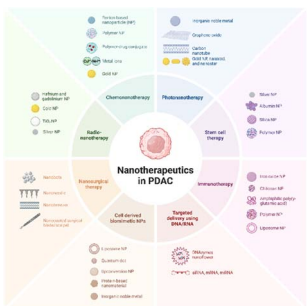
Cover
See Shawn Wettig *et al.*, pp. 5964–5977. Image reproduced by permission of Mohamed Aborig and Shawn Wettig from *Nanoscale Adv.*, 2025, **7**, 5964.

REVIEWS





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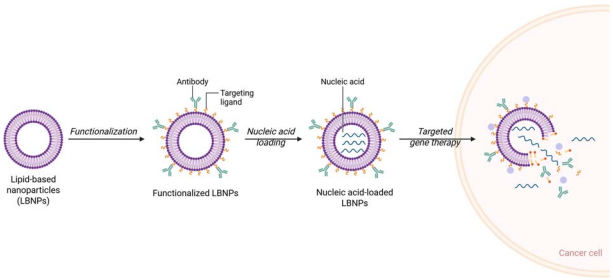
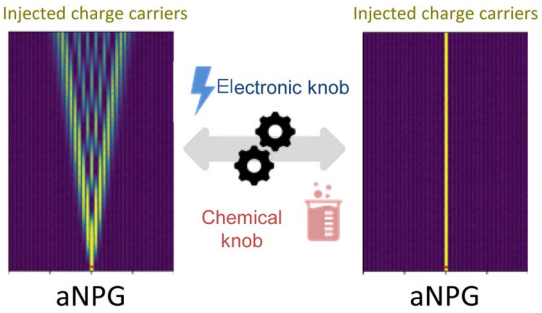
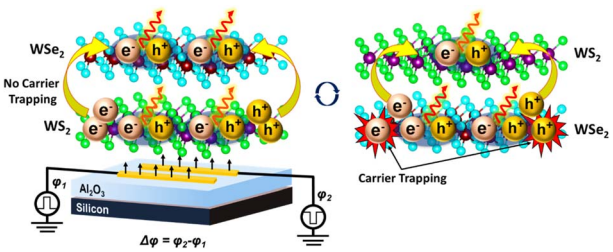
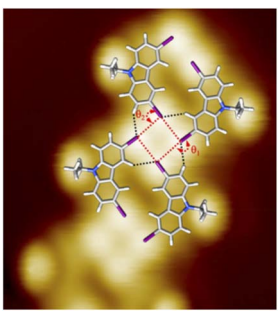


MINIREVIEW



COMMUNICATIONS





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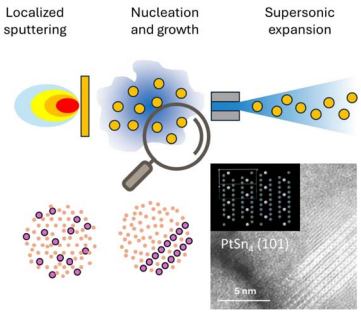

Supersonic cluster beam deposition of bimetallic Sn–Pt nanogranular films: nanostructure control, segregation, and 2D intermetallic phases

José Enrique Martinez Medina, Marc Heggen, Adrian-Marie Philippe and Emanuele Barborini*

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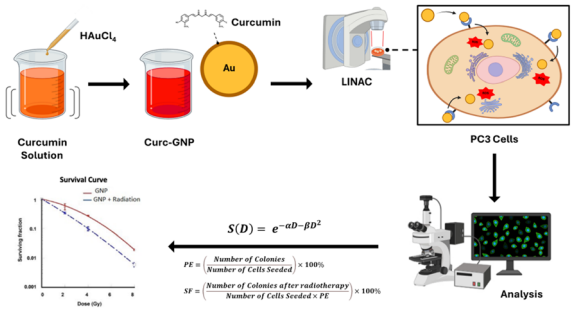
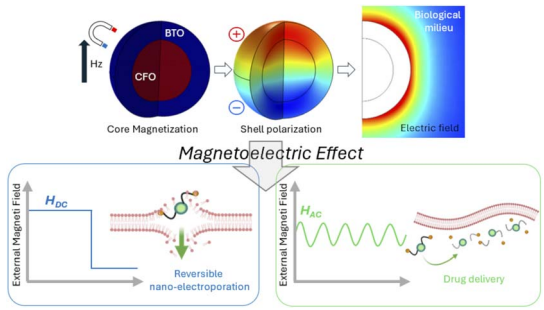


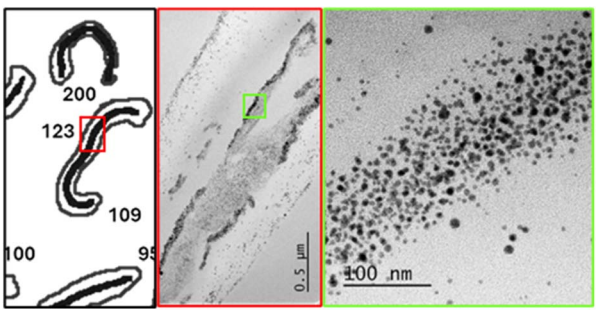
Engineered dual-functional gold nanoparticles enhance radiosensitization in prostate cancer cells: synergistic action of curcumin and gold

Mohamed Aborig, Moad Alsefaou, Ernest Osei and Shawn Wettig*



Exploring magnetoelectric nanoparticles for advanced nano-electroporation and drug delivery in interventional cardiology

A. Tommasini, G. Suarato,* S. Fiocchi, E. Chiaramello, A. Marrella, M. Lenzuni, M. Parazzini, B. Cortese and P. Ravazzani



Immature cotton fibers upcycled into advanced natural nanoparticle synthesizers

Sunghyun Nam,* Shaida S. Rumi, Noureddine Abidi, Hee Jin Kim, Zhongqi He, Doug J. Hinchliffe, Md Nayeem Hasan Kashem, Matthew B. Hillyer and Holly King

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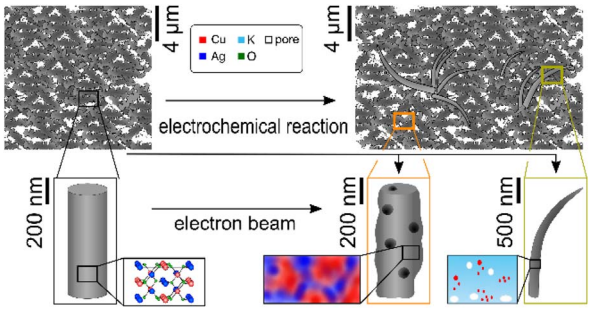

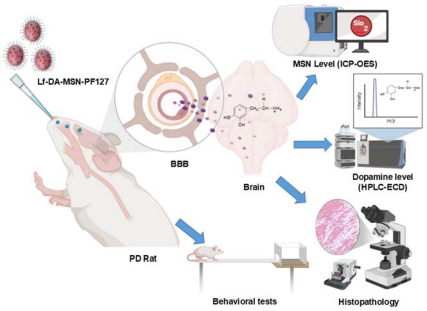

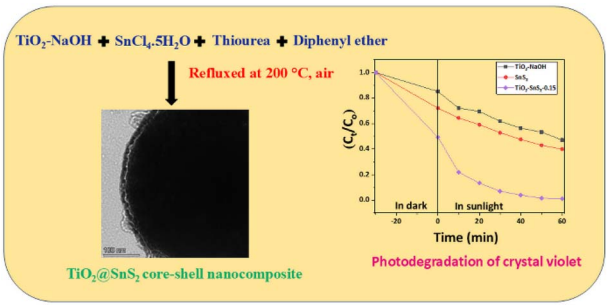

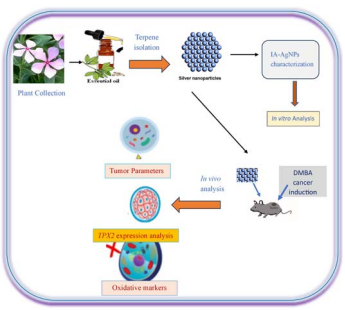

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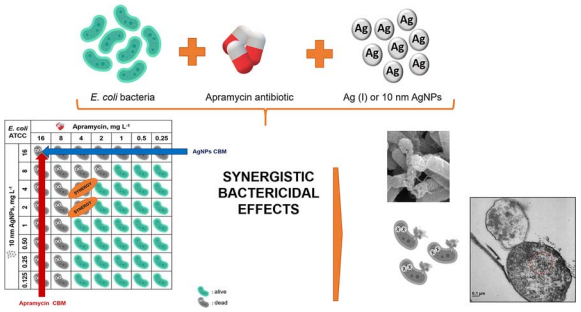

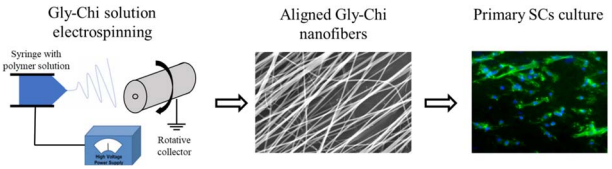

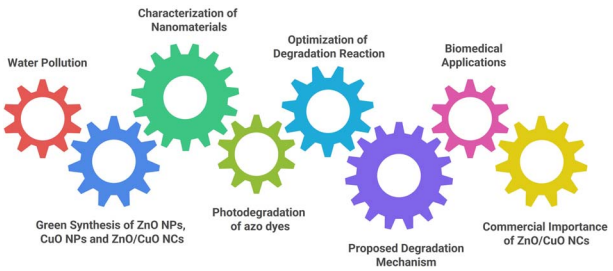

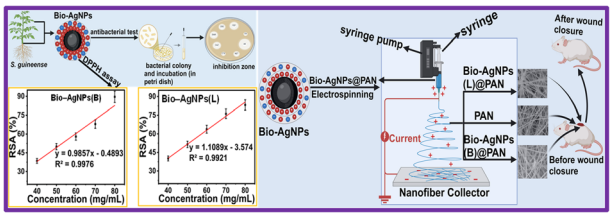

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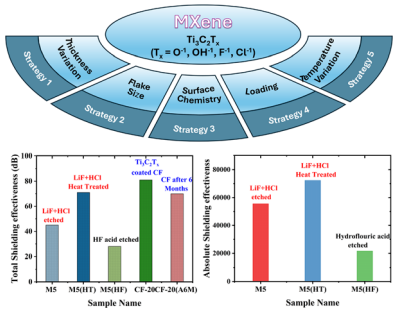

Unlocking exceptional EMI shielding in $Ti_3C_2T_x$ MXenes through controlled microstructure and surface chemistry

Shahzad Hussain,* Resham Siddique, Muhammad Nadeem, Eman Zafar, Sadia Manzoor and Jawwad A. Darr

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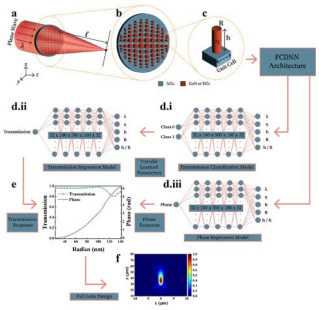

Beyond application-specific design: a generalized deep learning framework for optical property prediction in TiO_2/GaN nanophotonic metasurfaces

Adrita Anwar, Shahamat Mustavi Tasin, Mahabub Alam Bhuiyan, Nymul Yeachin, Sharnali Islam and Khaleda Ali*

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Fibrin/MoS_2-nanosheet conductive hydrogels with programmed time scales and pathways for bioresorption

Vidushi Shukla, Willis T. Bilderback, Deisy Fernandes, Mark Daley, Rojry Basnet, Pushkaraj Joshi, Zidan Yang, Anubhav Tripathi, Jacob K. Rosenstein, Kareen Coulombe and Robert H. Hurt*

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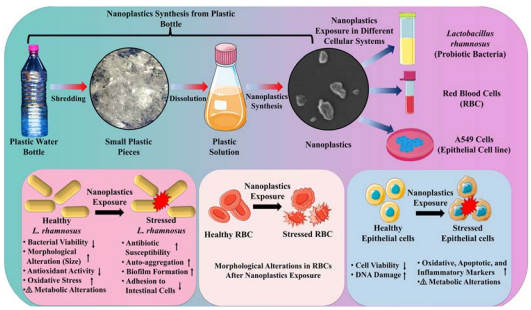

Nanoplastics from single-use polyethylene terephthalate bottles impair the functionality of human gut-dwelling *Lactobacillus rhamnosus* and induce toxicity in human cells

Prashant Sharma, Sakshi Dagariya, Gurvinder Singh, Dinesh Kumar and Manish Singh*

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