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ISSN 2633-5409 CODEN MAADC9 7(6) 3021-3450 (2026)



### Cover

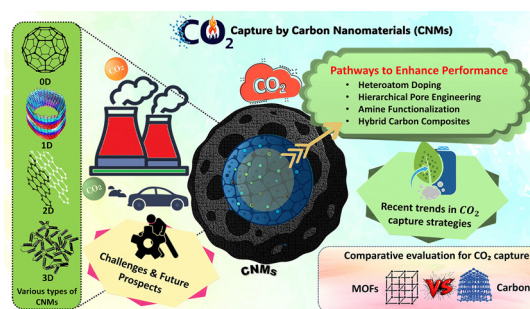
See Mihai Irimia-Vladu *et al.*, pp. 3147–3165.  
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## REVIEWS

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### Tailoring carbon nanomaterial architectures for CO<sub>2</sub> capture: structure–property relationships, surface engineering, and future perspectives

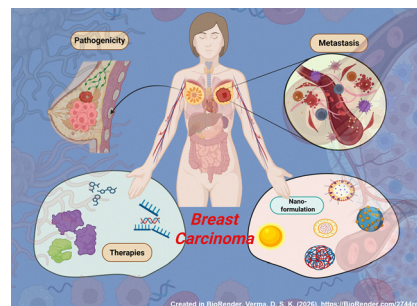
Jagdeep Singh,\* Ashish Gupta, Zhiqi Zhu, Santosh K. Tiwari and A. S. Dhaliwal



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### Translational paradigm of advanced nanoscale strategies for triple negative breast cancer (TNBC): mechanistic insights, metastatic pathways, and emerging theragnosis

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## REVIEWS

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### Multifaceted advances in TiO<sub>2</sub>-based photocatalysts for PFAS degradation: a critical review of mechanisms, modifications, and challenges

Avtar Singh\* and Thiagarajan Soundappan

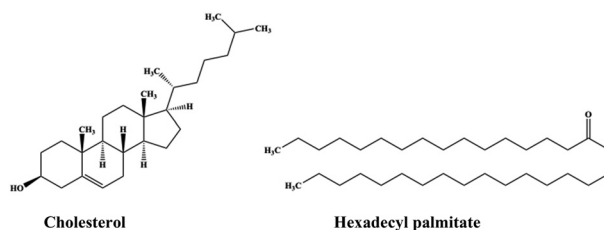


## PAPERS

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### Natural, small molecule aliphatics (cholesterol and hexadecyl palmitate) as dielectrics for low-voltage organic field effect transistors

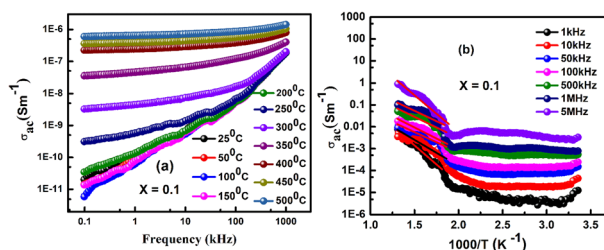
Cristian Vlad Irimia, Corina Schimanofsky, Boyuan Ban, Cigdem Yumusak, Martin Ciganek, Petr Sedlacek, Jozef Krajcovic, Rosarita D'Orsi, Alessandra Operamolla, Andreas Petritz, Katharina Matura, Barbara Stadlober, Yasin Kanbur, Yolanda Salinas, Oliver Brüggemann, Christian Teichert, Niyazi Serdar Sariciftci and Mihai Irimia-Vladu\*



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### Studies on the structural, microstructure, dielectric, electrical and optical properties of Gd-doped BiFeO<sub>3</sub> ceramic and its NTC thermistor application

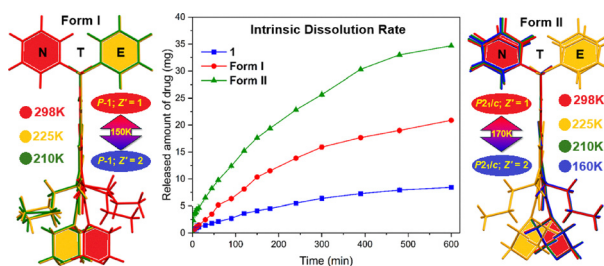
Swati Panda and S. K. Parida\*



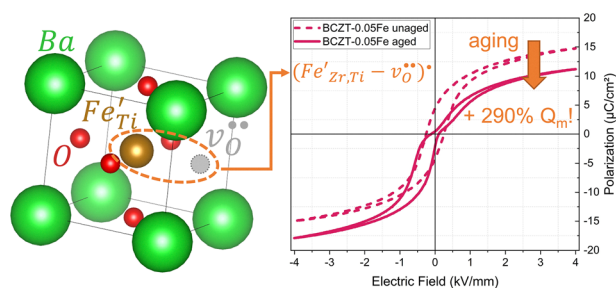
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### Quasi-isostructural order–disorder phase transitions and anisotropic thermal expansions in polymorphic crystals of a biologically active molecule with distinct solubility and dissolution rate

Aditya Verma, Sourabh, Anil Kumar and Parthapratim Munshi\*



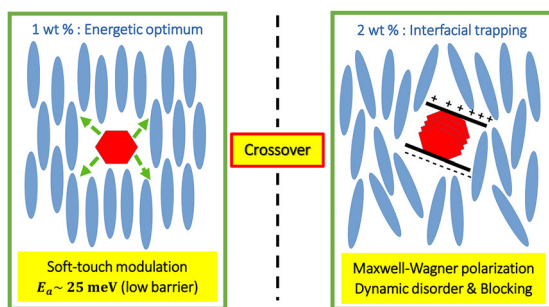
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### Acceptor-doping of lead-free $(\text{Ba}_{0.82}\text{Ca}_{0.18})(\text{Zr}_{0.08}\text{Ti}_{0.92})\text{O}_3$ with Fe induces piezoelectric hardening

Anna M. Paulik, Anamaria Mihaljević, Kriti Batra, Arpad M. Rostas, Emre Erdem and Jurij Koruza\*

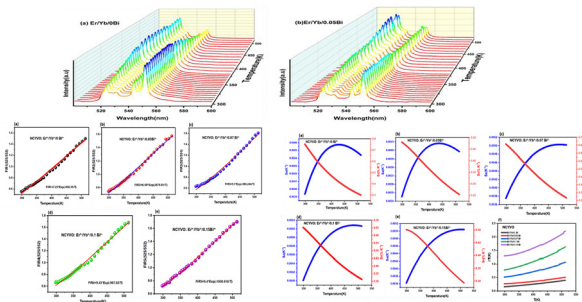
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### Bulk charge-transfer coupling and tunable dielectric relaxation in benzoquinone-doped nematic liquid crystals

Yosr Turki,\* Bochra Bejaoui, Ali Benali, Mohamed Mastouri, Nouredine Raouafi and Youssef Arfaoui

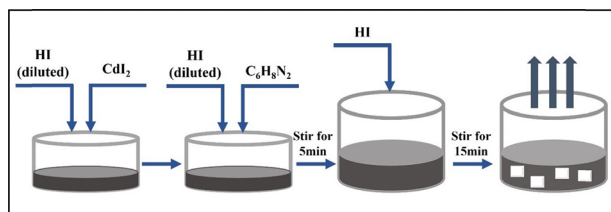
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### $\text{Bi}^{3+}$ -sensitized up-conversion luminescence and non-contact optical thermometry in $\text{NaCaYV}_2\text{O}_8:\text{Er}^{3+}/\text{Yb}^{3+}$ phosphors

Fadwa Ayachi, Kamel Saidi, I. Mediavilla-Martinez, Mohamed Dammak\* and J. Jimenez

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### Experimental and computational insights of the new hybrid organic–inorganic compound $(\text{C}_6\text{H}_9\text{N}_2)_2\text{CdI}_4$ for advanced optoelectronic applications and biological activities

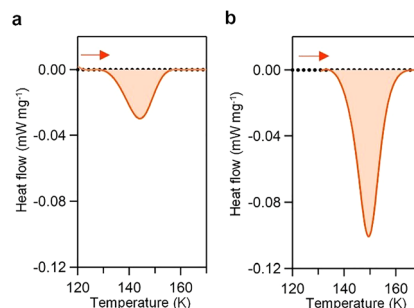
Arafet Ghoudi, Walid Taouali, José A. Paixão, Noweir Ahmad Alghamdi, Rui Fausto and Abderrazek Oueslati\*



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### Suppression of the metal-to-semiconductor transition in nanocrystalline $\text{Ti}_4\text{O}_7$ via crystallite size control

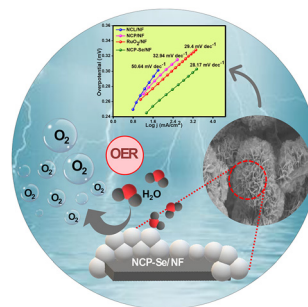
Tomoko Kubota, Riku Seiki, Takahiro Kondo, Verdad C. Agulto, Makoto Nakajima, Shin-ichi Ohkoshi and Hiroko Tokoro\*



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### NiCo LDH-derived defect-engineered Se-doped NiCoP mesoporous nanoflowers for enhanced oxygen evolution reaction

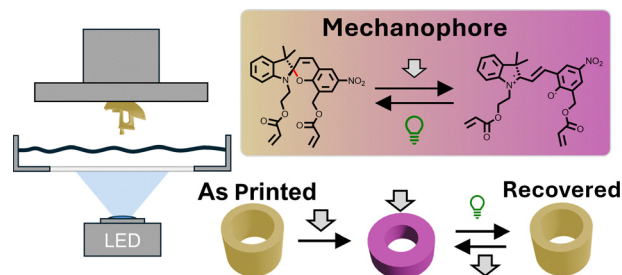
Dipti Prava Sahoo, Upali Aparajita Mohanty, Kundan Kumar Das, Ritik Mohanty and Kulamani Parida\*



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### 3D DLP printed mechanochromic materials for visual signaling

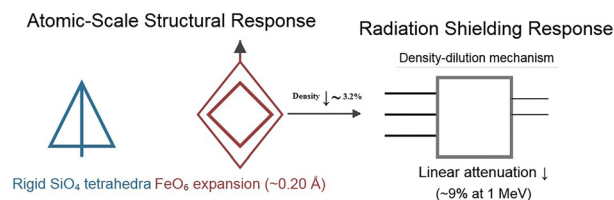
Finn Kröger, Christoph A. Spiegel and Eva Blasco\*



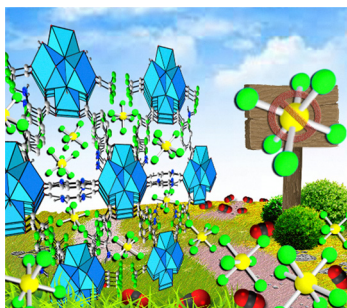
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### Thermal and gamma-ray-induced density dilution in orthoferrosilite ( $\text{FeSiO}_3$ ): implications for photon shielding stability

Z. Y. Khattari



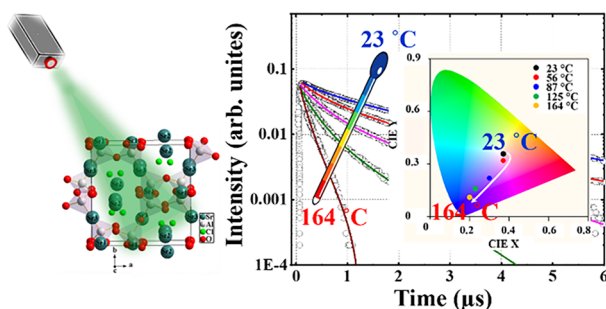
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### Carbon dioxide–sulphur hexafluoride adsorption and separation with zirconium metal–organic frameworks bearing basic and fluorinated linkers

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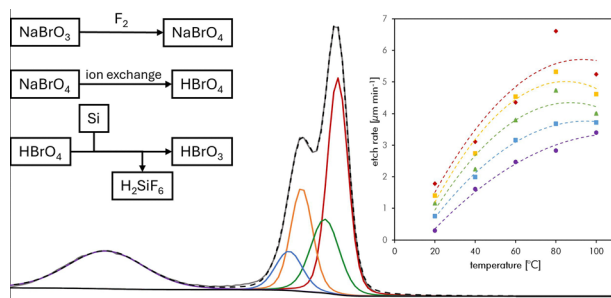
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### Comparison of properties and performance of $\text{Eu}^{2+}$ -doped $\text{Ca}_6\text{BaP}_4\text{O}_{17}$ , $\text{Ca}_4\text{Sr}(\text{PO}_4)_3\text{Cl}$ , $\text{NaSrPO}_4$ and $\text{Sr}_3\text{Al}_2\text{O}_5\text{Cl}_2$ thermometric phosphors

Simon N. Ogugua,\* Robin E. Kroon and Hendrik C. Swart\*

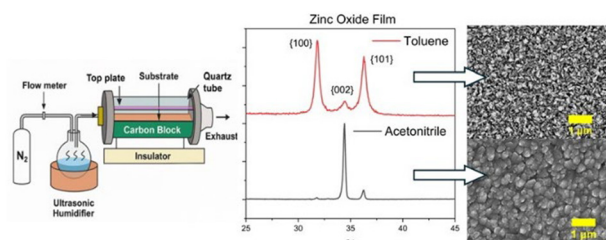
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### Aqueous $\text{HF}$ – $\text{HBrO}_4$ solutions for wet-chemical etching of (100) silicon wafer surfaces

Nils Schubert, Niklas Zomack, André Stapf, Patrick Fuzon, Ann-Lucia Neumann, Dominic Walter, Andreas Lißner, Florian Kraus and Edwin Kroke\*

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### The effect of solvent on the functional properties of zinc oxide films *via* AACVD

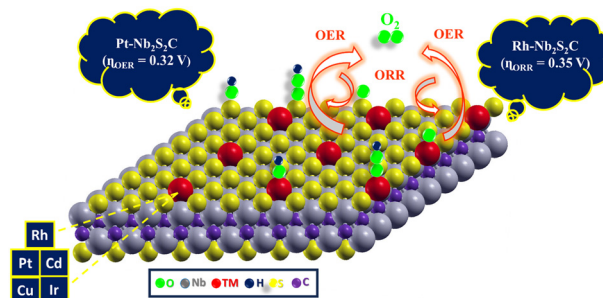
Oliver R. Marsh, Iqra Ramzan, Claire J. Carmalt and Ivan P. Parkin\*



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### Transition metal-embedded Nb<sub>2</sub>S<sub>2</sub>C as a high-performance bifunctional electrocatalyst for the OER and ORR: insights from DFT simulations

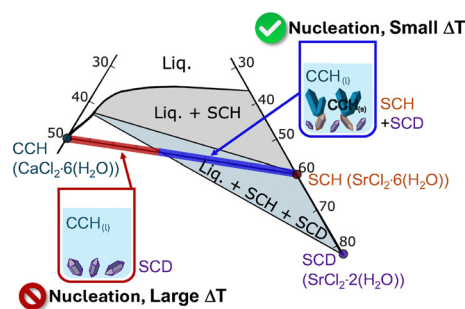
K. Simmy Joseph, Brahmananda Chakraborty\* and Shweta Dabhi\*



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### Reaction and recovery of nucleation particle strontium chloride hexahydrate in calcium chloride hexahydrate

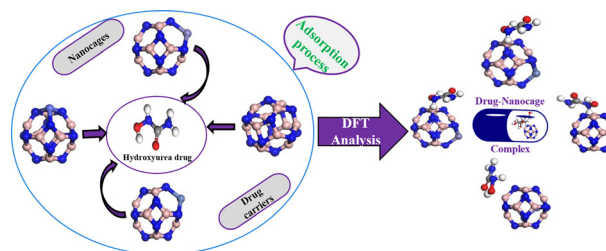
Denali Ibbotson and Patrick J. Shamberger\*



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### Investigation of the adsorption nature of the hydroxyurea anti-cancer drug with pristine and transition metal (Co,Fe,Ni)-doped boron nitride fullerenes as a potential drug-delivery vehicle: a DFT study and COSMO analysis

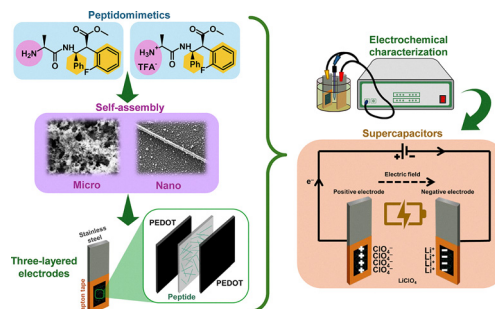
Samiron Kumar Saha,\* Maliha Nishat, Md. Rayhan Mostofa, Md. Abul Hasnat, Md. Atikur Rahman and Md. Hafijur Rahman



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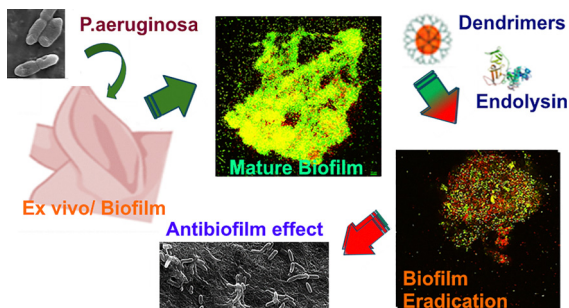
### Self-assembled α/β-dipeptides as dielectrics to improve the behavior of multilayered conducting polymer pseudocapacitors

Dulce A. Quintana-Romero, Adrián Fontana-Escartín,\* María Luisa Gelmi,\* Merve Gul, María M. Pérez-Madrigal, Raffaella Bucci\* and Carlos Alemán\*



## PAPERS

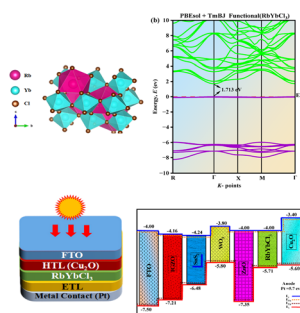
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### Control of mucoid *Pseudomonas aeruginosa* biofilms in a highly porous skin model (*ex vivo*/*in vitro* model) with carbosilane dendrimer-endolysin complexes

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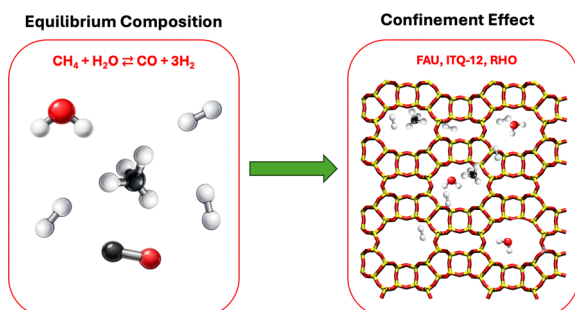
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### Harnessing the untapped potential of a lanthanide-based perovskite ( $\text{RbYbCl}_3$ ) absorber: from material properties to device implementation

Md. Sajjadur Rahman, Akram Hossan Mahedi, Mohammad Yasin Hayat Khan, Md. Tarekuzzaman, Md. Hasan Mia, Sohail Ahmad, Md. Rasheduzzaman and Md. Zahid Hasan\*

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### Confinement-driven equilibrium shifts in steam methane reforming: a monte carlo study in zeolites

Botagoz Zhakisheva, Juan José Gutiérrez-Sevillano,\* Patrick J. Merkling and Sofia Calero\*

## CORRECTION

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### Correction: Influence of alkali metal ions on the defect induced photoluminescence properties of double tungstate compounds $\text{ACe}(\text{WO}_4)_2$ (A = Li, Na, K): experimental and *ab initio* theoretical study

Nibedita Haldar\* and Tanmoy Mondal

