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Abstracts archieve

Food Chemistry 438 (2024) 137964

Contents lists available at ScienceDirect

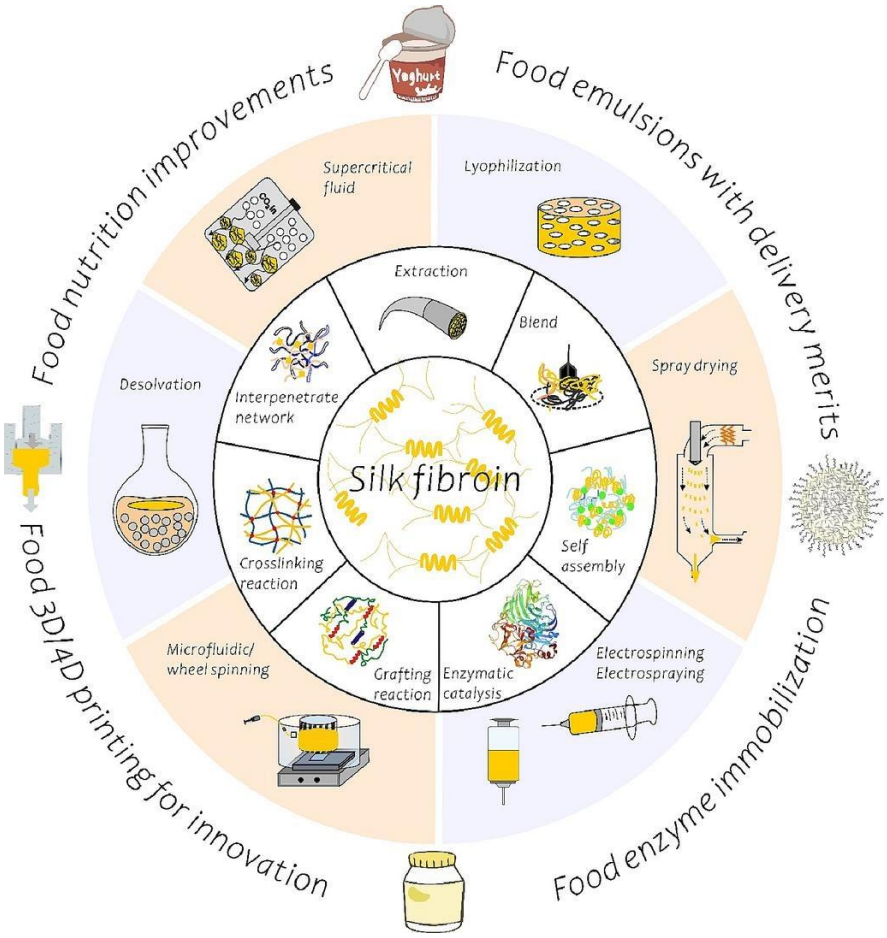
Food Chemistry

journal homepage: www.elsevier.com/locate/foodchem

Review

Recent advances of silk fibroin materials: From molecular modification and matrix enhancement to possible encapsulation-related functional food applications

Liang Xu [a,b,c,d,e,1], Chaoyang Wu [a,1], Pei Lay Yap [f,g], Dusan Losic [f,g], Juncheng Zhu [a], Yuxin Yang [a], Shihao Qiao [a], Liang Ma [a], Yuhao Zhang [a,b,c,d,e,*], Hongxia Wang [a,b,c,d,e,*]



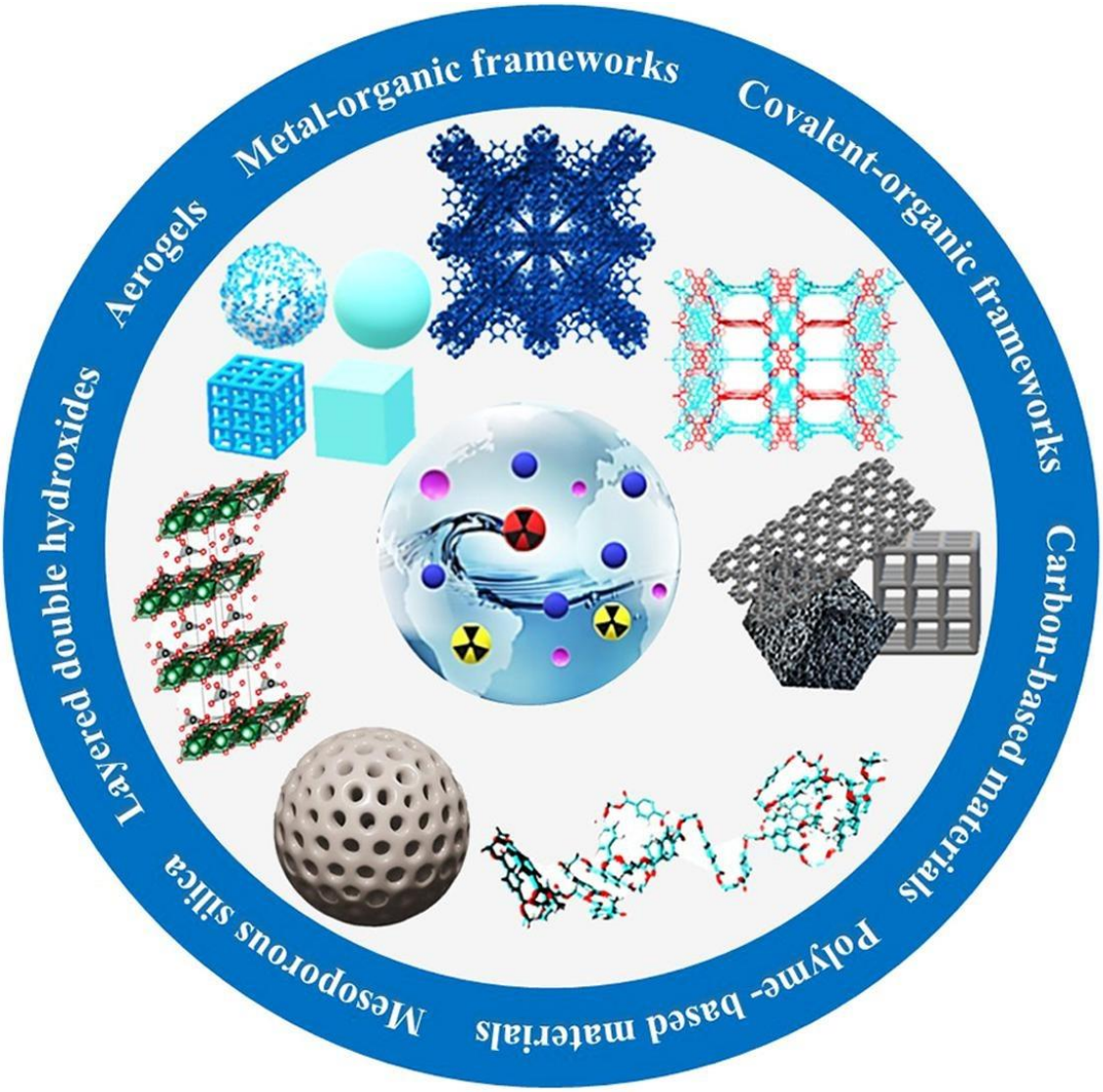
Contents lists available at ScienceDirect

Progress in Materials Science

journal homepage: www.elsevier.com/locate/pmatsci

Unveiling cutting-edge advances in high surface area porous materials for the efficient removal of toxic metal ions from water

Padmaja V. Mane [a,1], Richelle M. Rego [a,2], Pei Lay Yap [b,3], Dusan Losic [b,5,*], Mahaveer D. Kurkuri [a,4,*]



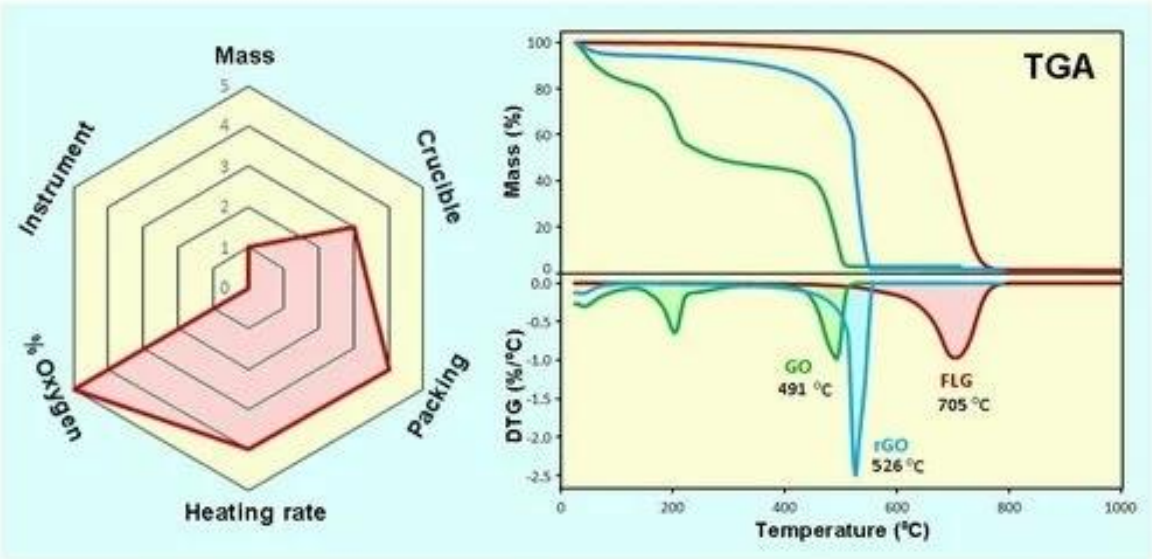
Journal of Carbon Research

MDPI

Article

Refining and Validating Thermogravimetric Analysis (TGA) for Robust Characterization and Quality Assurance of Graphene-Related Two-Dimensional Materials (GR2Ms)

Dusan Losic [1,*], Farzaneh Farivar [2] and Pei Lay Yap [1]



ChemSusChem

Research Article
doi.org/10.1002/cssc.202301242

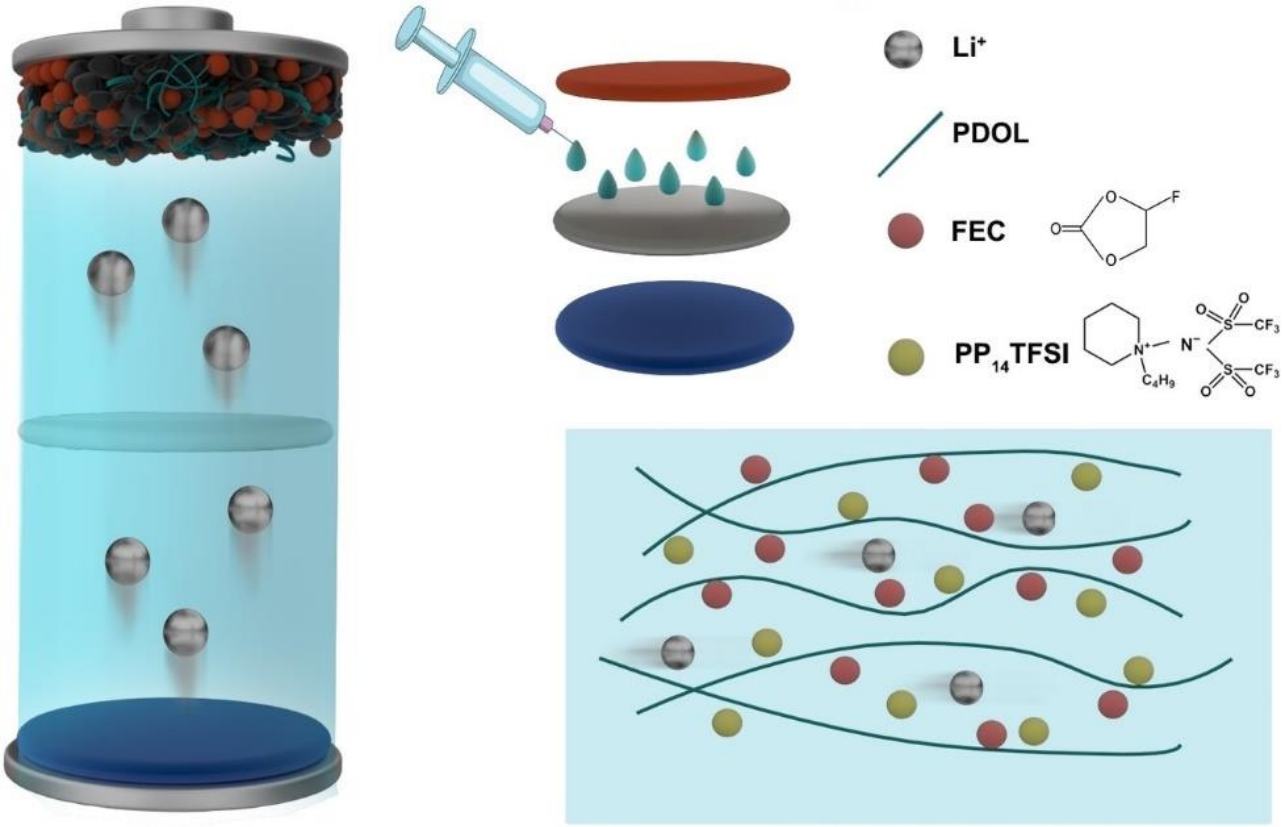
Chemistry Europe
European Chemical Societies Publishing

www.chemsuschem.org

Special Collection

Ionic Liquid Boosting the Electrochemical Stability of a Poly(1,3-dioxolane) Gel Electrolyte for High-voltage Solid-State Lithium Batteries

Tianhua Chen,[a, b] Jiaxin Liu,[b, c] Dusan Losic,*[a] Jian Wang,*[d] and Haitao Zhang*[b]



Chemical Engineering Journal 479 (2024) 147751

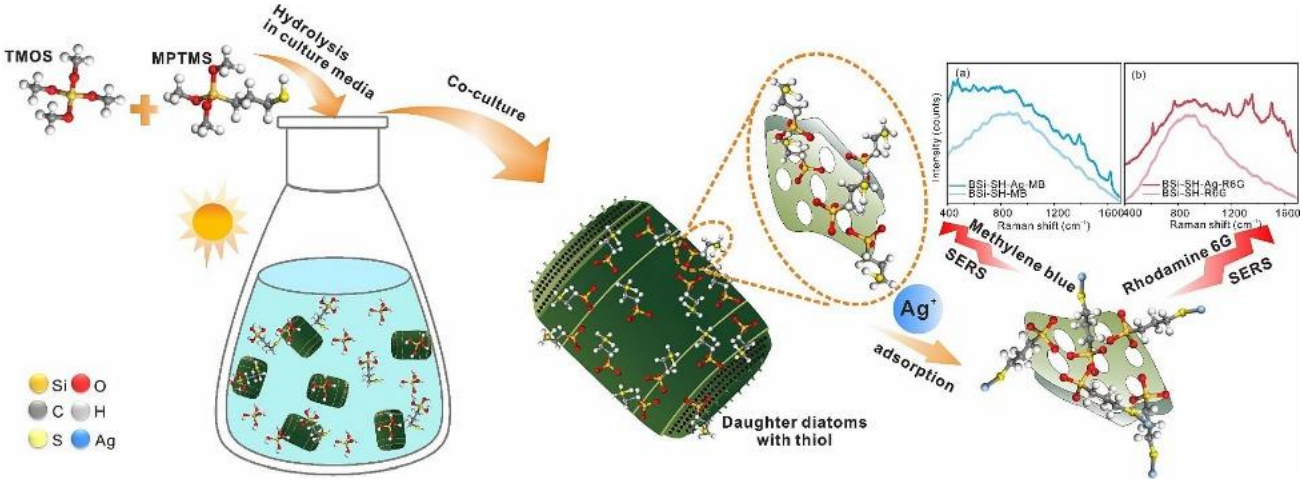
Contents lists available at ScienceDirect

Chemical Engineering Journal

journal homepage: www.elsevier.com/locate/cej

Efficient Ag^{+} adsorption of *in-vivo* thiol-functionalized diatoms and its application for sensitive surface-enhanced Raman scattering

Mengyuan Li [a,b], Dong Liu [a,c,*], Dusan Losic [d], Shun Wang [e,*], Qian Tian [f], Rongda Yu [a,b], Haoyu Li [a,b], Yuguo Shen [a,b], Yin Zhong [a], Peng Yuan [a,g]



Nanoscale

ROYAL SOCIETY OF CHEMISTRY

PAPER

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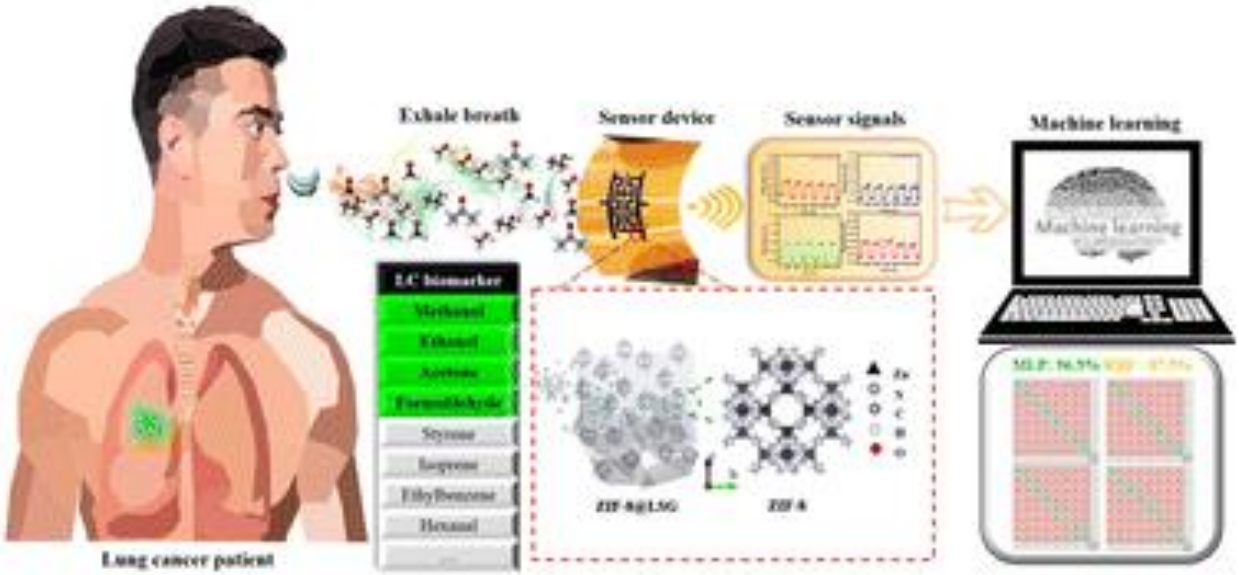
Cite this: *Nanoscale*, 2024, **16**, 9084

Graphene and metal–organic framework hybrids for high-performance sensors for lung cancer biomarker detection supported by machine learning augmentation†

Anh Tuan Trong Tran,[a] Kamrul Hassan,[a] Tran Thanh Tung,[a] Ashis Tripathy,[b] Ashok Mondal[b] and Dusan Losic *[a]



Journal of
Materials Chemistry B

ROYAL SOCIETY OF CHEMISTRY

PAPER

View Article Online
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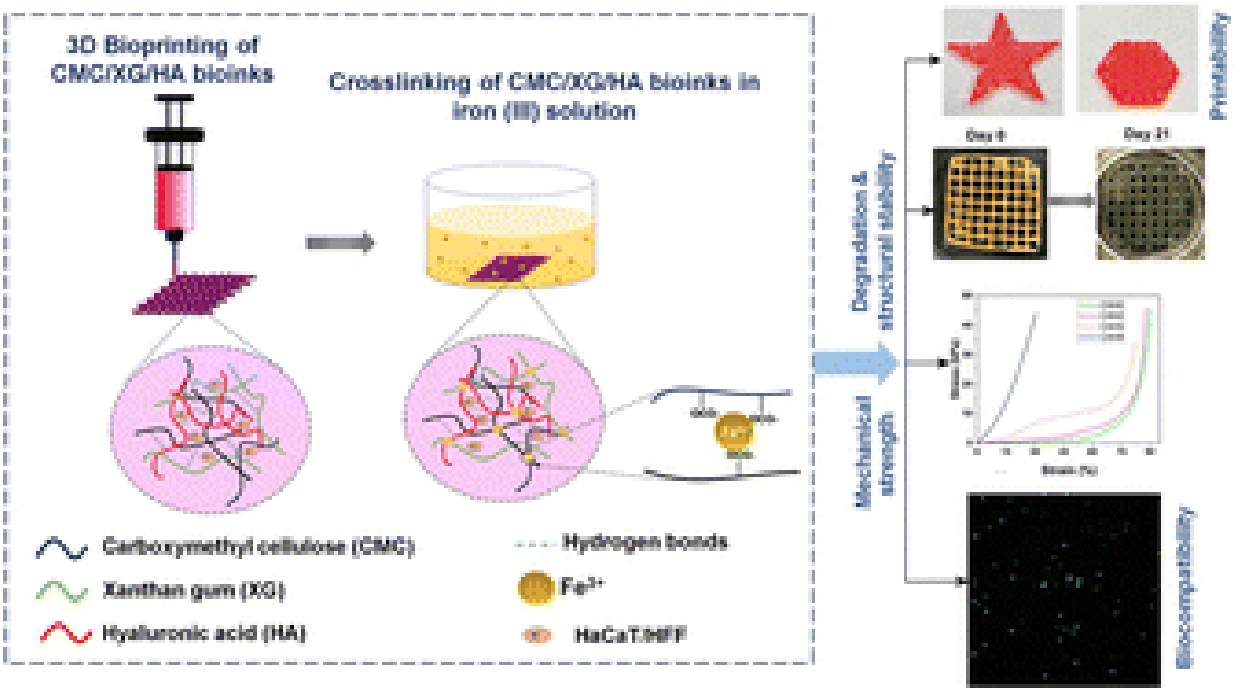
Cite this: *J. Mater. Chem. B*, 2024, **12**, 6627

Development of novel iron(III) crosslinked bioinks comprising carboxymethyl cellulose, xanthan gum, and hyaluronic acid for soft tissue engineering applications†

Hien-Phuong Le,[a] Kamrul Hassan,[a] Mahnaz Ramezanpour,[b] Jonathan A. Campbell,[c] Tran Thanh Tung,[a] Sarah Vreugde[b] and Dusan Losic*[a]



Separation and Purification Technology 348 (2024) 127633

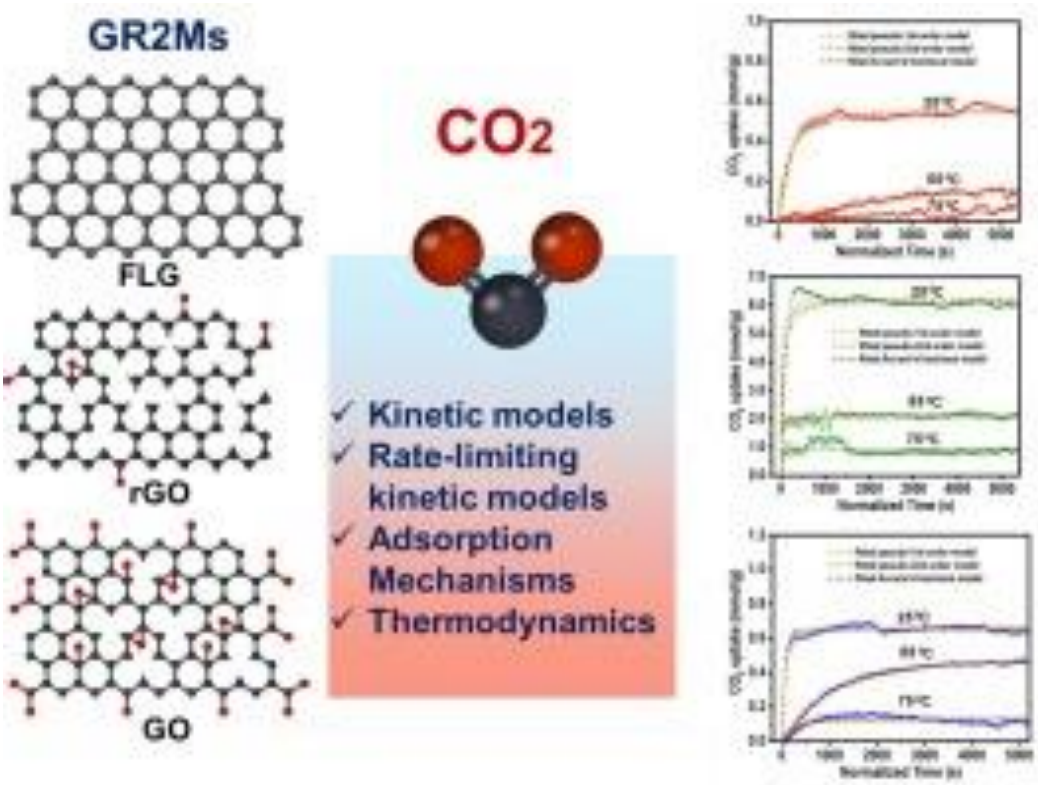
Contents lists available at ScienceDirect

Separation and Purification Technology

journal homepage: www.elsevier.com/locate/seppur

Exploring kinetic and thermodynamic insights of graphene related two dimensional materials for carbon dioxide adsorption

Pei Lay Yap [a,b,*], Huynh Hong Nguyen [c,d], Jun Ma [c,d], Manju Gunawardana [e], Dusan Losic [a,b,*]



Radiation Physics and Chemistry 205 (2023) 110726

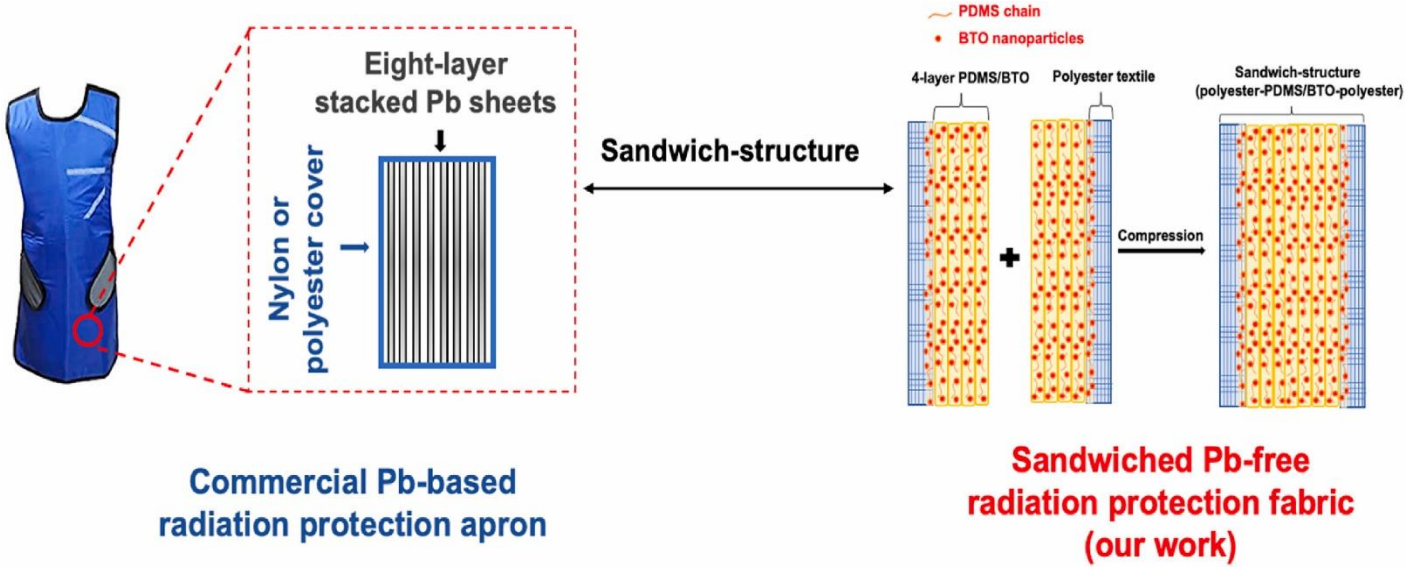
Contents lists available at ScienceDirect

Radiation Physics and Chemistry

journal homepage: www.elsevier.com/locate/radphyschem

Lightweight polyester fabric with elastomeric bismuth titanate composite for high-performing lead-free X-ray shielding

Le Yu [a,b], Pei Lay Yap [a,b], Alexandre M.C. Santos [c,d,e], Diana N.H. Tran [a,b], Dusan Losic [a,b,*]

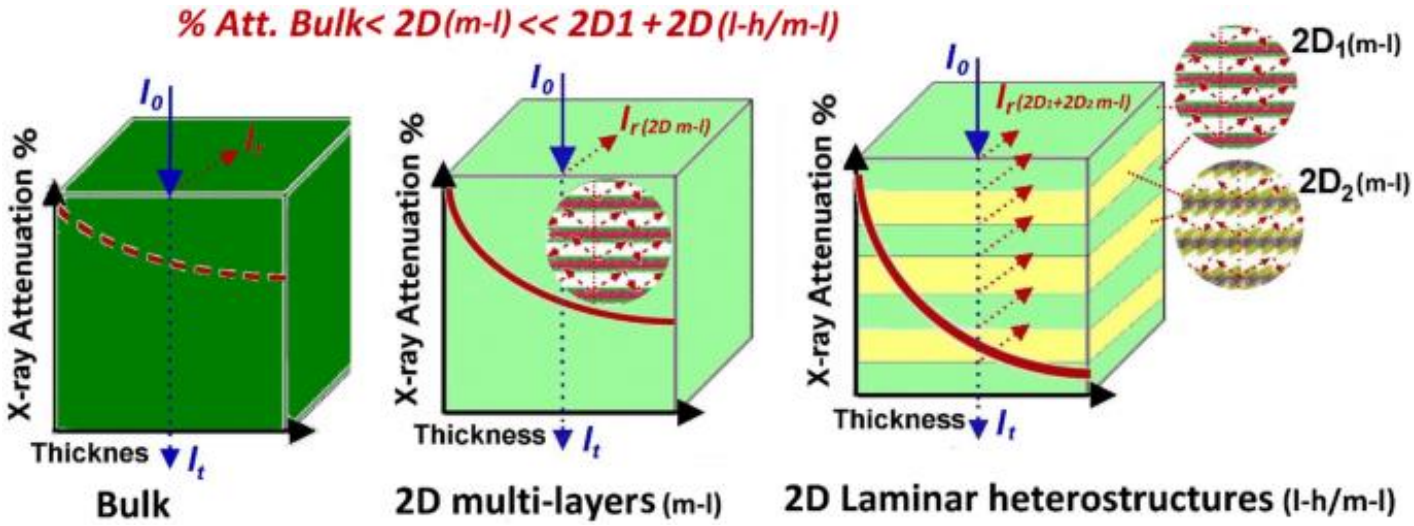


Graphene and 2D Materials (2023) 8:151–159
https://doi.org/10.1007/s41127-023-00064-4

ORIGINAL ARTICLE

Revealing enhanced X-Ray radiation shielding of 2D layered materials and their laminar heterostructures

Le Yu[1] · Md J. Nine[1] · Tran T. Tung[1] · Ana L. C. Pereira[1,2] · Kamrul Hassan[1] · Diana Tran[1] · Alexandre Santos[3,4,5] · Dusan Losic[1]



Colloids and Surfaces B: Biointerfaces 221 (2023) 112940

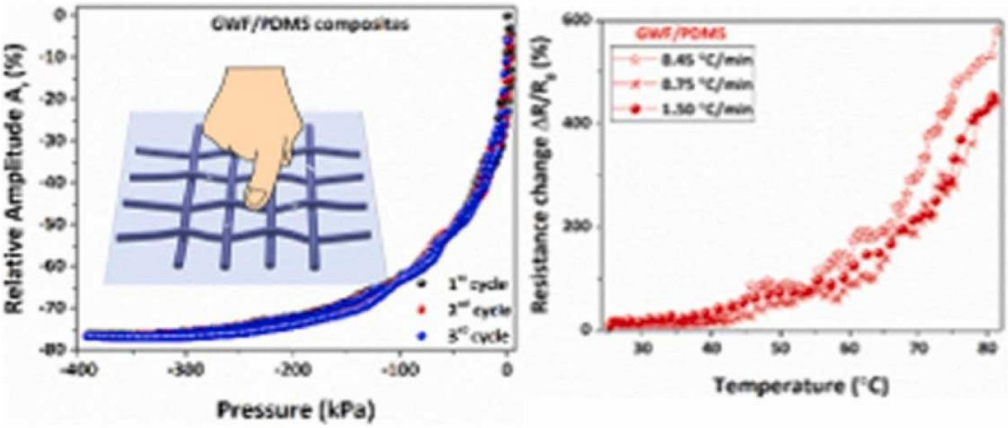
Contents lists available at ScienceDirect

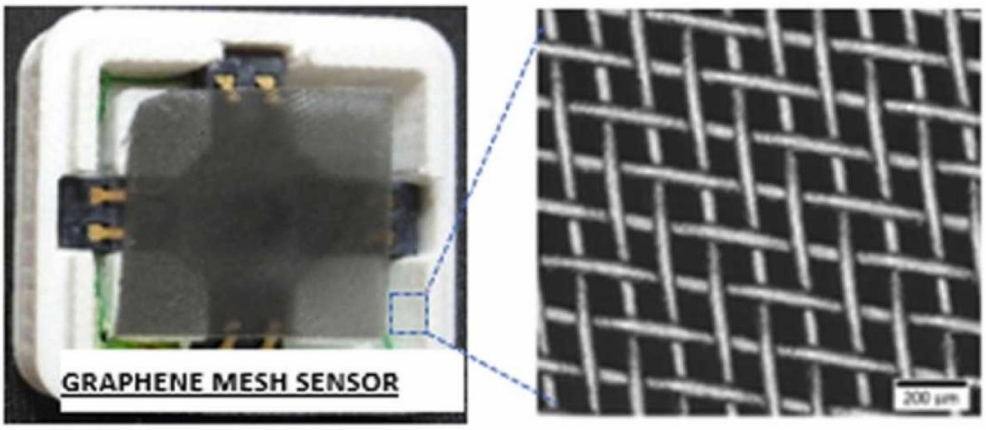
Colloids and Surfaces B: Biointerfaces

journal homepage: www.elsevier.com/locate/colsurfb

Graphene woven fabric-polydimethylsiloxane piezoresistive films for smart multi-stimuli responses

Tran T. Tung [a,*,1], Manh T. Tran [b,1], Ana L.C. Pereira [a,c], Cristiano M.B. Cordeiro [d,e], Duc D. Nguyen [f], Nyan-Hwa Tai [f,*], Van V. Tran [g], Chia-Chen Hsu [g], Prerna Joshi [h], Masamichi Yoshimura [h], Jean F. Feller [i,*], Mickael Castro [i], Kamul Hassan [a], Md J. Nine [a], Nathan Stanley [a], Dusan Losic [a,*]





Chemical Engineering Journal 452 (2023) 139164

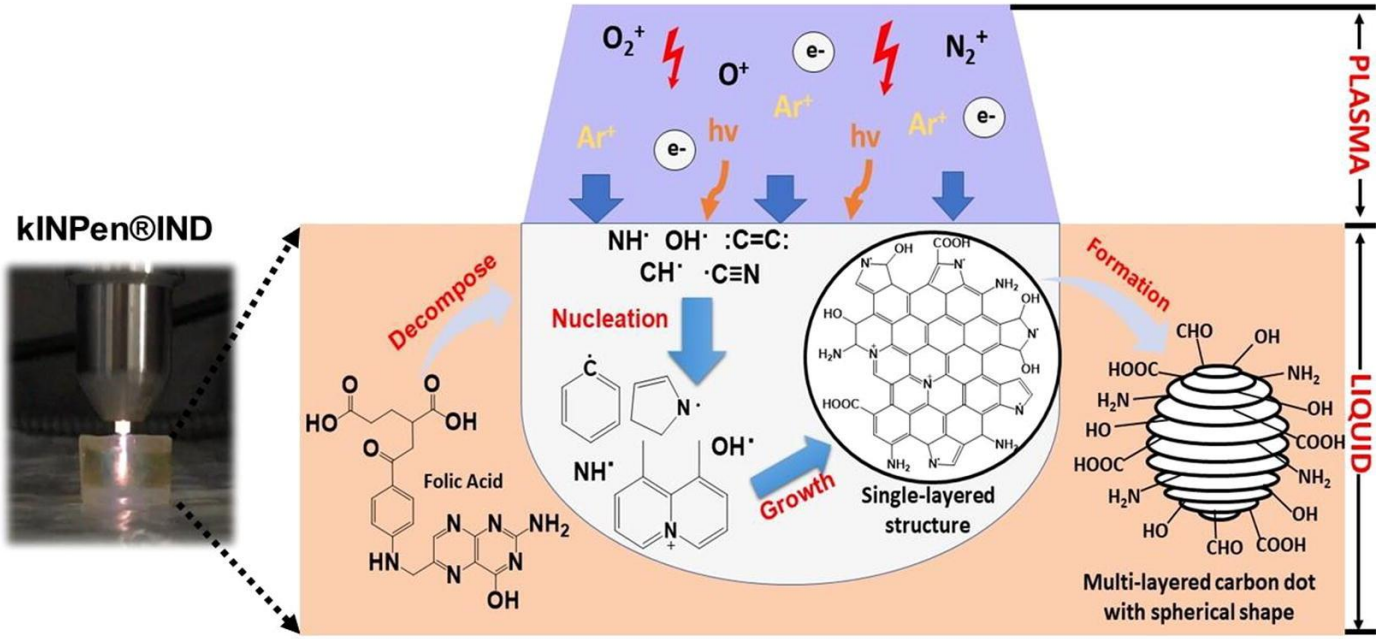
Contents lists available at ScienceDirect

Chemical Engineering Journal

journal homepage: www.elsevier.com/locate/cej

Process intensification for gram-scale synthesis of *N*-doped carbon quantum dots immersing a microplasma jet in a gas-liquid reactor

Quoc Hue Pho [a,e], LiangLiang Lin [d], Evgeny V. Rebrov [e], Mohammad Mohsen Sarafraz [c], Thanh Tung Tran [a,b], Nam Nghiep Tran [a], Dusan Losic [a,b], Volker Hessel [a,e,*]



Mechanism illustration of plasma-liquid based-synthesis process of N-doped carbon dots using folic acid as a precursor

Nanoscale

ROYAL SOCIETY OF CHEMISTRY

PAPER

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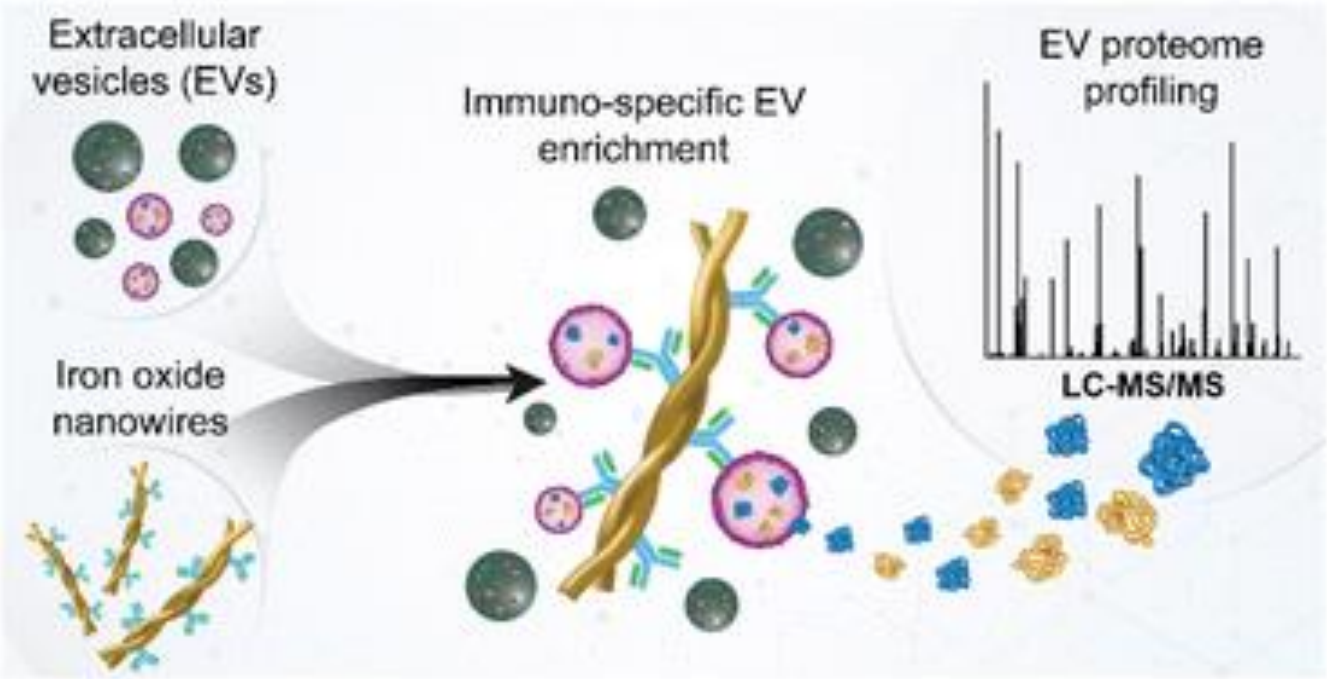
Cite this: *Nanoscale*, 2023, **15**, 1236

Magnetic enrichment of immuno-specific extracellular vesicles for mass spectrometry using biofilm-derived iron oxide nanowires†

Quang Nghia Pham,[a] Marnie Winter,*[a] Valentina Milanova,[a] Clifford Young,[b] Mark R. Condina,[a] Peter Hoffmann,[b] Nguyen T. H. Pham,[c] Tran Thanh Tung,[d] Dusan Losic[d] and Benjamin Thierry*[a]



Environmental Pollution 319 (2023) 121005

Contents lists available at ScienceDirect

Environmental Pollution

journal homepage: www.elsevier.com/locate/envpol

Efficient removal of Cd^{2+} by diatom frustules self-modified *in situ* with intercellular organic components☆

Mengyuan Li [a,b], Dong Liu [a,e,*], Shun Wang [a,c], Haozhe Guo [a], Dusan Losic [d], Liangliang Deng [a], Shijun Wu [a], Peng Yuan [a,f]

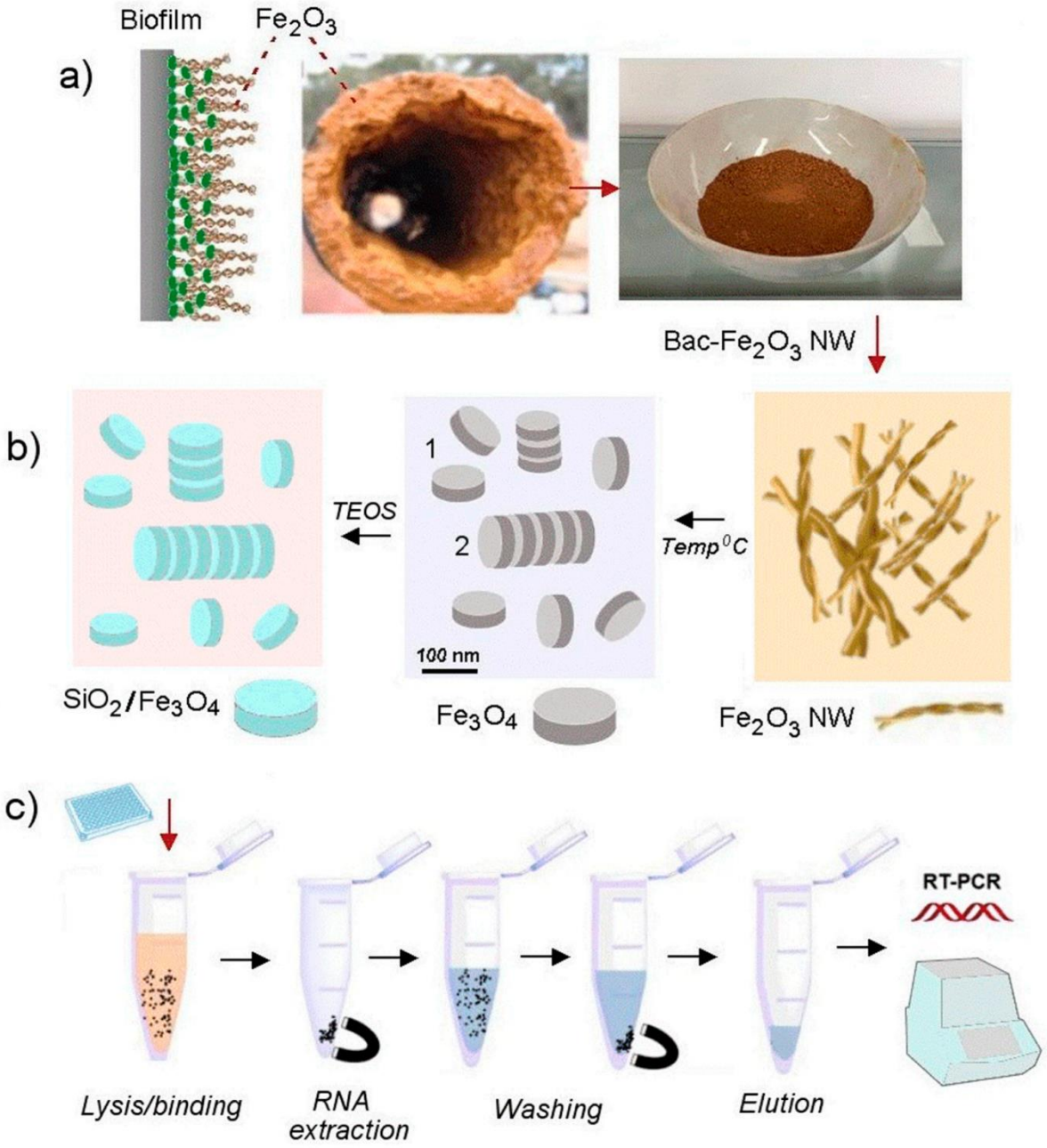
biosensors

MDPI

Article

From Biowaste to Lab-Bench: Low-Cost Magnetic Iron Oxide Nanoparticles for RNA Extraction and SARS-CoV-2 Diagnostics

Le Yu [1,2,†], Penelope Adamson [3,†], Pei Lay Yap [1,2], Tran Tung [1,2], Shaheer Makar [1,2,4], Mark Turra [3], Geoff Higgins [3] and Dusan Losic [1,2,*]



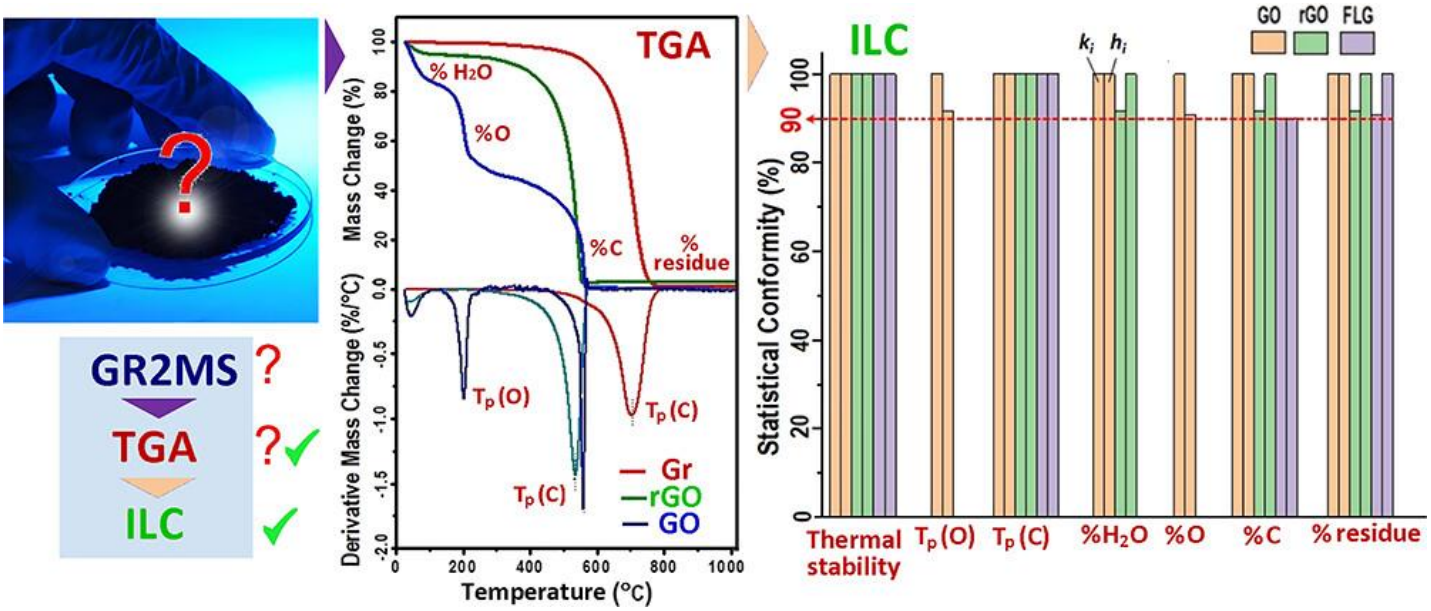
analytical chemistry

pubs.acs.org/ac

Article

International Interlaboratory Comparison of Thermogravimetric Analysis of Graphene-Related Two-Dimensional Materials

Pei Lay Yap, Farzaneh Farivar, Åsa K. Jämting, Victoria A. Coleman, Sam Gnaniah, Elisabeth Mansfield, Cheng Pu, Sandra Marcela Landi, Marcus Vinícius David, Emmanuel Flahaut, Mohammed Aizane, Michael Barnes, Mary Gallerneault, M. Dominique Locatelli, Sébastien Jacquinot, Carlton Gray Slough, Jörg Menzel, Stefan Schmölzer, Lingling Ren, Andrew J. Pollard, and Dusan Losic*



Materials & Design 234 (2023) 112335

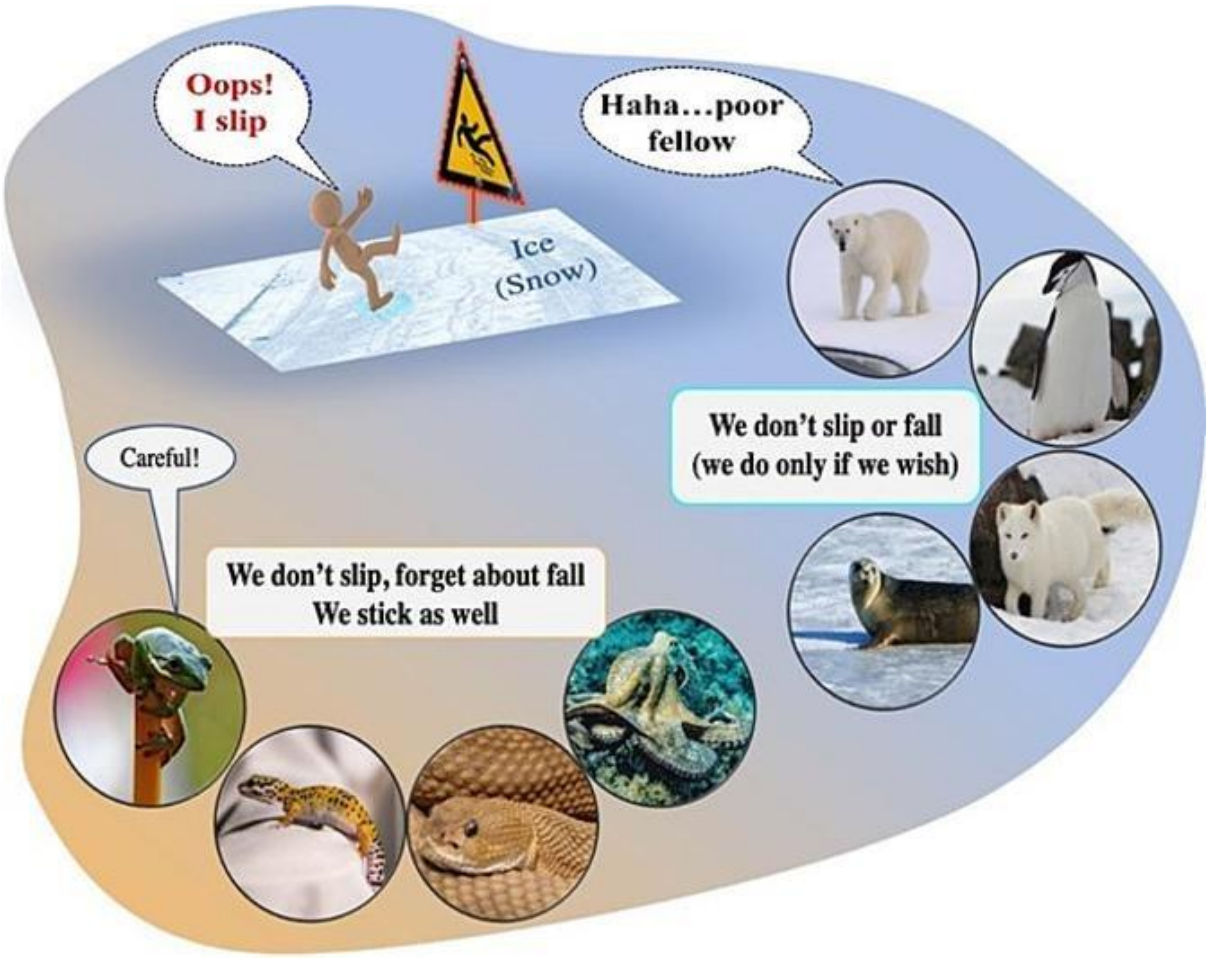
Contents lists available at ScienceDirect

Materials & Design

journal homepage: www.elsevier.com/locate/matdes

Unravelling the physics and mechanisms behind slips and falls on icy surfaces: A comprehensive review and nature-inspired solutions

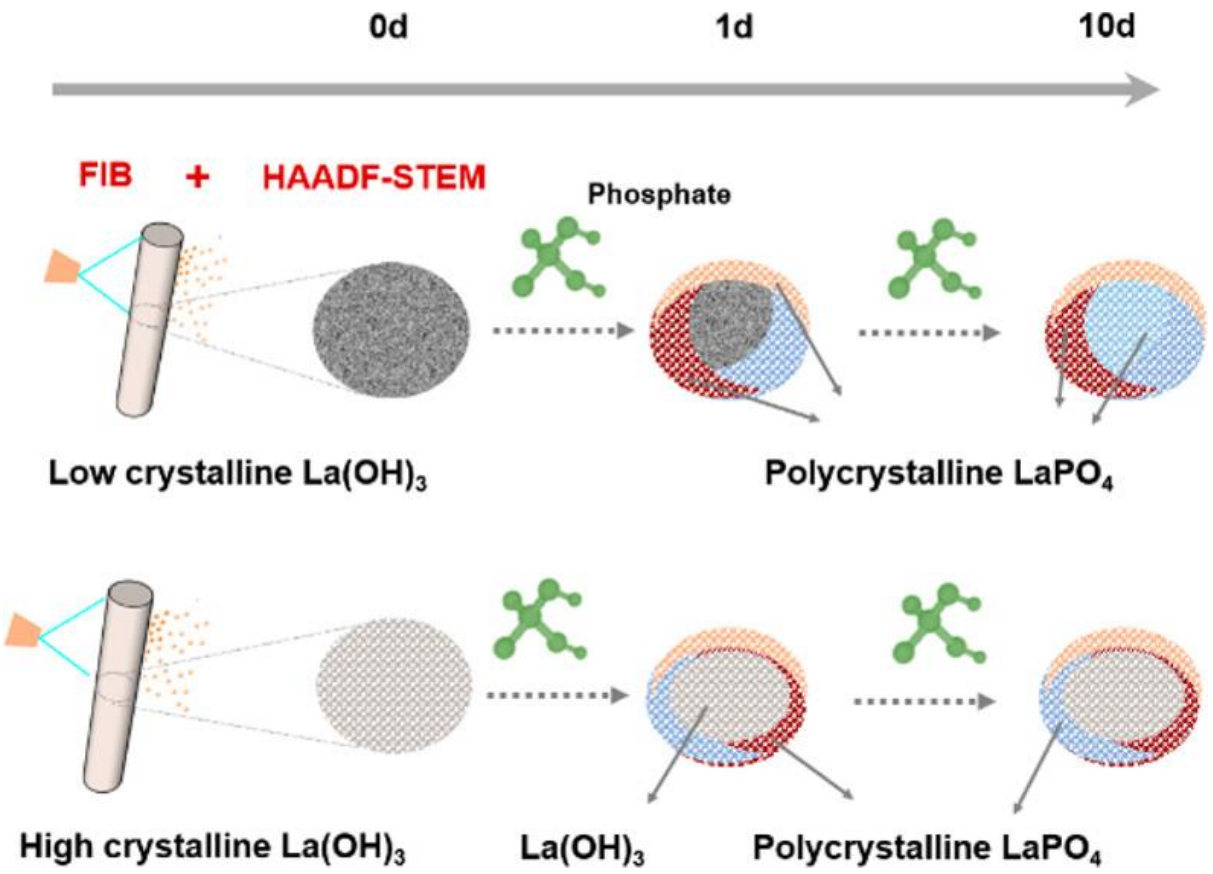
Vipin Richhariya [a,*], Ashis Tripathy [b,*], Oscar Carvalho [a], Md Julker Nine [c], Dusan Losic [c,*], F.S. Silva [a]



THE JOURNAL OF PHYSICAL CHEMISTRY LETTERS
A JOURNAL OF THE AMERICAN CHEMICAL SOCIETY
pubs.acs.org/JPCL Letter

Direct Atomic-Scale Insight into the Precipitation Formation at the Lanthanum Hydroxide Nanoparticle/Solution Interface

Yanfu Wei,* Peng Yuan,* Junming Zhou, Jing Liu, Dusan Losic, Honghai Wu, Hongling Bu, Xinjie Tan, and Zheng Li



Surfaces and Interfaces 40 (2023) 103005

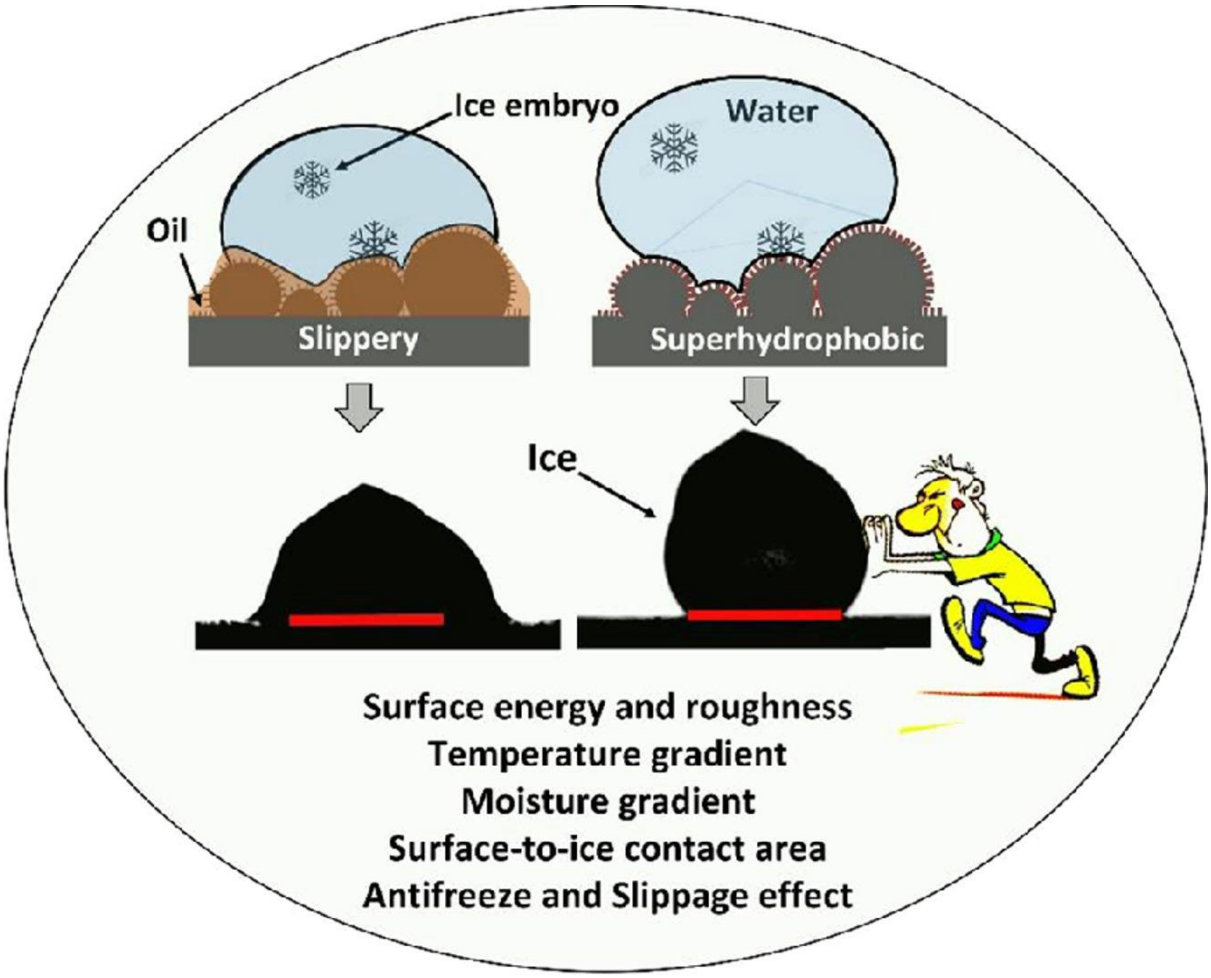
Contents lists available at ScienceDirect

Surfaces and Interfaces

journal homepage: www.sciencedirect.com/journal/surfaces-and-interfaces

Ice-fouling on superhydrophobic and slippery surfaces textured by 3D printing: revealing key limiting factors

Md Julker Nine [a,*], Alena Chizhova [a], Shaheer Maher [a,b], Ashis Tripathy [c], Arash Mazinani [a], Mahnaz Dadkhah [a], Kamrul Hassan [a], Pei Lay Yap [a], Tran T. Tung [a], Dusan Losic [a,*]



Alam et al. Functional Composite Materials (2023) 4:9
https://doi.org/10.1186/s42252-023-00047-x

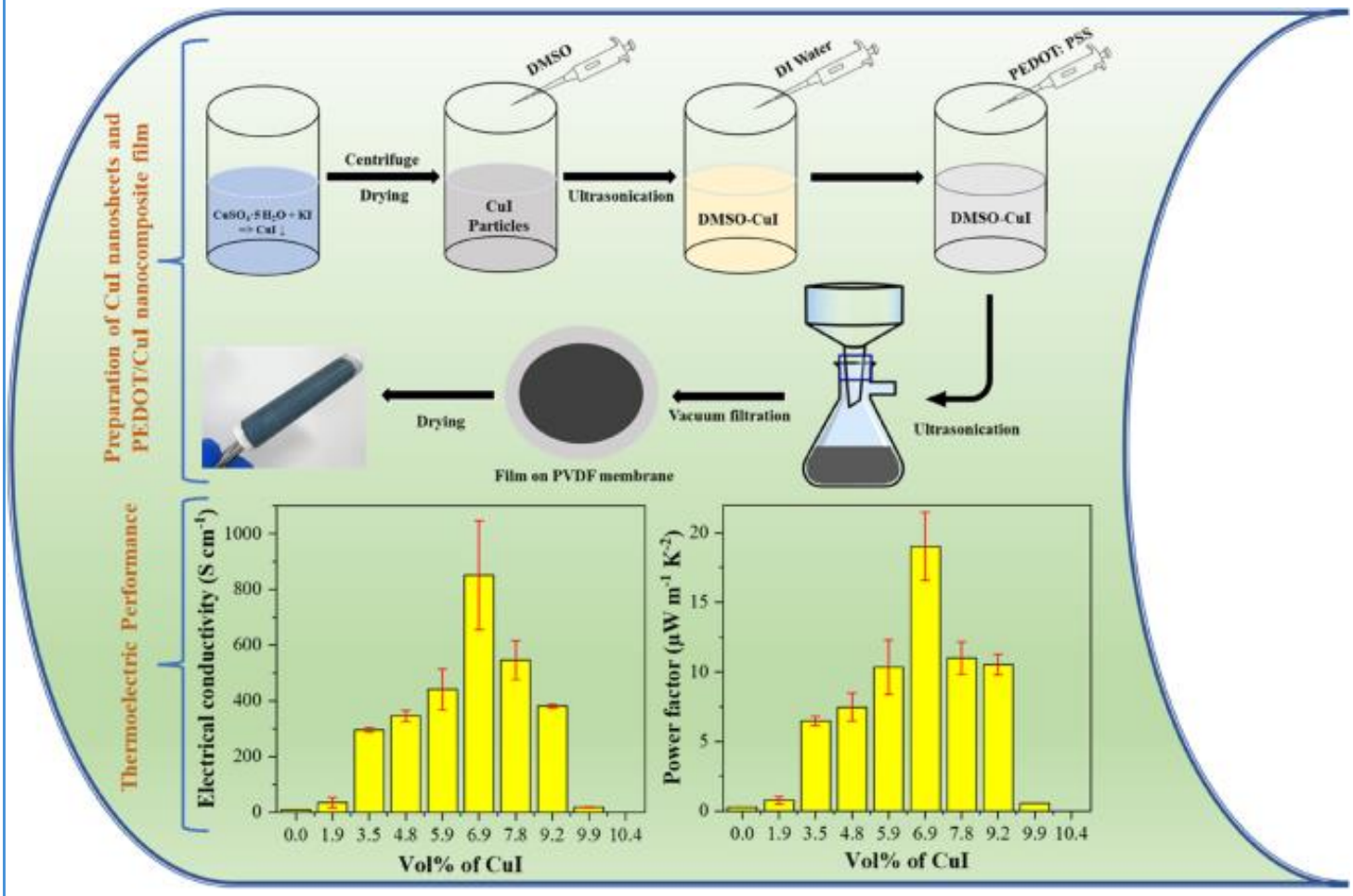
Functional Composite Materials

RESEARCH

Open Access

Preparation, morphology and thermoelectric performance of PEDOT/CuI nanocomposites

Joherul Alam[1], Xiao Su[1], Hsu-Chiang Kuan[2], Shahraam Afshar Vahid[1], Kamil Zuber[1], Qingshi Meng[3], Fanzhe Meng[3], Dusan Losic[4] and Jun Ma[1*]



Carbon 198 (2022) 22–33

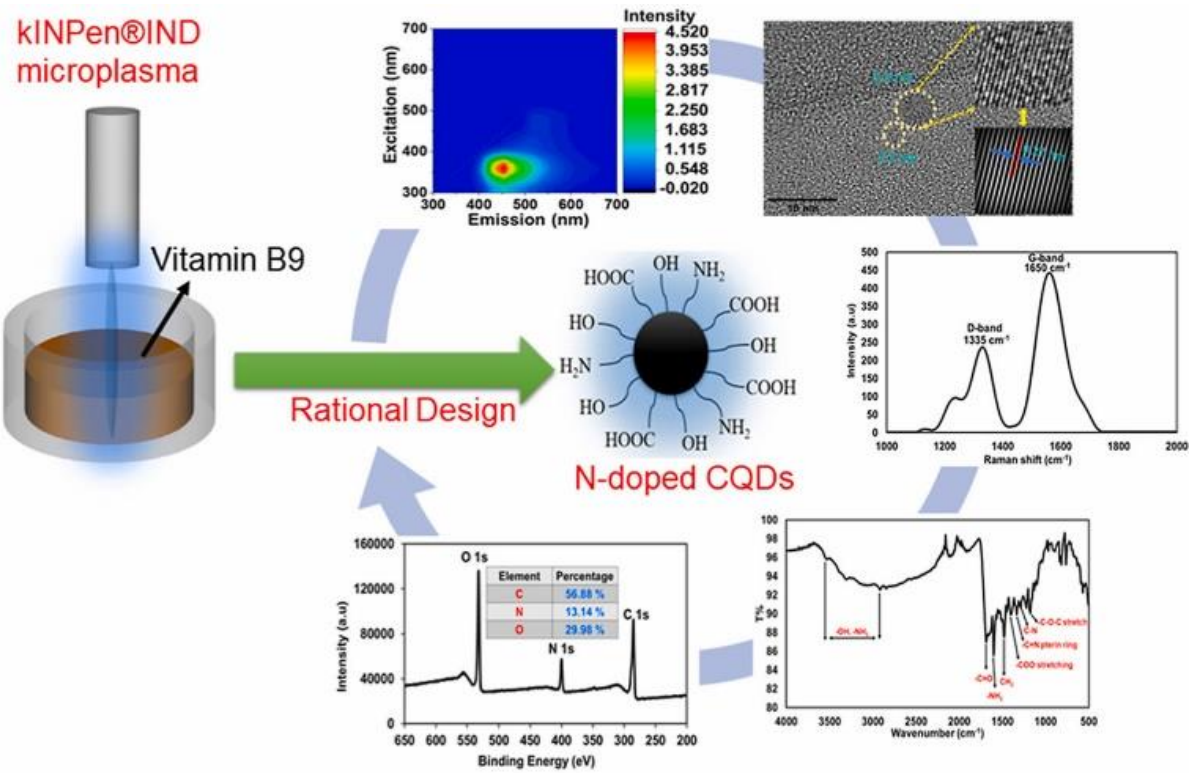
Contents lists available at ScienceDirect

Carbon

journal homepage: www.elsevier.com/locate/carbon

Rational design for the microplasma synthesis from vitamin B9 to N-doped carbon quantum dots towards selected applications

Quoc Hue Pho [a,d], LiangLiang Lin [c,e], Nam Nghiep Tran [a], Tung T. Tran [a,b], An Hoa Nguyen [a], Dusan Losic [a,b], Evgeny V. Rebrov [d], Volker Hessel [a,d,*]

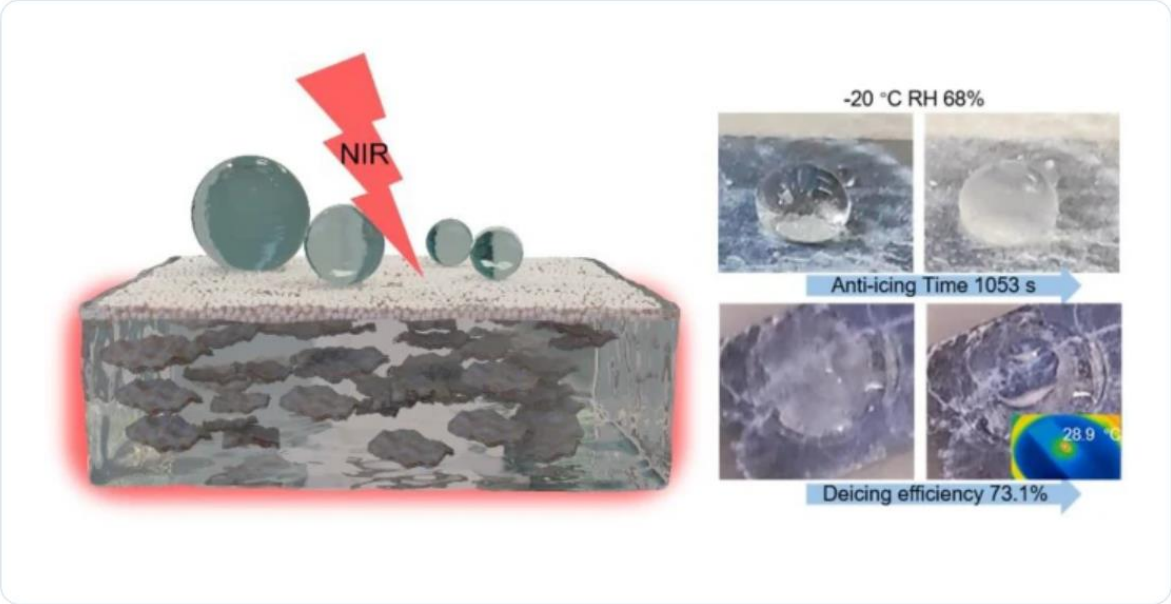


Advanced Composites and Hybrid Materials (2022) 5:3035–3044
https://doi.org/10.1007/s42114-022-00549-5

ORIGINAL RESEARCH

Efficient photothermal deicing employing superhydrophobic plasmonic MXene composites

Jiaying Wang[1] · Peihang Li[1] · Peng Yu[2] · Tim Leydecker[1] · Ilker S. Bayer[3] · Dusan Losic[4] · Arup Neogi[1] · Zhiming Wang[1,5]

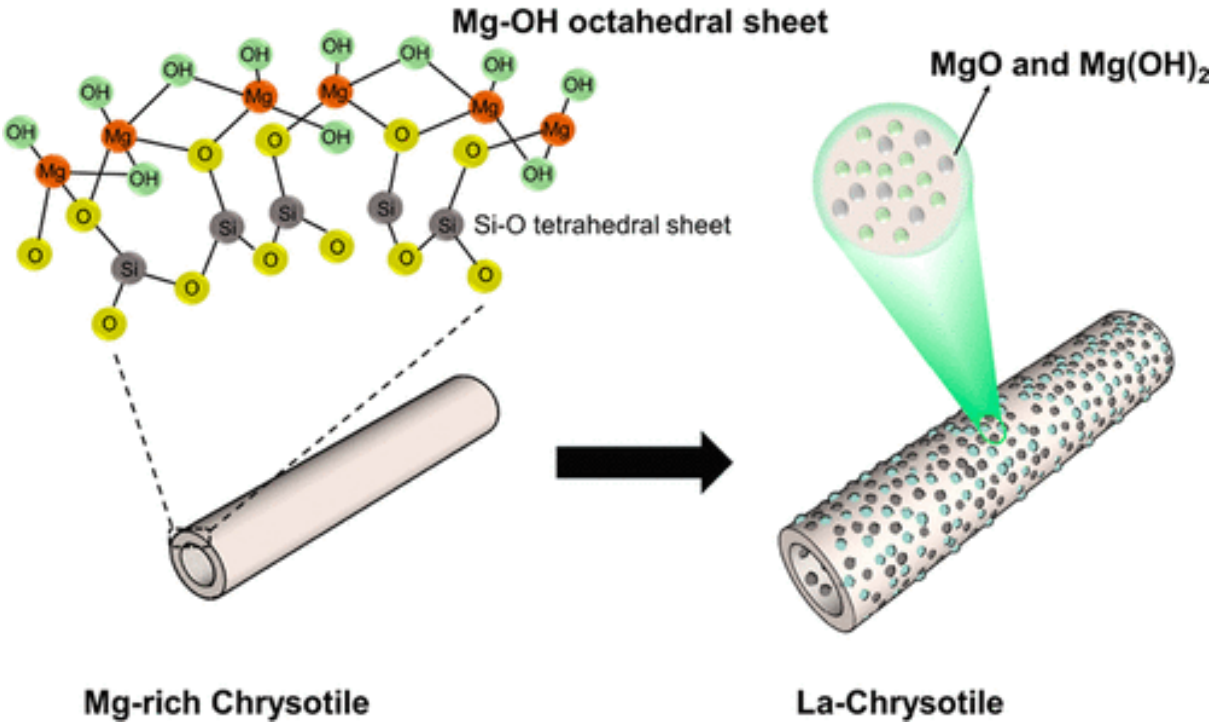


Inorganic Chemistry

pubs.acs.org/IC Article

Converting Chrysotile Nanotubes into Magnesium Oxide and Hydroxide Using Lanthanum Oxycarbonate Hybridization and Alkaline Treatment for Efficient Phosphate Adsorption

Yanfu Wei,* Peng Yuan,* Dong Liu, Mingxian Liu, Dusan Losic, Xiaomin Ma, Ran Jiang, Nanchun Wu, Fang Yang, and Junxiong Zhang



Available online at www.sciencedirect.com

ScienceDirect

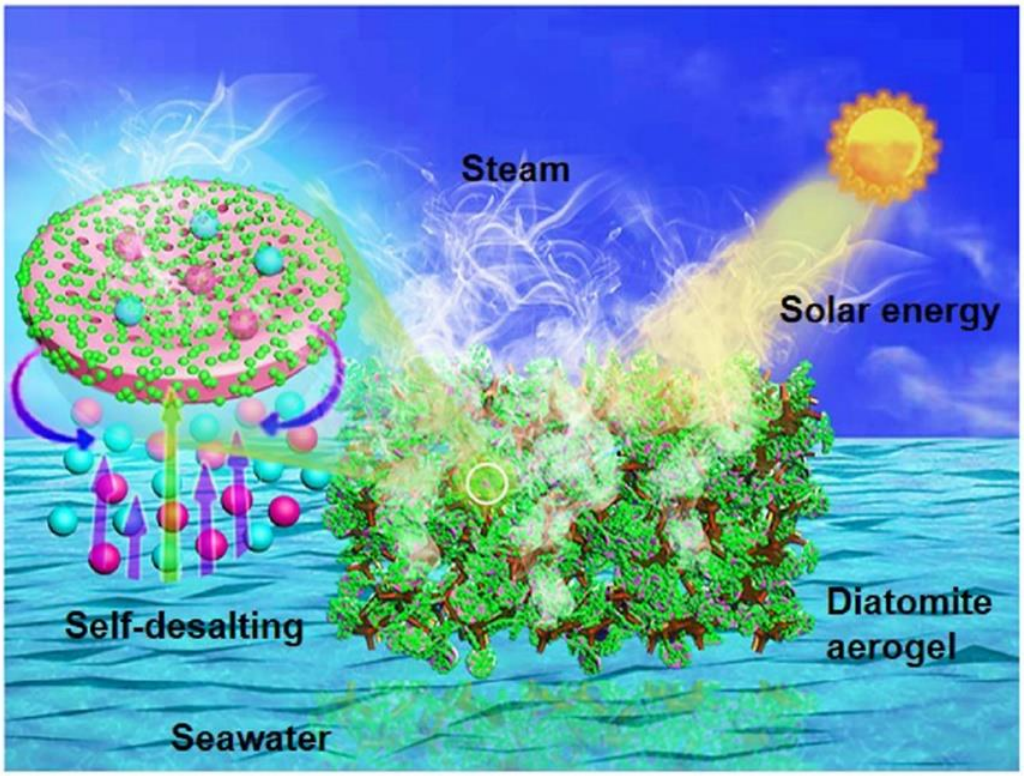
Green Energy & Environment 9 (2024) 378–389

www.keaipublishing.com/gee

Research paper

Natural high-porous diatomaceous-earth based self-floating aerogel for efficient solar steam power generation

Aitang Zhang [a], Kai Wang [a], Md Julker Nine [b], Mengyu Cao [a], Hanwen Zong [a], Zhiqiang Liu [a], Hanwen Guo [a], Jingquan Liu [a,*], Dusan Losic [b,*]



Applied Materials Today 29 (2022) 101566

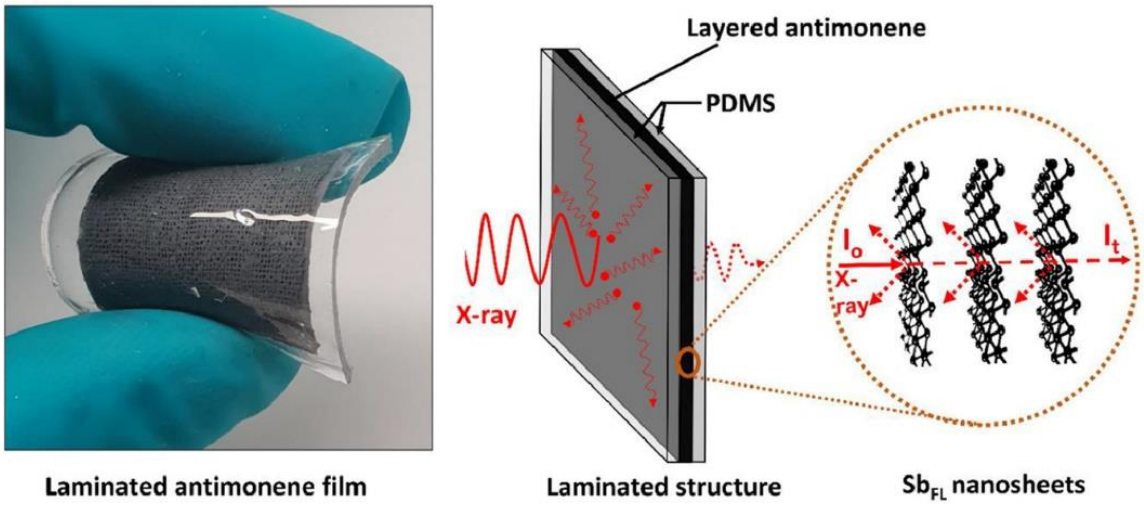
Contents lists available at ScienceDirect

Applied Materials Today

journal homepage: www.elsevier.com/locate/apmt

Laminated antimonene as an alternative and efficient shielding strategy against X-ray radiation

Md J. Nine [a,*], Le Yu [a], Ana L.C. Pereira [a,b], Munkhbayar Batmunkh [c], Kamrul Hassan [a], Alexandre M.C. Santos [d,e], Tran T. Tung [a], Dusan Losic [a,*]



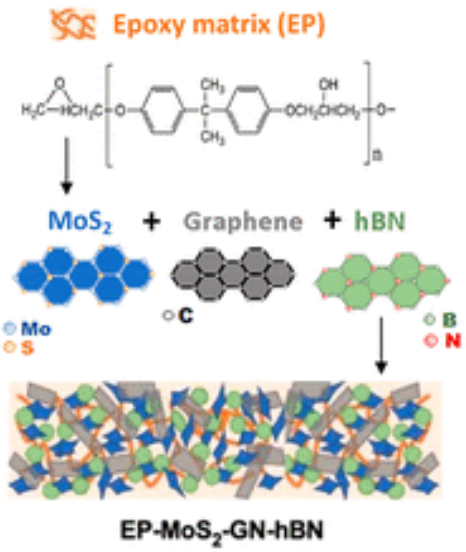
ACS APPLIED NANO MATERIALS

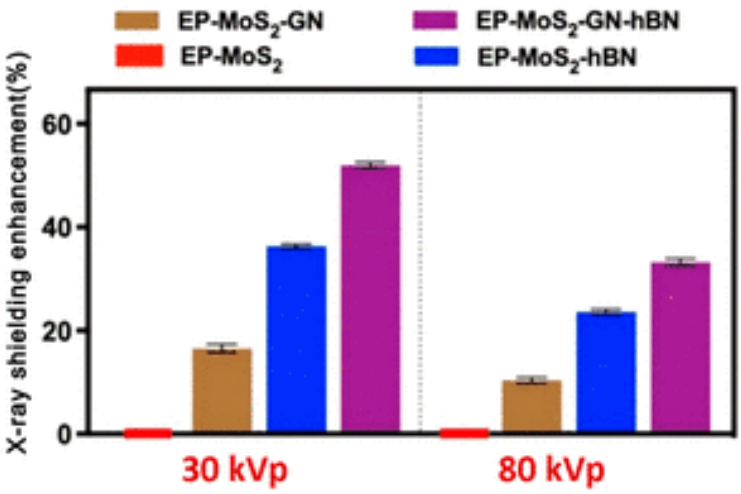
www.acsanm.org

Forum Article

Graphene and Hexagonal Boron Nitride in Molybdenum Disulfide/ Epoxy Composites for Significant X-ray Shielding Enhancement

Le Yu, Pei Lay Yap, Alexandre Santos, Diana Tran, Kamrul Hassan, Jun Ma, and Dusan Losic*





Food Hydrocolloids 132 (2022) 107855

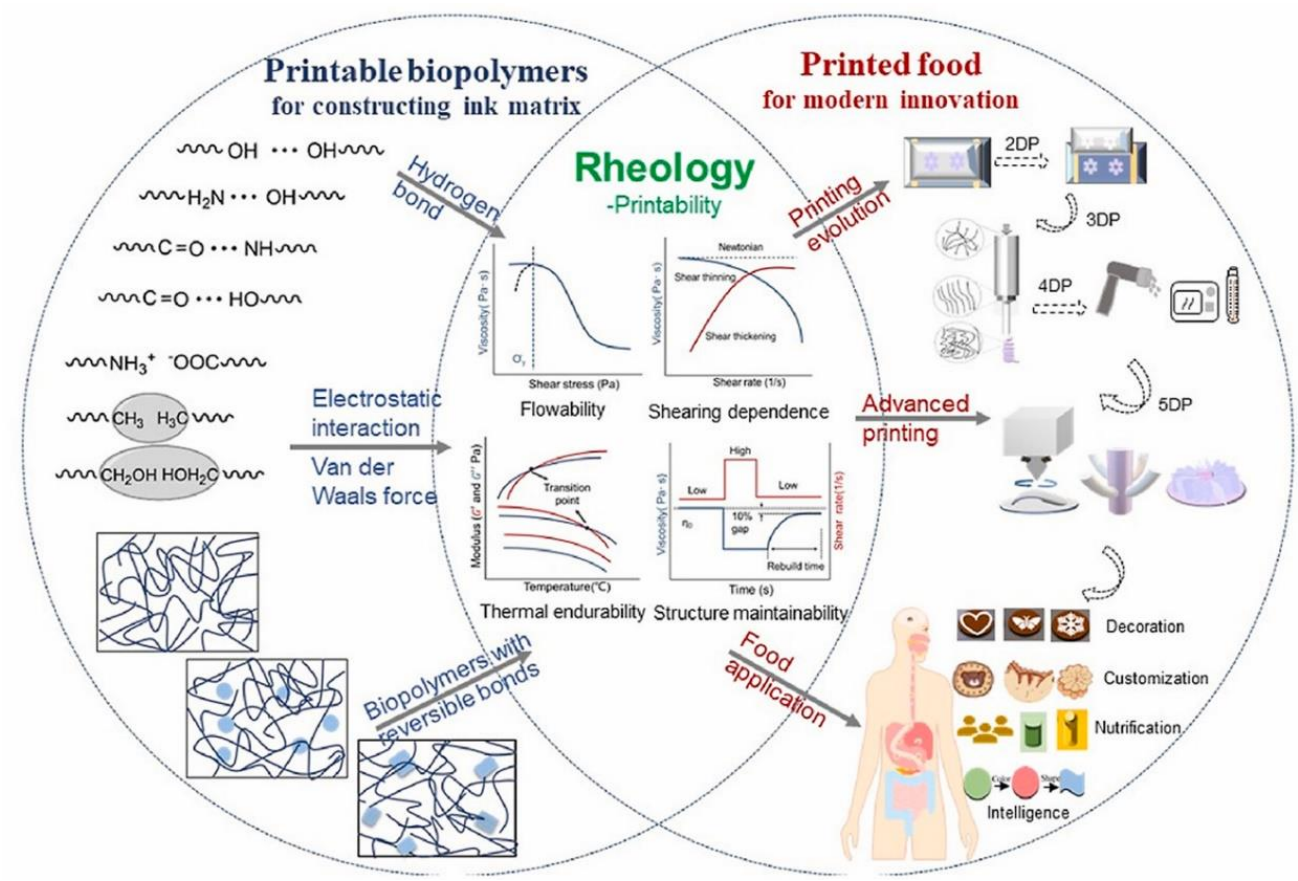
Contents lists available at ScienceDirect

Food Hydrocolloids

journal homepage: www.elsevier.com/locate/foodhyd

Rheology of edible food inks from 2D/3D/4D printing, and its role in future 5D/6D printing

Yang Cheng [a,b,c], Yu Fu [a], Liang Ma [a], Pei Lay Yap [d,e], Dusan Losic [d,e], Hongxia Wang [a,b,c,**], Yuhao Zhang [a,b,c,*]



Applied Materials Today 27 (2022) 101486

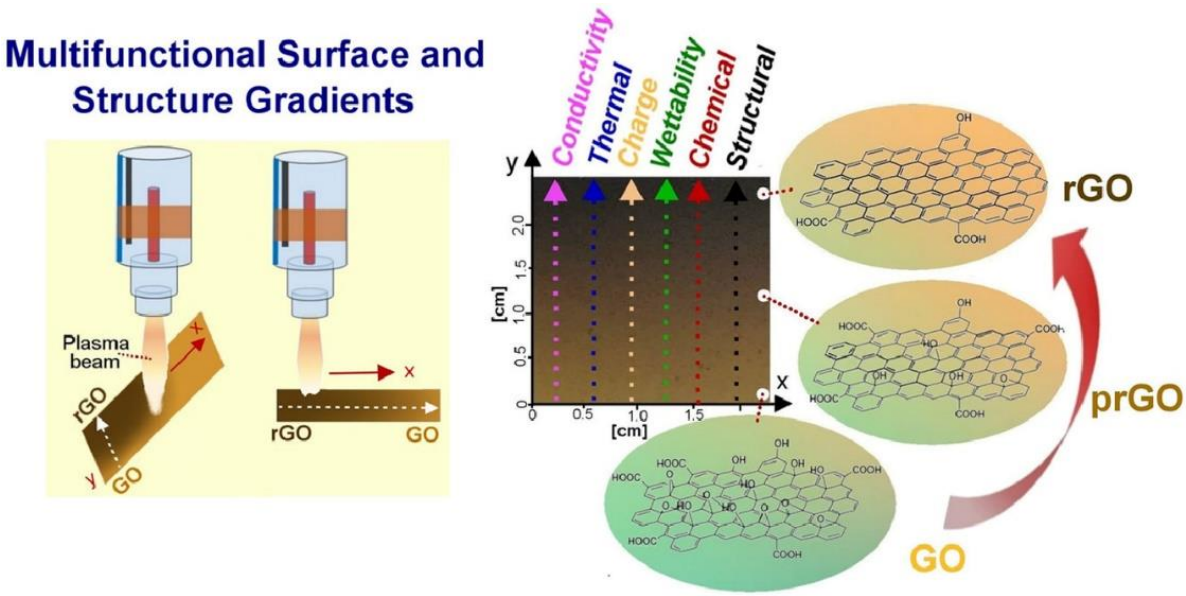
Contents lists available at ScienceDirect

Applied Materials Today

journal homepage: www.elsevier.com/locate/apmt

Graphene-based multifunctional surface and structure gradients engineered by atmospheric plasma

Fiasal K. Alosaimi[a,b], Tran T. Tung[a,b], Van-Duong Dao[c], Nguyen K. Huyen[c], Md J. Nine[a,b], Kamrul Hassan[a,b], Jun Ma[d], Dusan Losic[a,b,*]



Science of the Total Environment 848 (2022) 157743

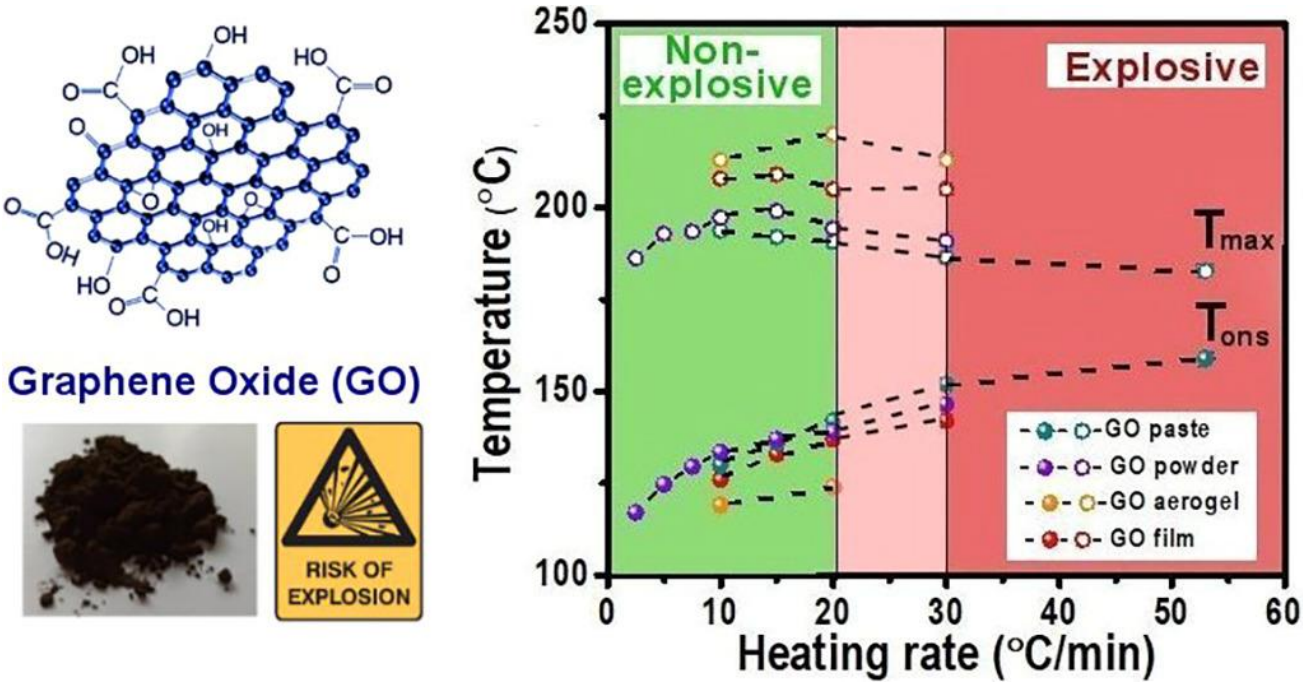
Contents lists available at ScienceDirect

Science of the Total Environment

journal homepage: www.elsevier.com/locate/scitotenv

New insights on energetic properties of graphene oxide (GO) materials and their safety and environmental risks

Dusan Losic [a,b,*], Farzaneh Farivar [a,b], Pei Lay Yap [a,b], Tran Thanh Tung [a,b], Md Julker Nine [a,b]



Sustainable Materials and Technologies 32 (2022) e00393

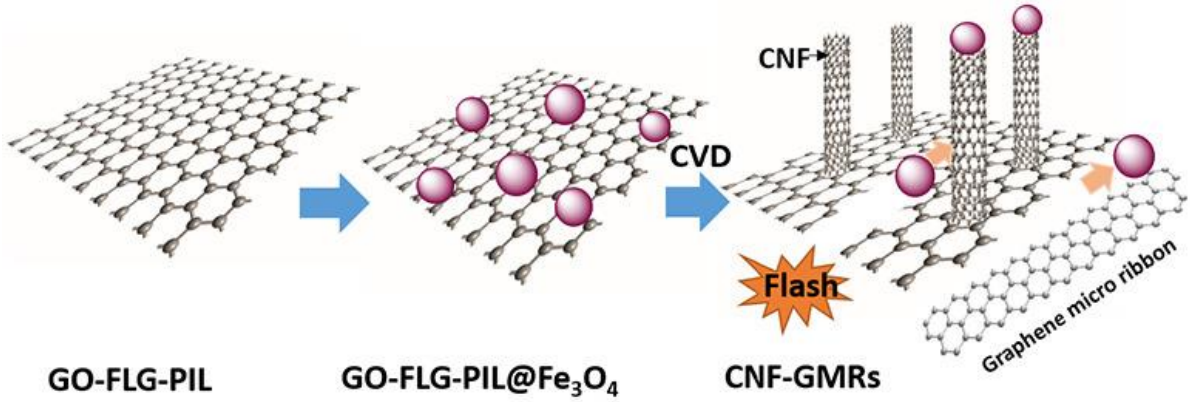
Contents lists available at ScienceDirect

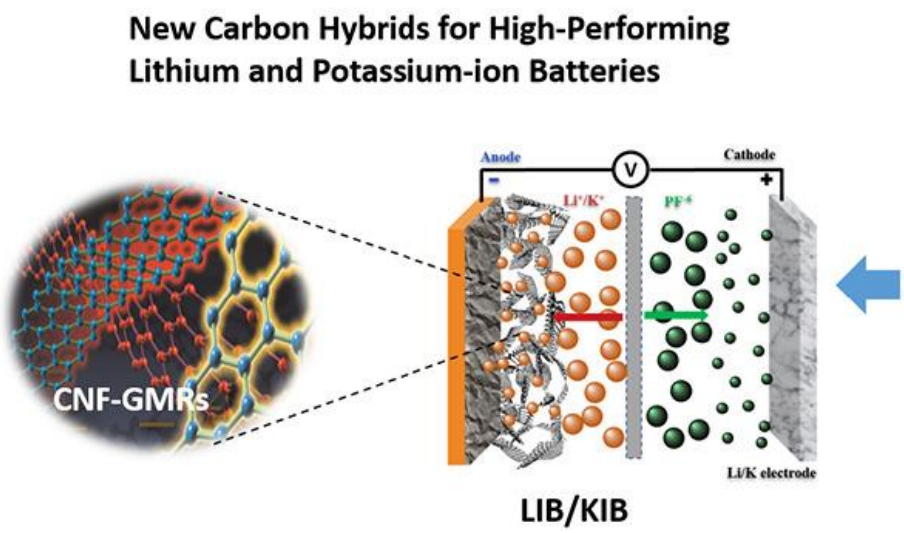
Sustainable Materials and Technologies

journal homepage: www.elsevier.com/locate/susmat

Coupling graphene microribbons with carbon nanofibers: New carbon hybrids for high-performing lithium and potassium-ion batteries

Tran Thanh Tung [a], Mahmoud Moussa [a], Kumud Malika Tripathi [b], TaeYoung Kim [c], Md Julker Nine [a], Ashok Kumar Nanjundan [d,e], Deepak Dubal [f,**], Dusan Losic [a,*]





ACS APPLIED MATERIALS & INTERFACES

www.acsami.org

Research Article

Coupling Natural Halloysite Nanotubes and Bimetallic Pt–Au Alloy Nanoparticles for Highly Efficient and Selective Oxidation of 5-Hydroxymethylfurfural to 2,5-Furandicarboxylic Acid

Xuemin Zhong, Peng Yuan,* Yanfu Wei,* Dong Liu, Dusan Losic, and Mengyuan Li

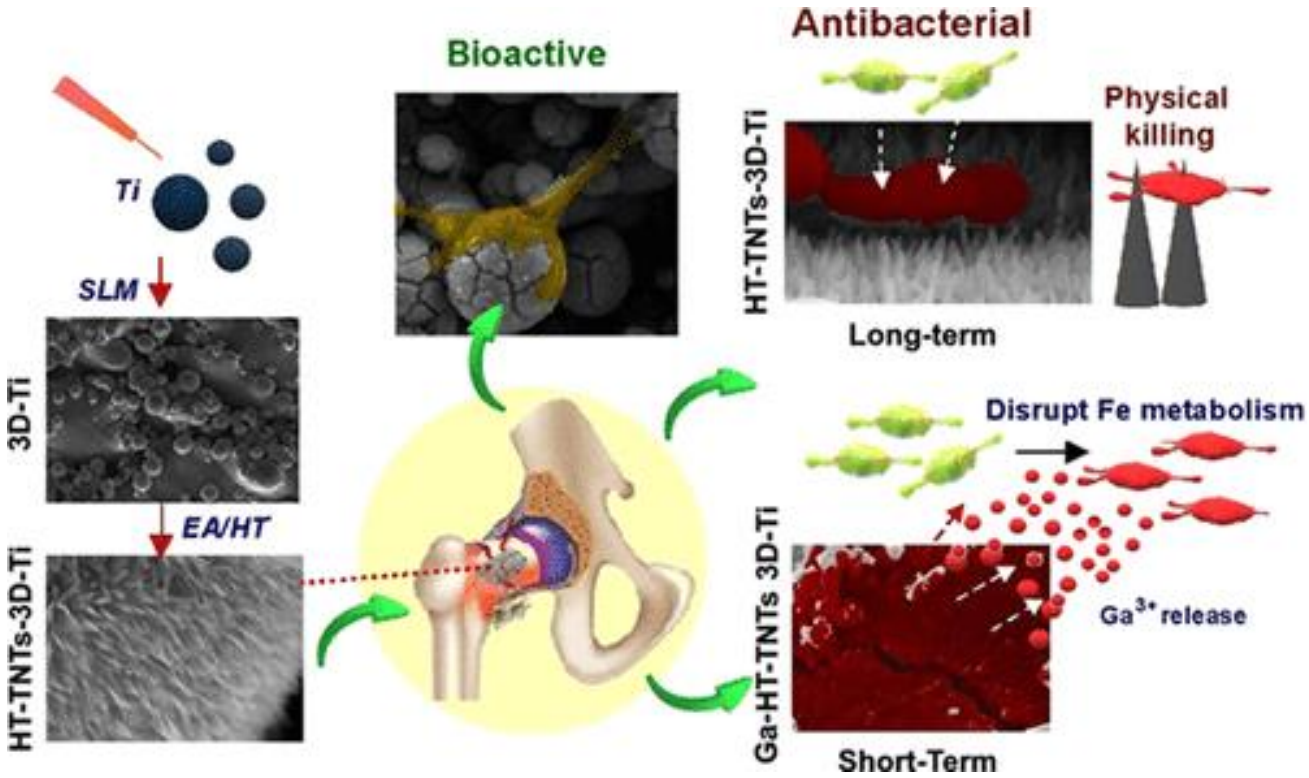
ACS Biomaterials SCIENCE & ENGINEERING

pubs.acs.org/journal/abseba

Article

Advancing of 3D-Printed Titanium Implants with Combined Antibacterial Protection Using Ultrasharp Nanostructured Surface and Gallium-Releasing Agents

Shaheer Maher,[○] Denver Linklater,[○] Hadi Rastin, Sandy Tzu-Ying Liao, Karolinne Martins de Sousa, Luis Lima-Marques, Peter Kingshott, Helmut Thissen, Elena P. Ivanova,* and Dusan Losic*



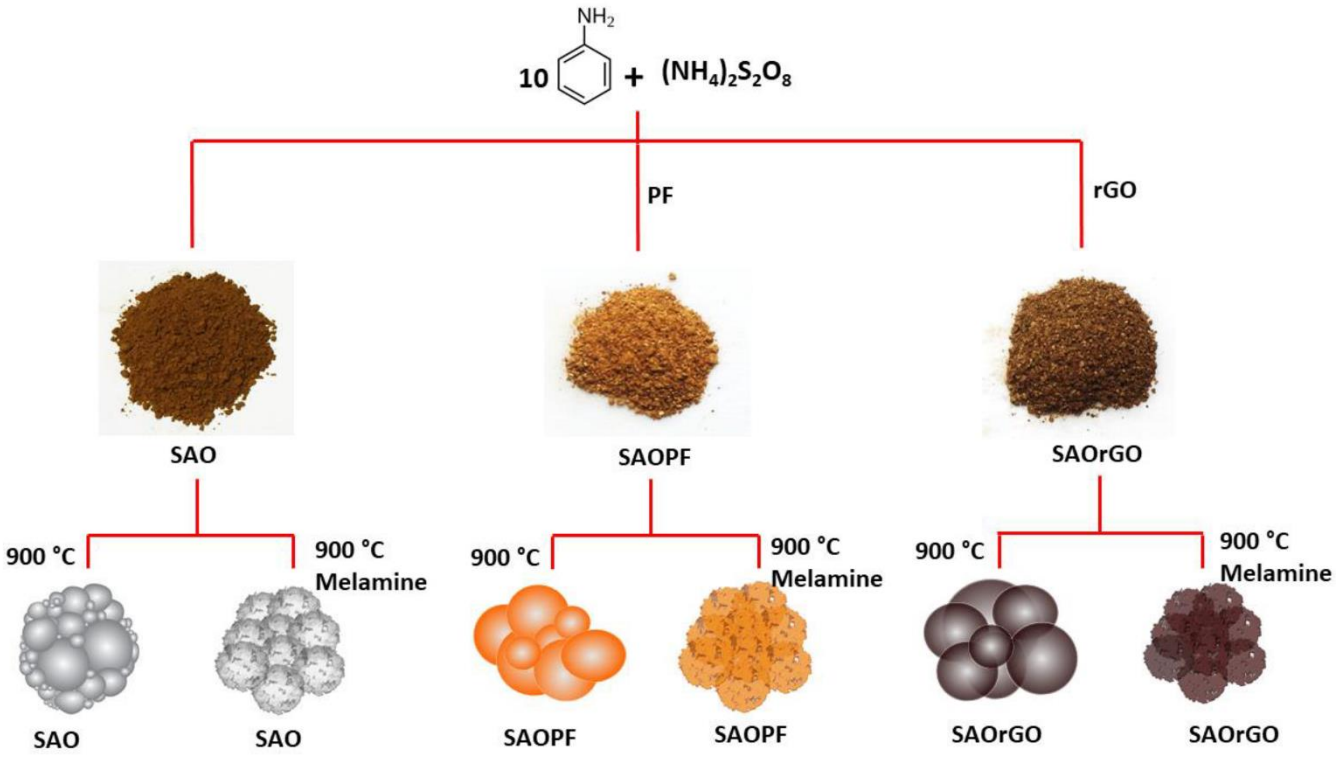
nanomaterials

MDPI

Article

A Unique Synthesis of Macroporous N-Doped Carbon Composite Catalyst for Oxygen Reduction Reaction

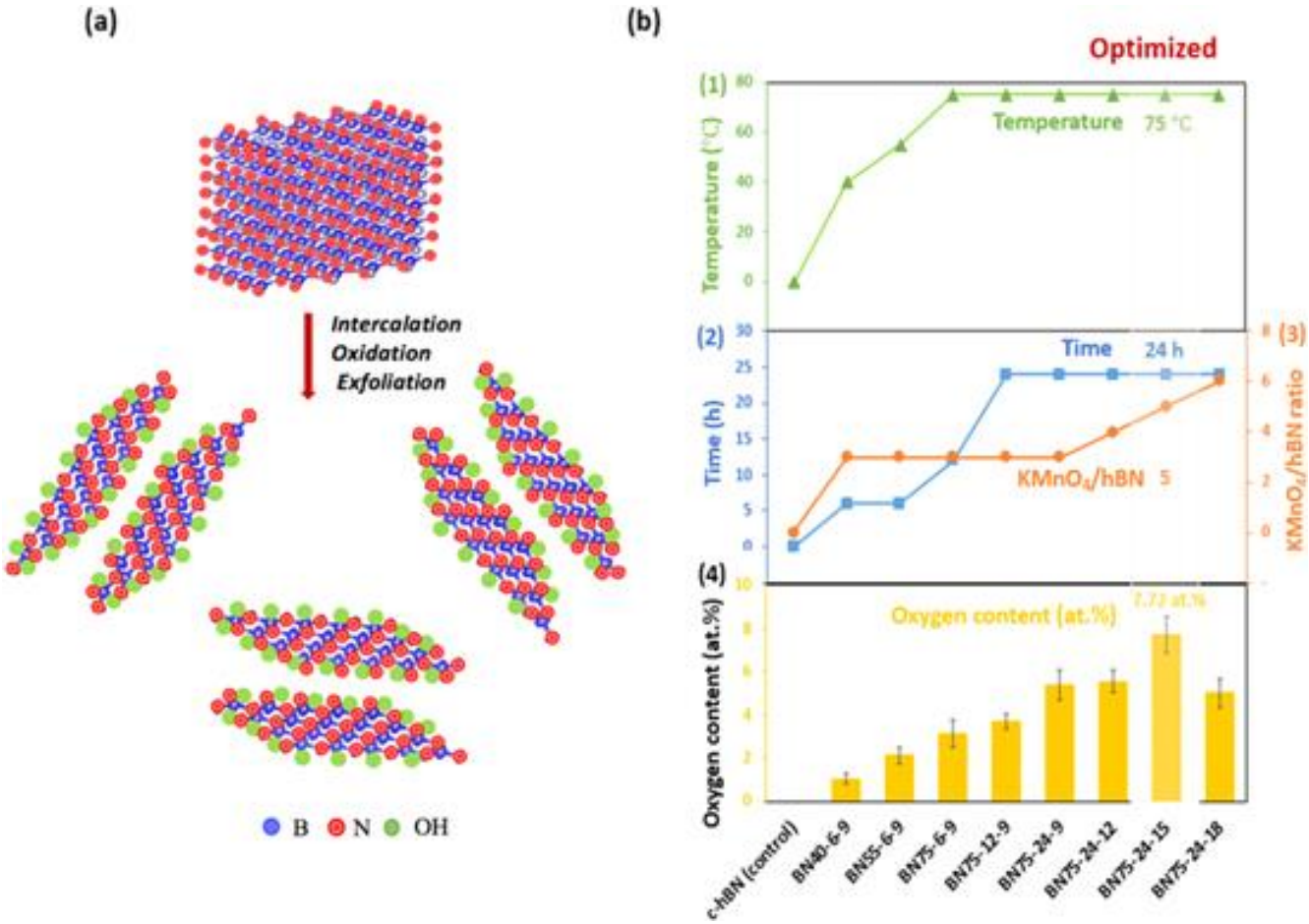
Ramesh Karunagaran [1], Diana Tran [1], Tran Thanh Tung [2,1,*], Cameron Shearer [3] and Dusan Losic [1,*]



IOP Publishing Nanotechnology
Nanotechnology 32 (2021) 405601 (10pp) https://doi.org/10.1088/1361-6528/ac0931

High-yield preparation of edge-functionalized and water dispersible few-layers of hexagonal boron nitride (hBN) by direct wet chemical exfoliation

Le Yu[1,2], Pei Lay Yap[1,2], Diana N H Tran[1,2], Alexandre M C Santos[3,4] and Dusan Losic[1,2]



Chemosphere 263 (2021) 127790

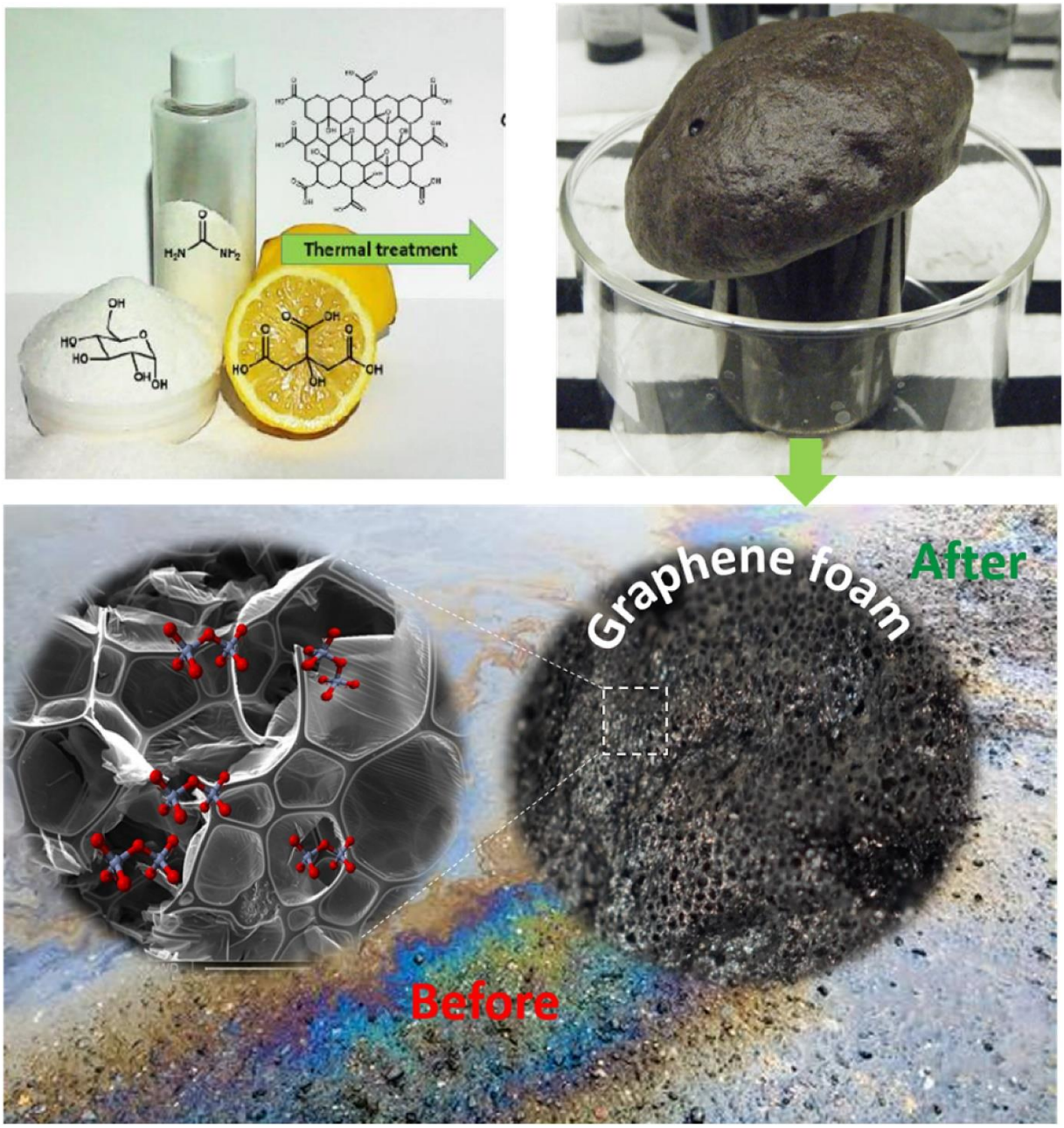
Contents lists available at ScienceDirect

Chemosphere

journal homepage: www.elsevier.com/locate/chemosphere

Multiple applications of bio-graphene foam for efficient chromate ion removal and oil-water separation

Melinda Krebsz [a], Tibor Pasinszki [b, **], Tran Thanh Tung [a, c, *], Md Julker Nine [a, c], Dusan Losic [a, c, ***]



Nanoscale

ROYAL SOCIETY OF CHEMISTRY

PAPER

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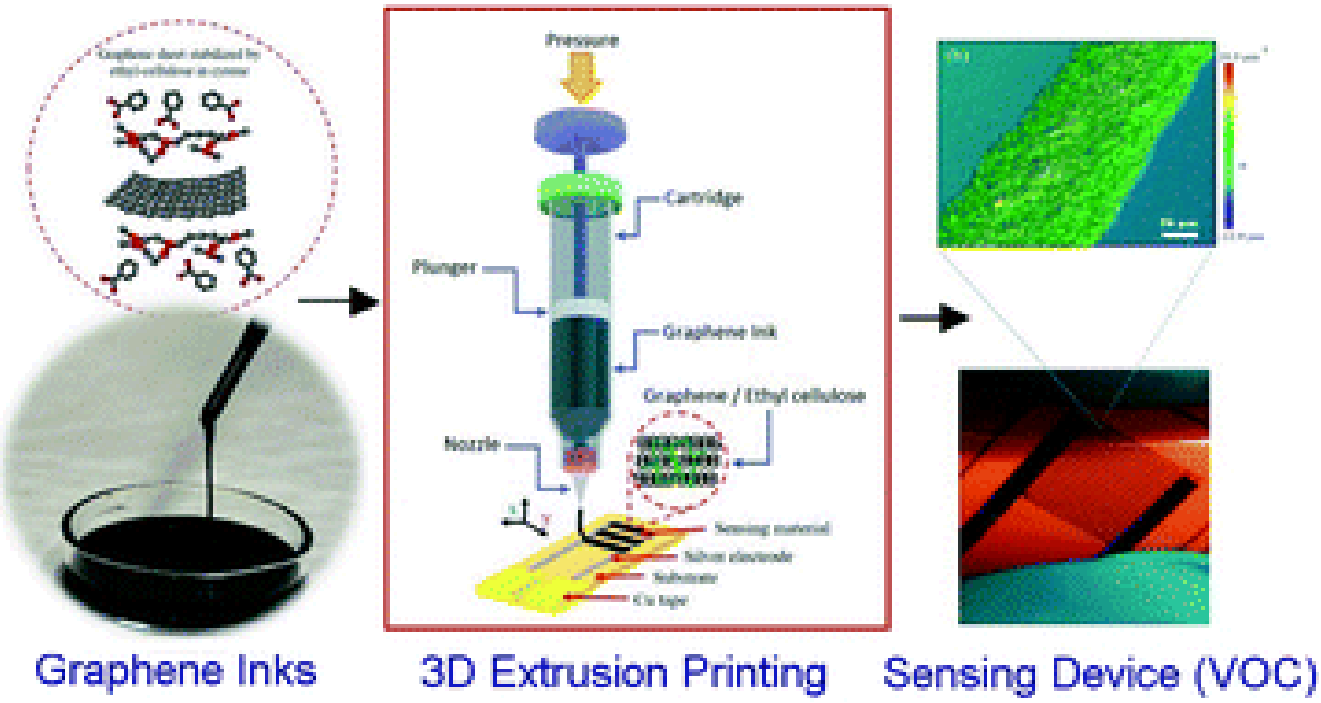
Cite this: *Nanoscale*, 2021, **13**, 5356

Graphene ink for 3D extrusion micro printing of chemo-resistive sensing devices for volatile organic compound detection†

Kamrul Hassan,[a,b] Tran Thanh Tung,[a,b] Nathan Stanley,[a,b] Pei Lay Yap,[a,b] Farzaneh Farivar,[a,b] Hadi Rastin,[a,b] Md Julker Nine[a,b] and Dusan Losic*[a,b]



Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy 252 (2021) 119471

Contents lists available at ScienceDirect

Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy

journal homepage: www.elsevier.com/locate/saa

Magnetic reduced graphene oxide as a nano-vehicle for loading and delivery of curcumin

Zhi Zhu [a], Qiulan Zhang [a,b,c,*], Pei Lay Yap [d], Yongnian Ni [a], Dusan Losic [d]

Materials and Design 200 (2021) 109443

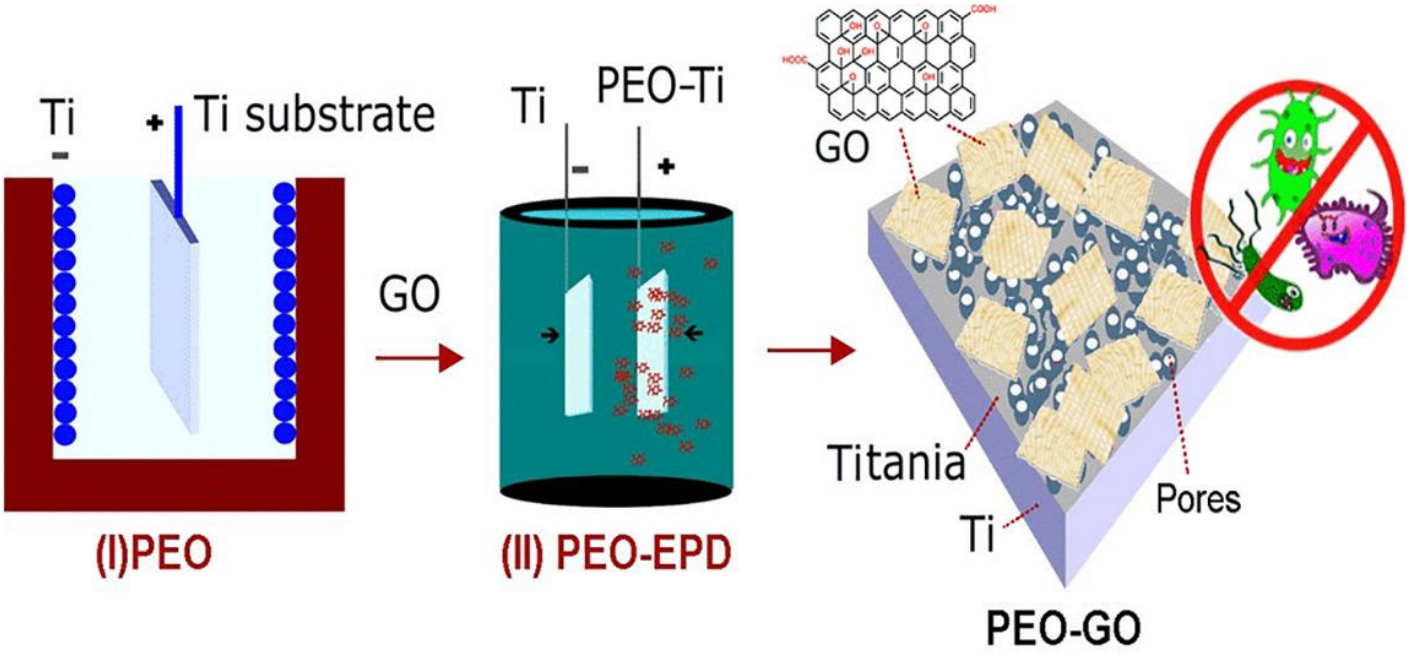
Contents lists available at ScienceDirect

Materials and Design

journal homepage: www.elsevier.com/locate/matdes

Graphene oxide (GO) decorated on multi-structured porous titania fabricated by plasma electrolytic oxidation (PEO) for enhanced antibacterial performance

Arash Mazinani [a,b], Md Julker Nine [a,b], Roberto Chiesa [c], Gabriele Candiani [c], Paolo Tarsini [c], Tran Thanh Tung [a,b], Dusan Losic [a,b,*]

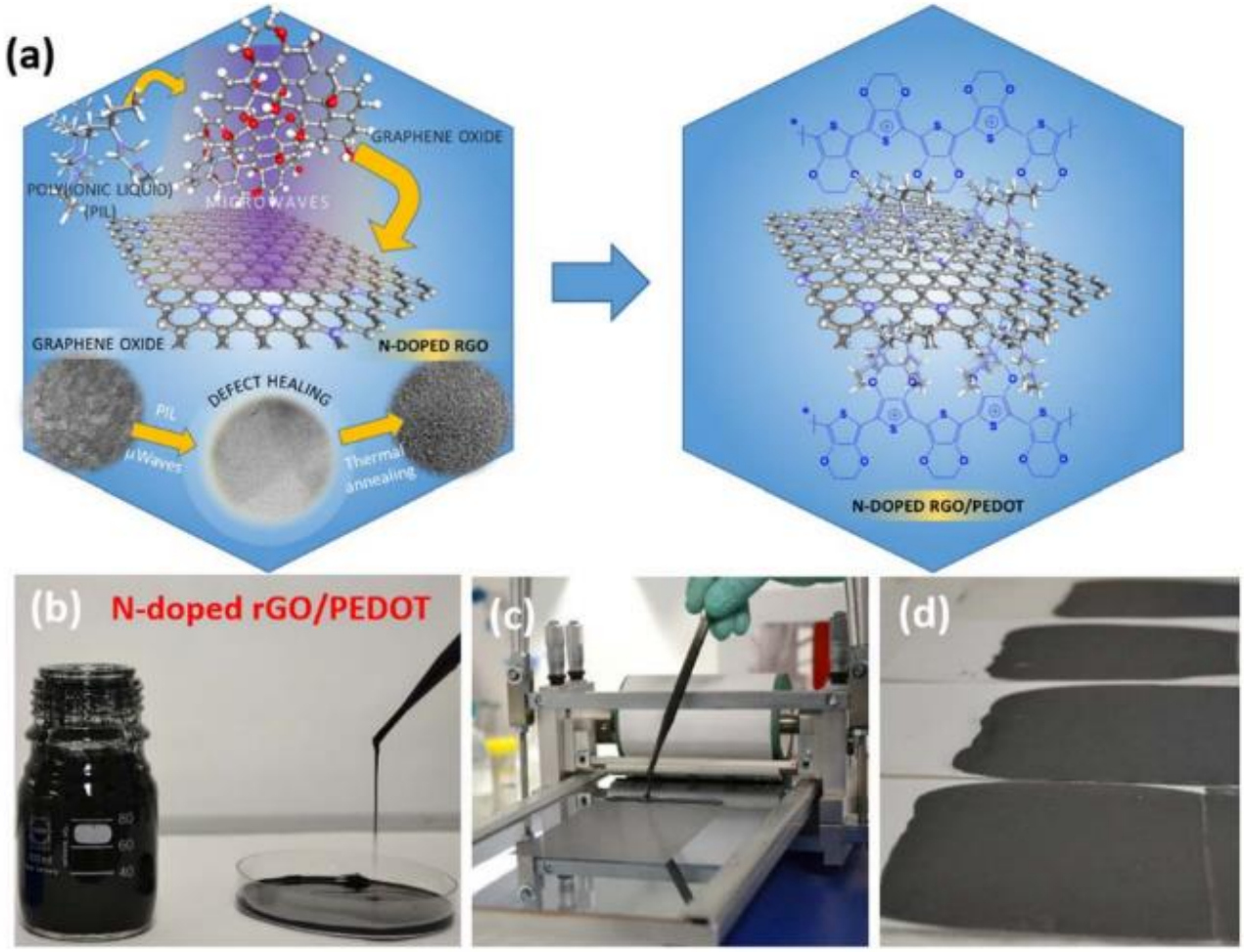


Nanotechnology

PAPER

N-doped reduced graphene oxide-PEDOT nanocomposites for implementation of a flexible wideband antenna for wearable wireless communication applications

Tran Thanh Tung[4,1], Shengjian Jammy Chen[4,2], Christophe Fumeaux[5,2], TaeYoung Kim[3] and Dusan Losic[5,1]



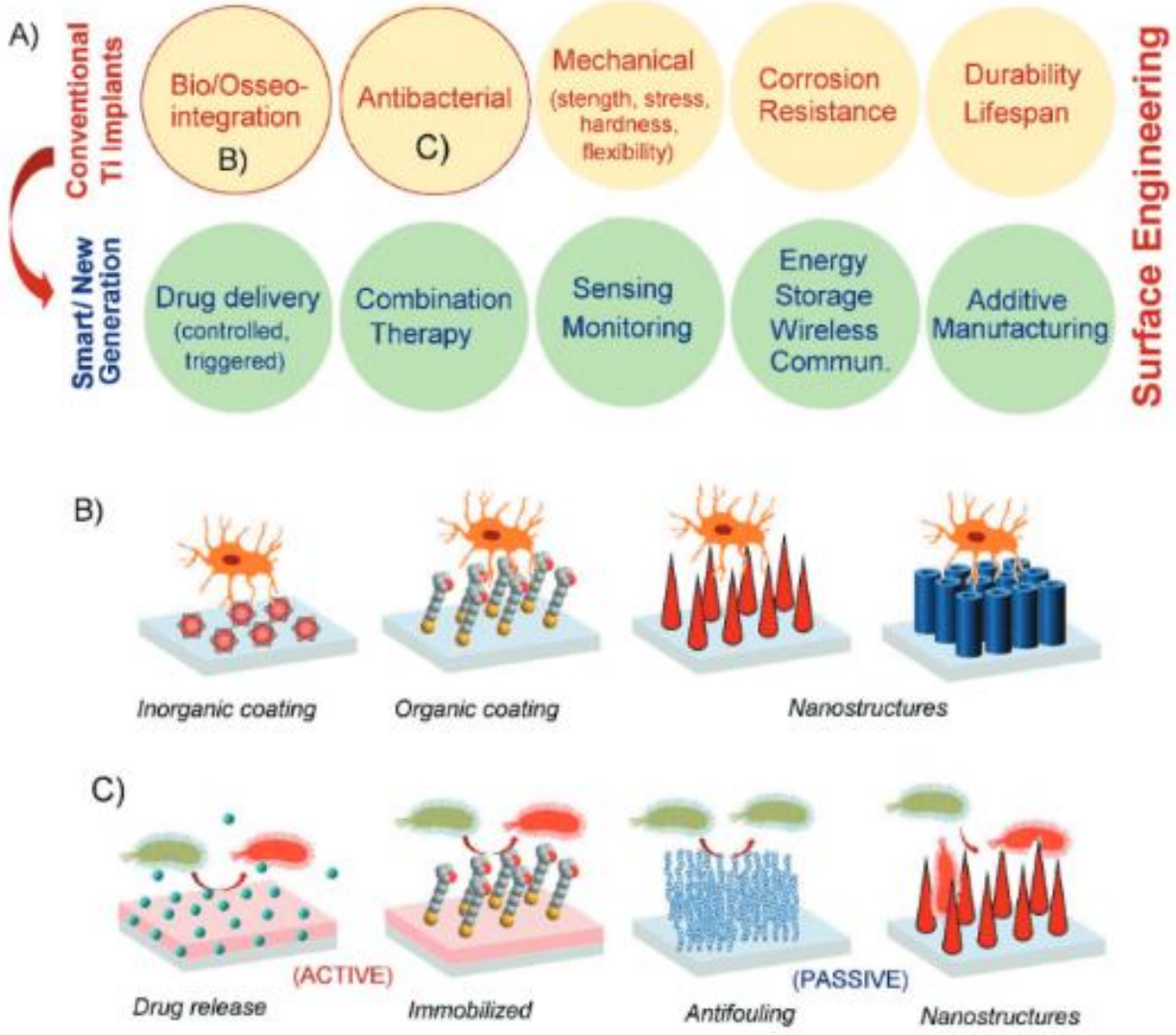
EXPERT OPINION ON DRUG DELIVERY
2021, VOL. 18, NO. 10, 1355–1378
https://doi.org/10.1080/17425247.2021.1928071

Taylor & Francis
Taylor & Francis Group

REVIEW

Advancing of titanium medical implants by surface engineering: recent progress and challenges

Dusan Losic[a,b]

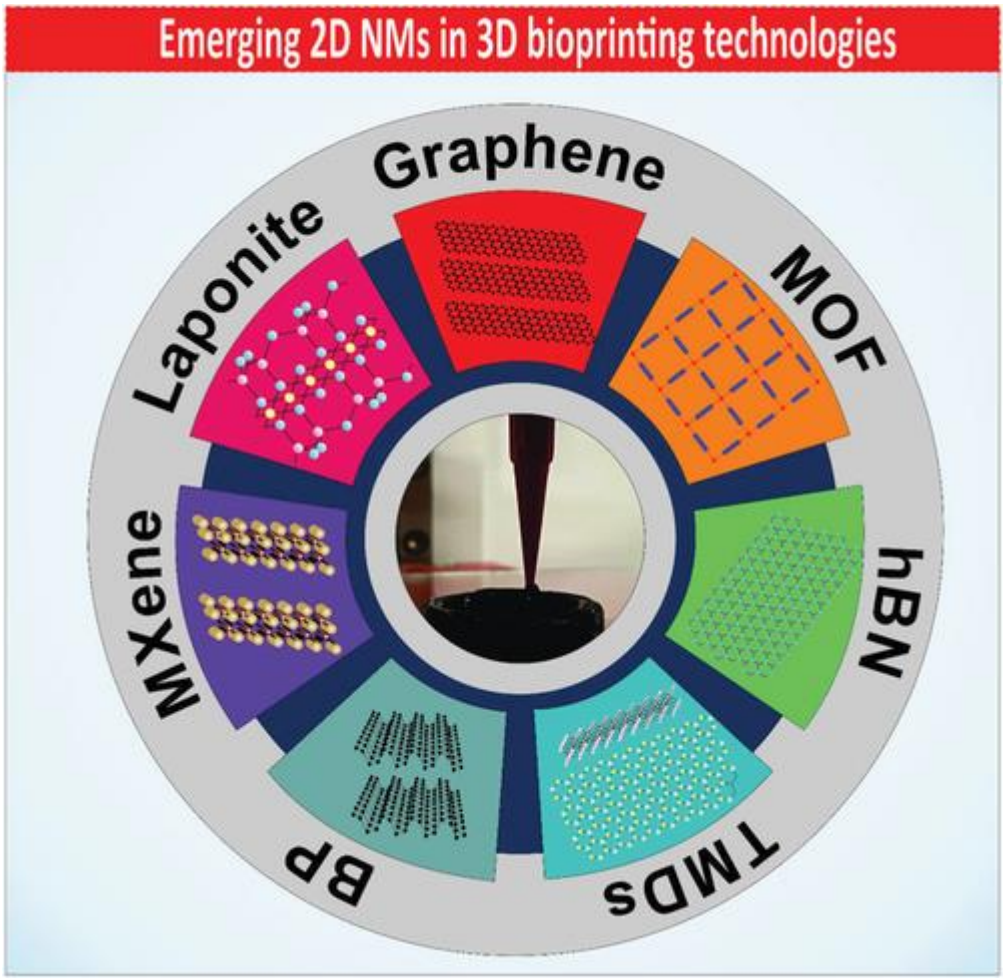


REVIEW

ADVANCED HEALTHCARE MATERIALS
www.advhealthmat.de

Converging 2D Nanomaterials and 3D Bioprinting Technology: State-of-the-Art, Challenges, and Potential Outlook in Biomedical Applications

*Hadi Rastin, Negar Mansouri, Tran Thanh Tung, Kamrul Hassan, Arash Mazinani, Mahnaz Ramezanpour, Pei Lay Yap, Le Yu, Sarah Vreugde, and Dusan Losic**



ACS Biomaterials SCIENCE & ENGINEERING

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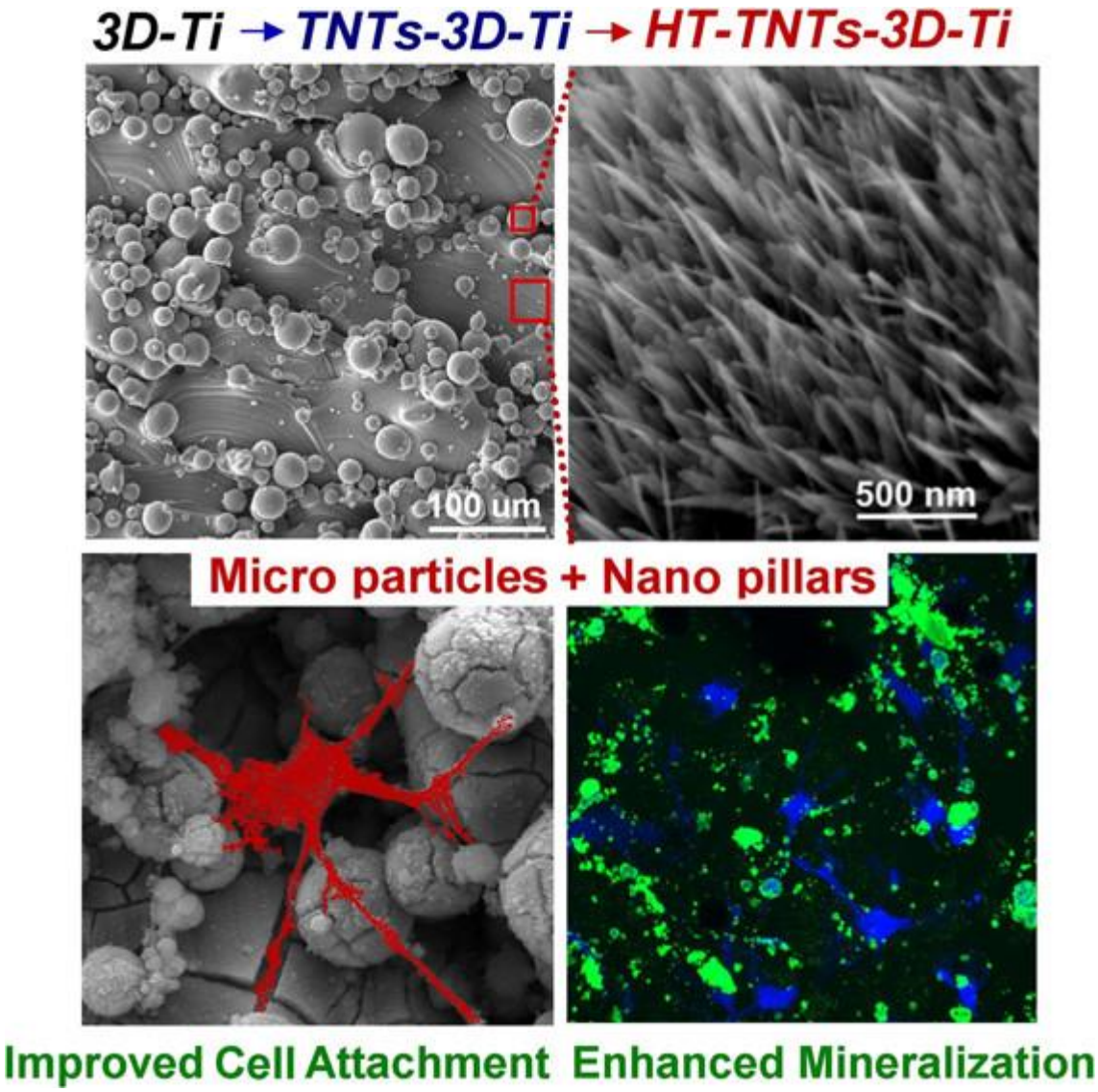
Article

Advancing of Additive-Manufactured Titanium Implants with Bioinspired Micro- to Nanotopographies

Shaheer Maher, Asiri R. Wijenayaka, Luis Lima-Marques, Dongqing Yang, Gerald J. Atkins, and Dusan Losic*



Carbohydrate Polymers 264 (2021) 117989

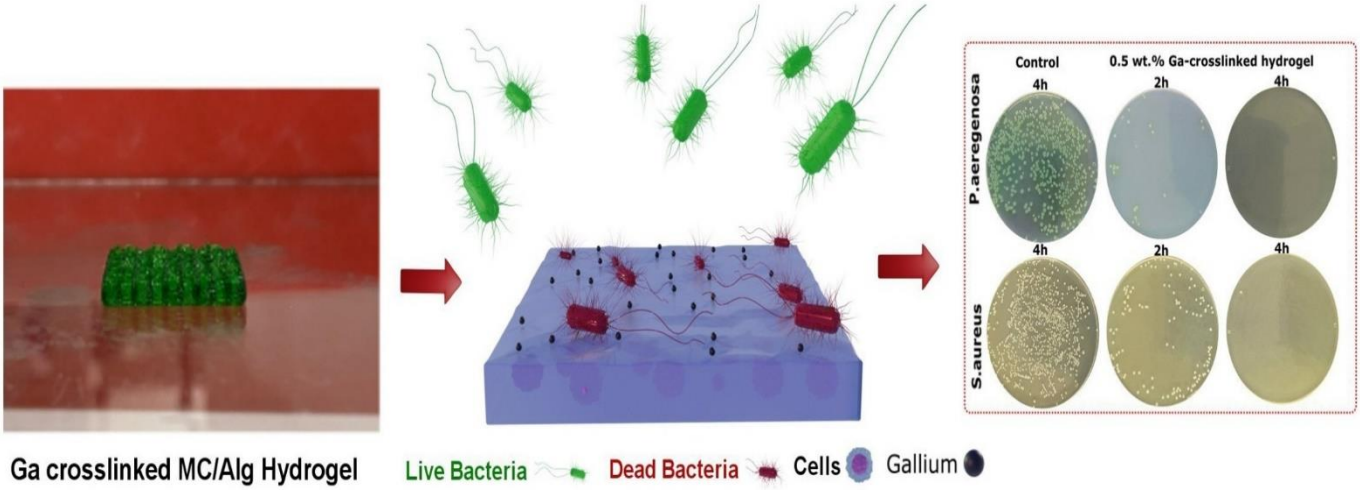
Contents lists available at ScienceDirect

Carbohydrate Polymers

journal homepage: www.elsevier.com/locate/carbpol

3D bioprinting of a cell-laden antibacterial polysaccharide hydrogel composite

Hadi Rastin [a,b], Mahnaz Ramezanpour [c], Kamrul Hassan [a,b], Arash Mazinani [a,b], Tran Thanh Tung [a,b], Sarah Vreugde [c], Dusan Losic [a,b,*]



Carbon 179 (2021) 505–513

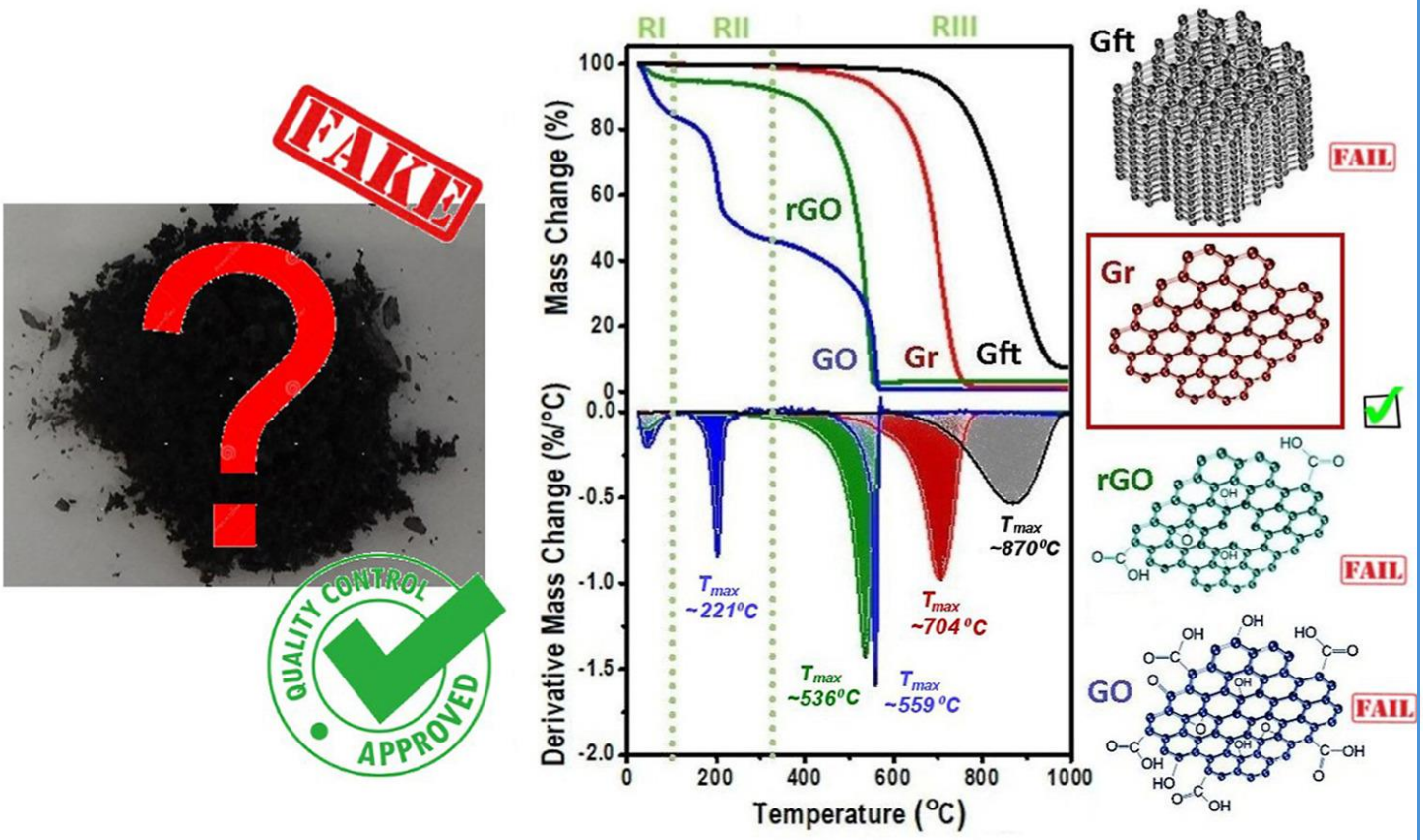
Contents lists available at ScienceDirect

Carbon

journal homepage: www.elsevier.com/locate/carbon

Unlocking thermogravimetric analysis (TGA) in the fight against "Fake graphene" materials

Farzaneh Farivar [a, b, 1], Pei Lay Yap [a, b, 1], Kamrul Hassan [a, b], Tran Thanh Tung [a, b], Diana N.H. Tran [a, b], Andrew J. Pollard [c], Dusan Losic [a, b, *]



Analytica Chimica Acta 1159 (2021) 338439

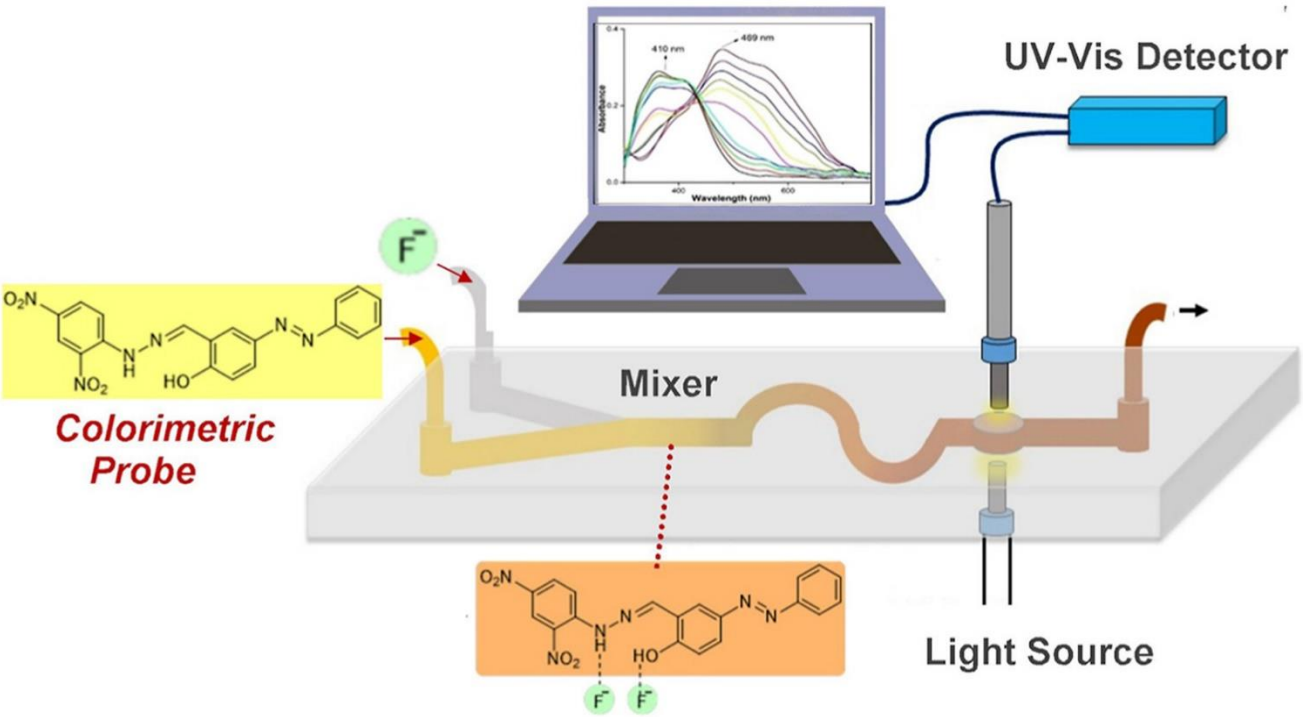
Contents lists available at ScienceDirect

Analytica Chimica Acta

journal homepage: www.elsevier.com/locate/aca

New optofluidic based lab-on-a-chip device for the real-time fluoride analysis

Mahesh P. Bhat [a], Mahaveer Kurkuri [a, *], Dusan Losic [b, **], Madhuprasad Kigga [a], Tariq Altalhi [c]



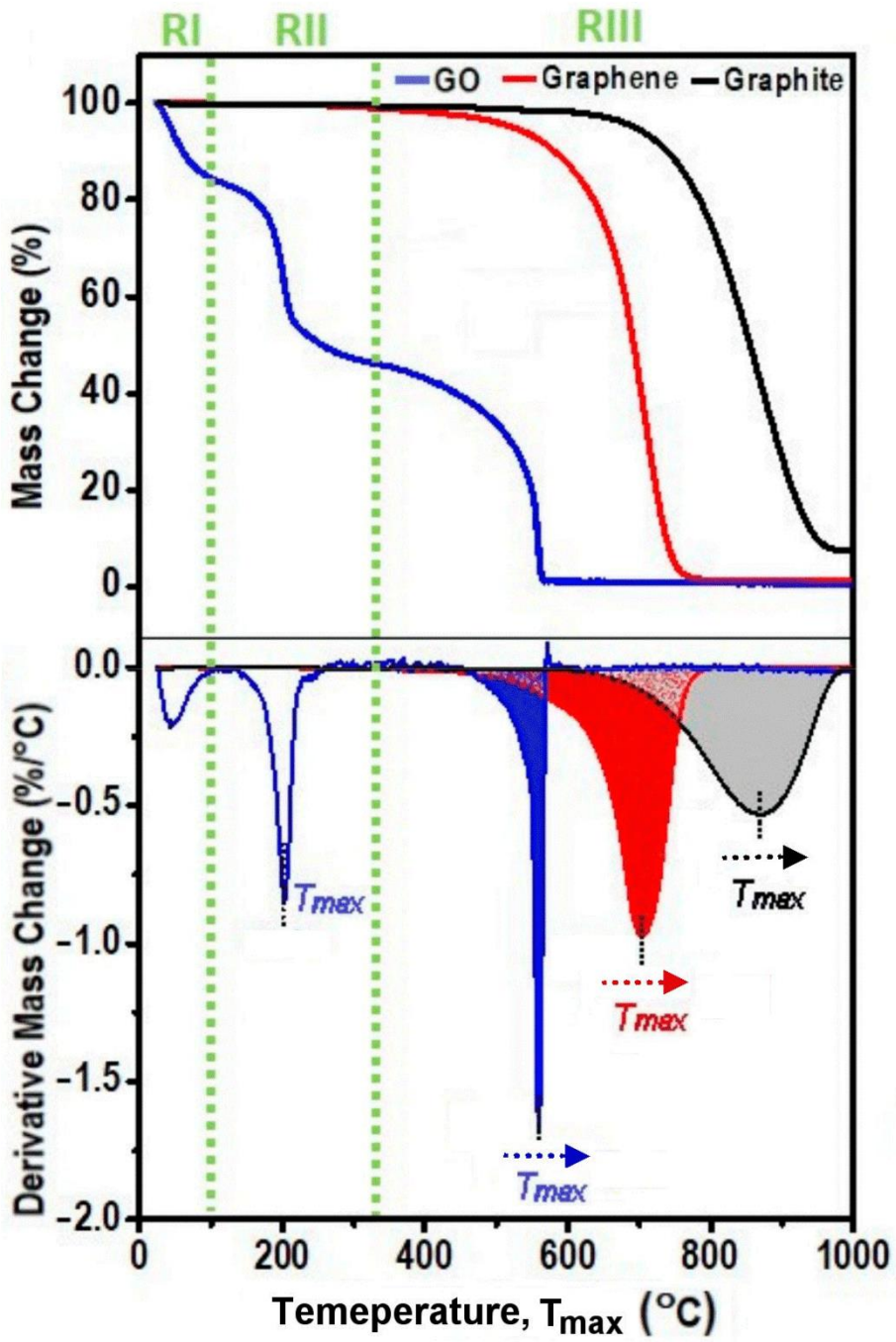
C Journal of Carbon Research

MDPI

Article

Thermogravimetric Analysis (TGA) of Graphene Materials: Effect of Particle Size of Graphene, Graphene Oxide and Graphite on Thermal Parameters

Farzaneh Farivar [1,2,†], Pei Lay Yap [1,2,†], Ramesh Udayashankar Karunagaran [1,2] and Dusan Losic [1,2,*]

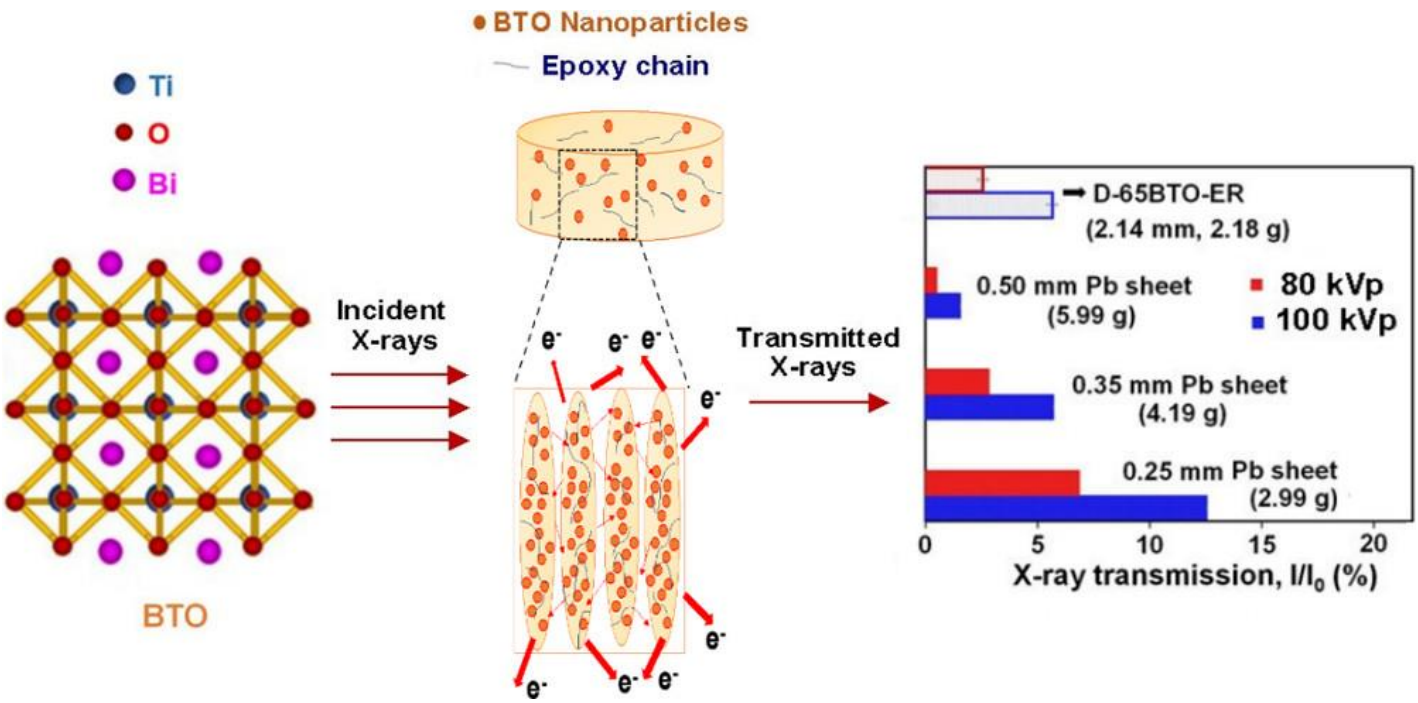


ACS APPLIED NANO MATERIALS

www.acsanm.org Article

Lightweight Bismuth Titanate ($Bi_4Ti_3O_{12}$) Nanoparticle-Epoxy Composite for Advanced Lead-Free X-ray Radiation Shielding

Le Yu, Pei Lay Yap, Alexandre Santos, Diana Tran, and Dusan Losic*



ACS SENSORS

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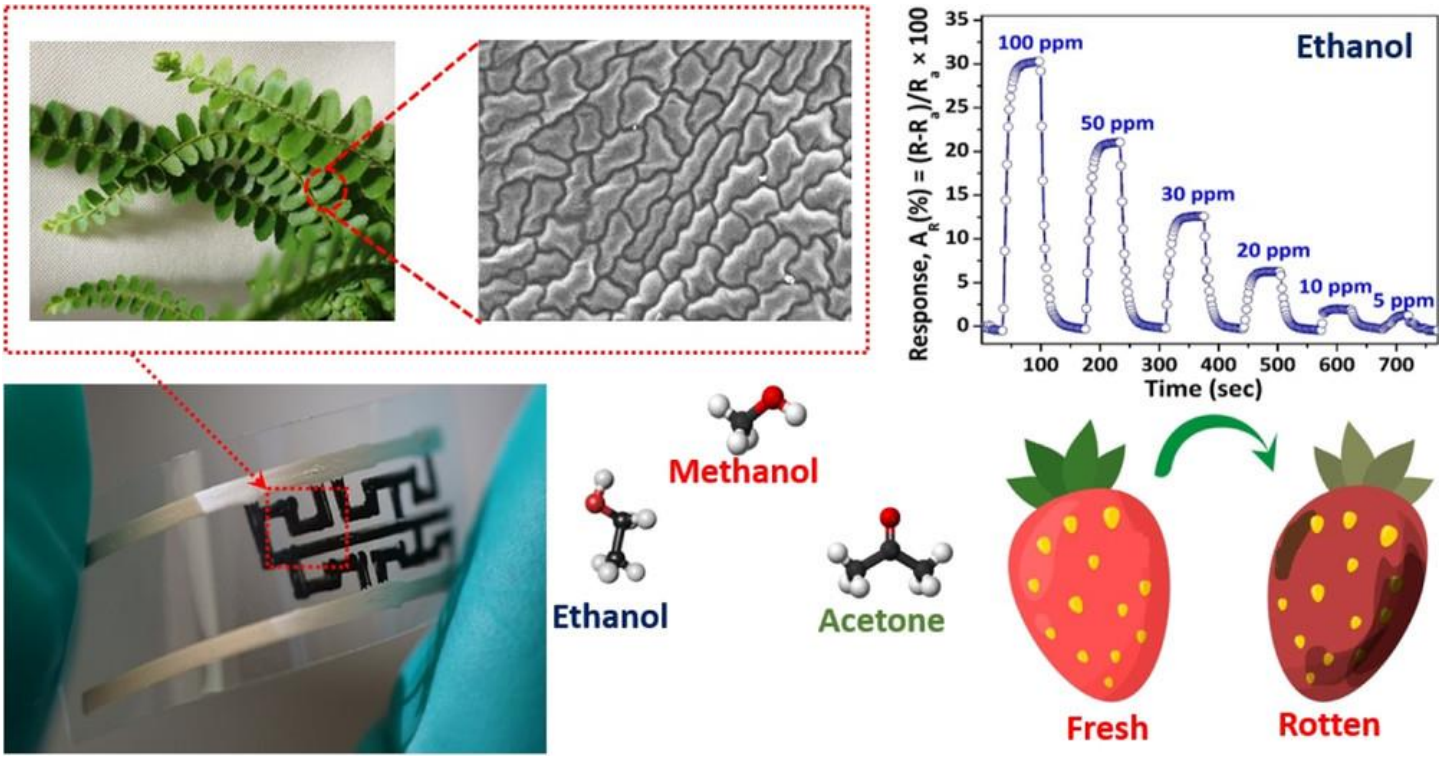
Article

Fractal Design for Advancing the Performance of Chemoresistive Sensors

Kamrul Hassan, Tran Thanh Tung, Pei Lay Yap, Hadi Rastin, Nathan Stanley, Md. Julker Nine, and Dusan Losic*

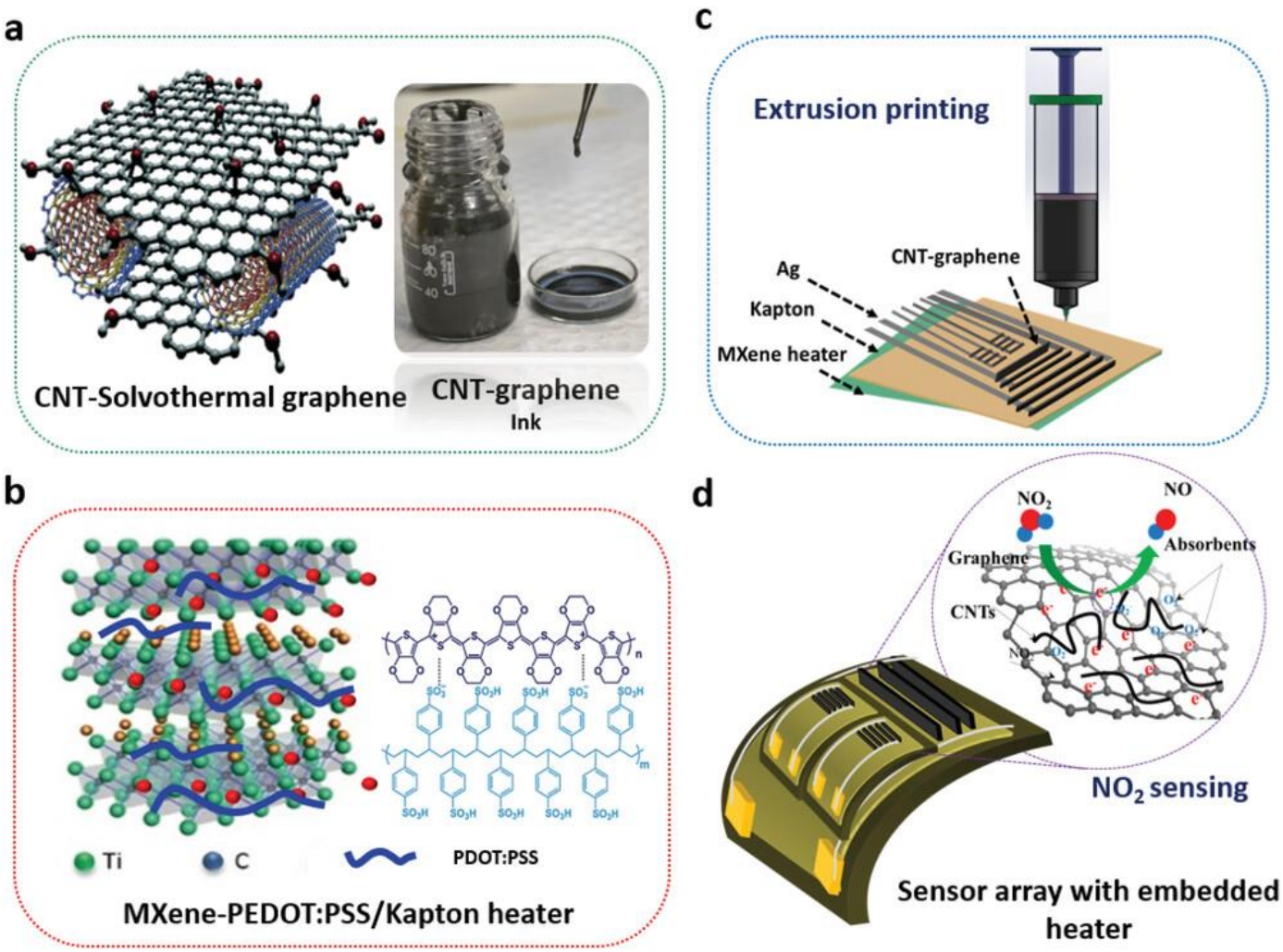


RESEARCH ARTICLE

ADVANCED MATERIALS INTERFACES
www.advmatinterfaces.de

Extrusion-Printed CNT–Graphene Sensor Array with Embedded MXene/PEDOT:PSS Heater for Enhanced NO_2 Sensing at Low Temperature

*Kamrul Hassan, Nathan Stanley, Tran Thanh Tung, Pei Lay Yap, Hadi Rastin, Le Yu, and Dusan Losic**



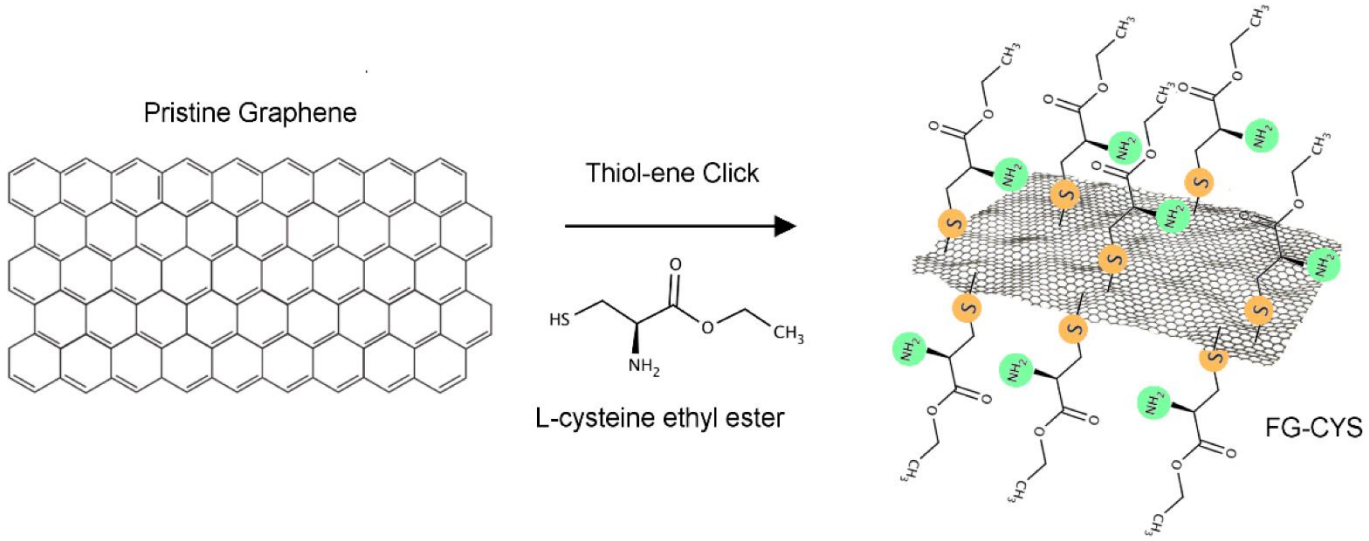
materials

MDPI

Article

Highly Water Dispersible Functionalized Graphene by Thermal Thiol-Ene Click Chemistry

Farzaneh Farivar [1,2], Pei Lay Yap [1,2], Tran Thanh Tung [1,2] and Dusan Losic [1,2,*]



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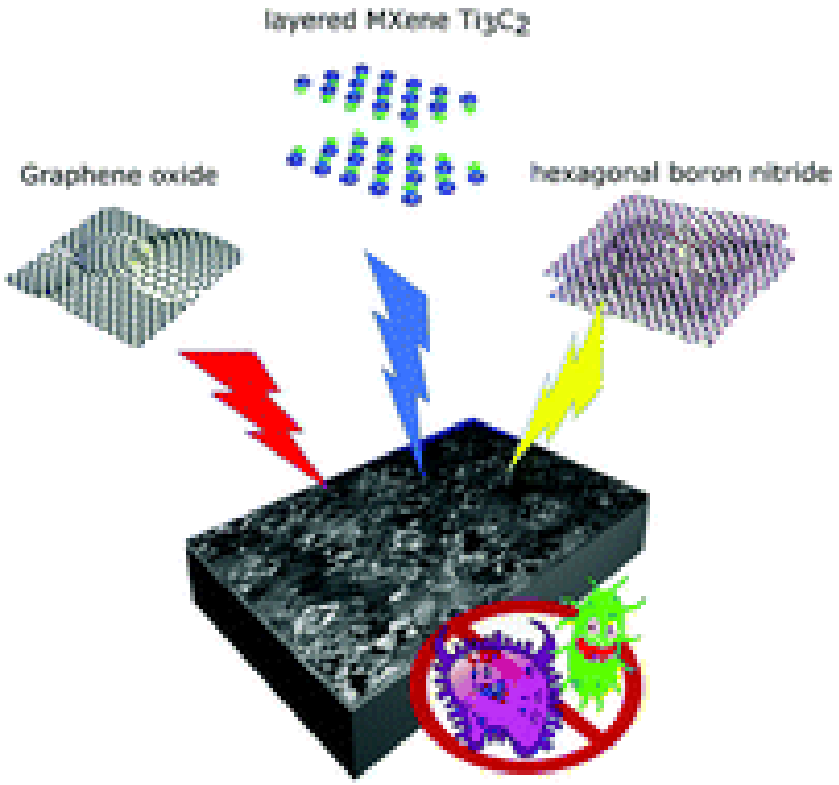
Cite this: *J. Mater. Chem. B*, 2021, 9, 6412

Comparative antibacterial activity of 2D materials coated on porous-titania†

Arash Mazinani,[ab] Hadi Rastin,[ab] Md Julker Nine,[ab] James Lee,[c] Alexandra Tikhomirova,[c] Tran Thanh Tung,[ab] Reza Ghomashchi,[bd] Stephen Kidd,[c] Sarah Vreugde[e] and Dusan Losic*[ab]



analytical chemistry

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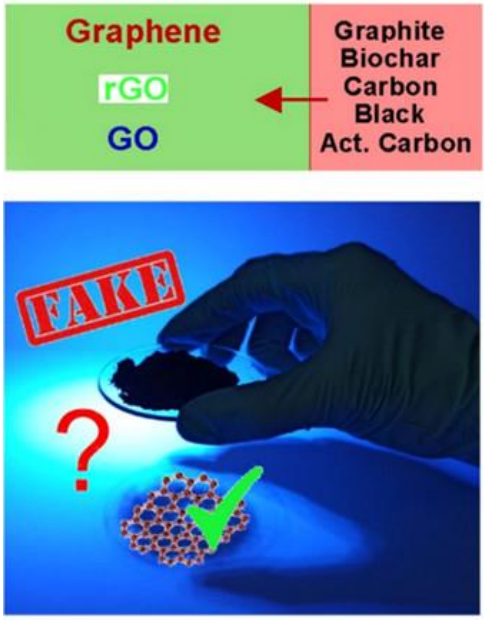
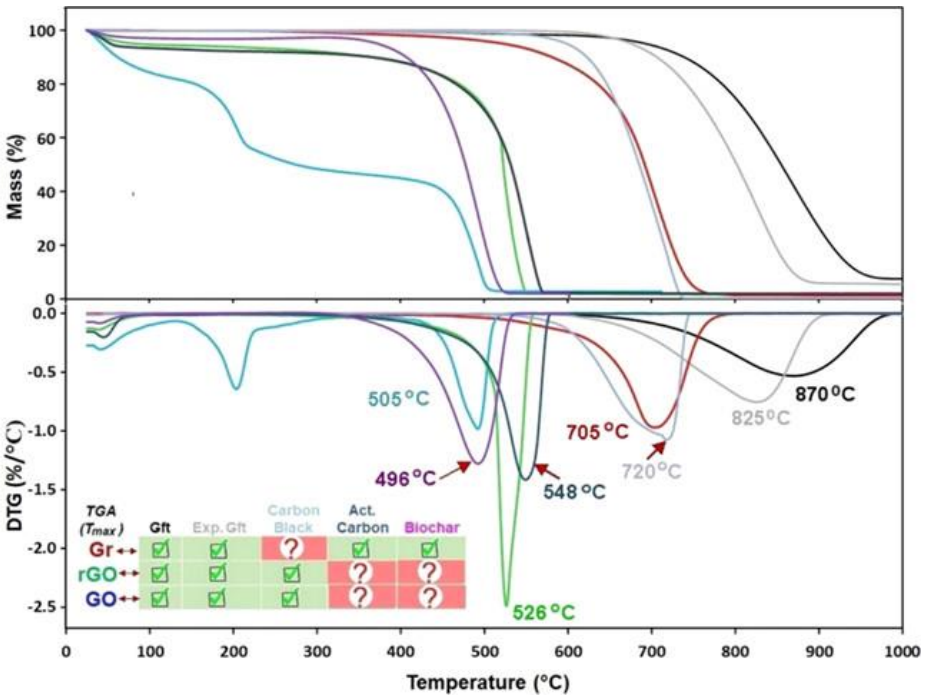
Article

Accounting Carbonaceous Counterfeits in Graphene Materials Using the Thermogravimetric Analysis (TGA) Approach

Dusan Losic,* Farzaneh Farivar, Pei Lay Yap, and Afshin Karami





Materials Science & Engineering R 146 (2021) 100647

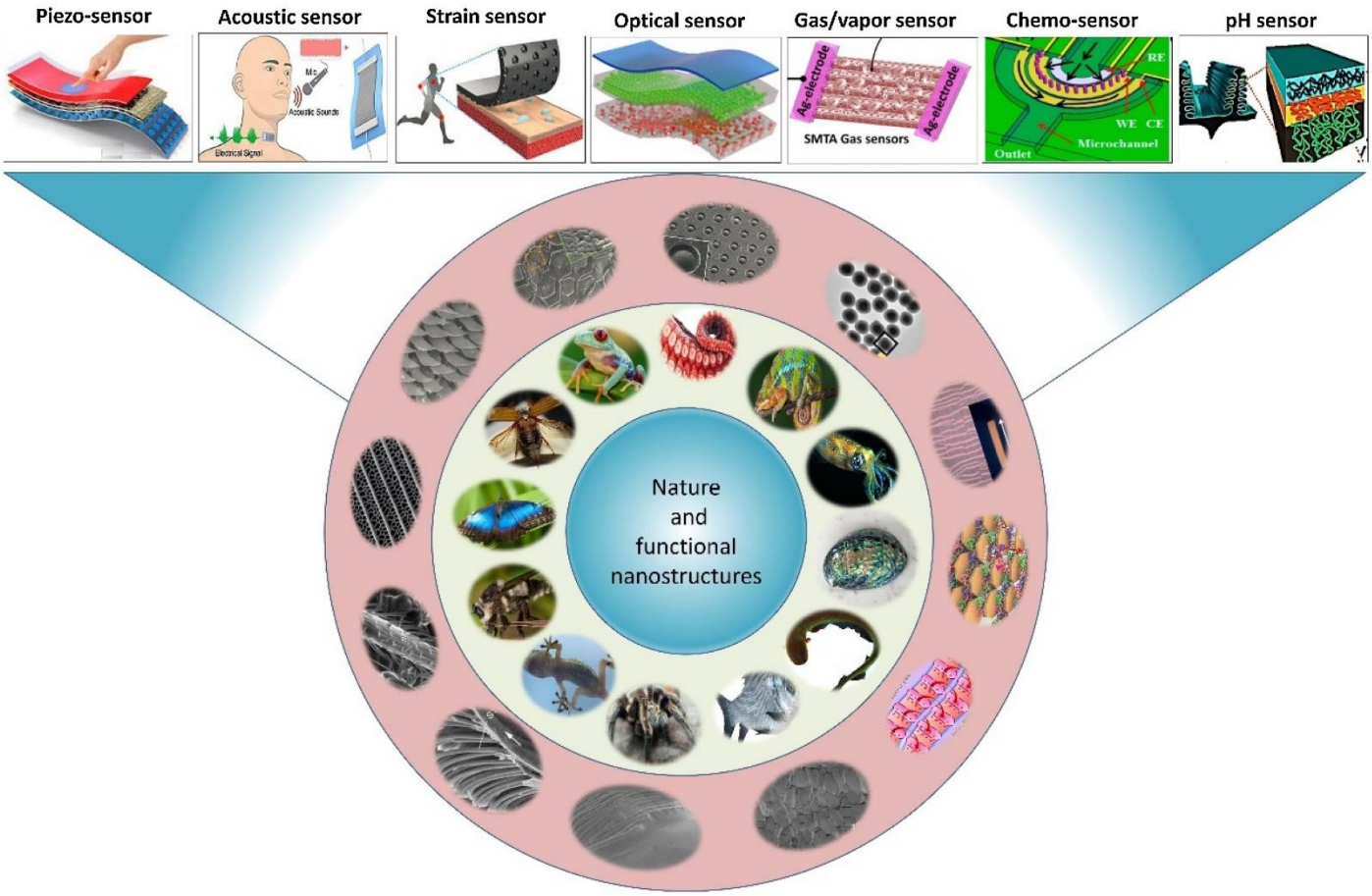
Contents lists available at ScienceDirect

Materials Science & Engineering R

journal homepage: www.elsevier.com/locate/mser

Nature inspired emerging sensing technology: Recent progress and perspectives

Ashis Tripathy [a,*], Md Julker Nine [b], Dusan Losic [b,*], Filipe Samuel Silva [a]



Materials Today Energy 21 (2021) 100757

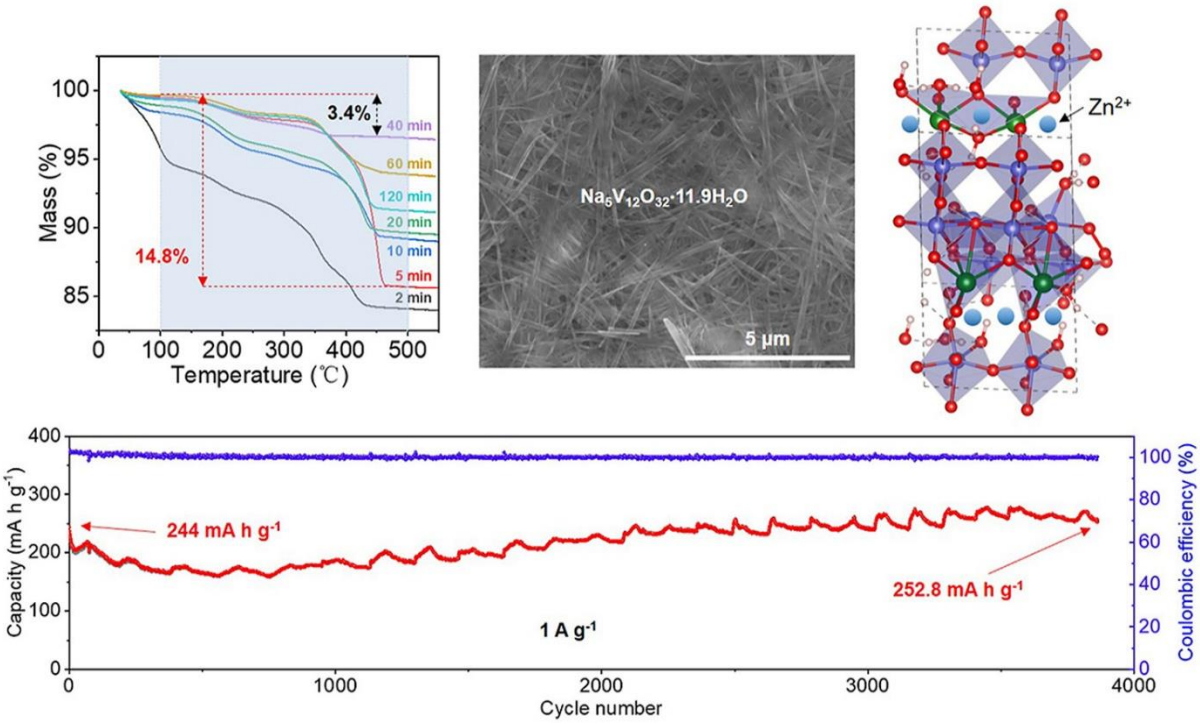
Contents lists available at ScienceDirect

Materials Today Energy

journal homepage: www.journals.elsevier.com/materials-today-energy/

Maximized crystal water content and charge-shielding effect in layered vanadate render superior aqueous zinc-ion battery

H. Yu [a], M. Aakyiir [a], S. Xu [a], J.D. Whittle [a], D. Losic [b], J. Ma [a,*]



Reaction Chemistry & Engineering

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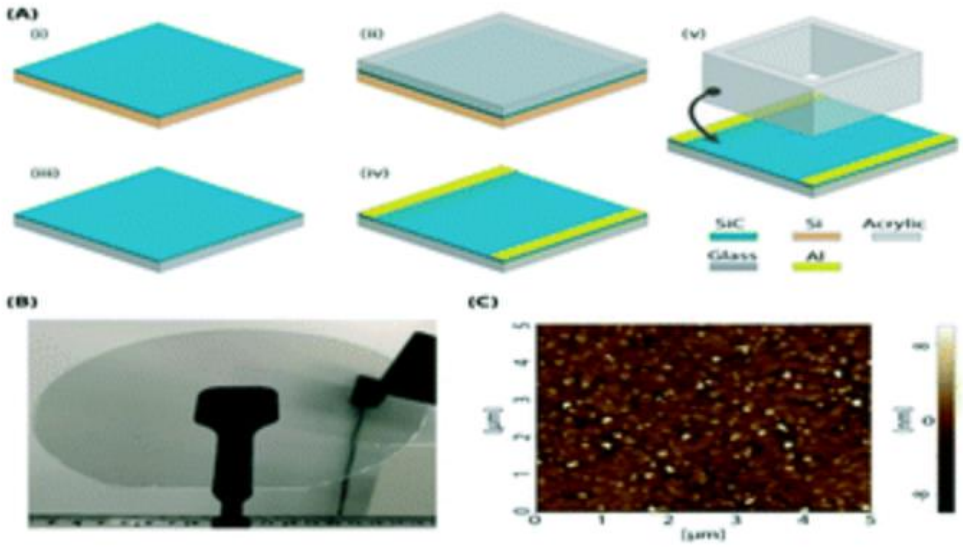
Toward on-board microchip synthesis of CdSe *vs.* PbSe nanocrystalline quantum dots as a spectral decoy for protecting space assets



Applied Materials Today 20 (2020) 100764

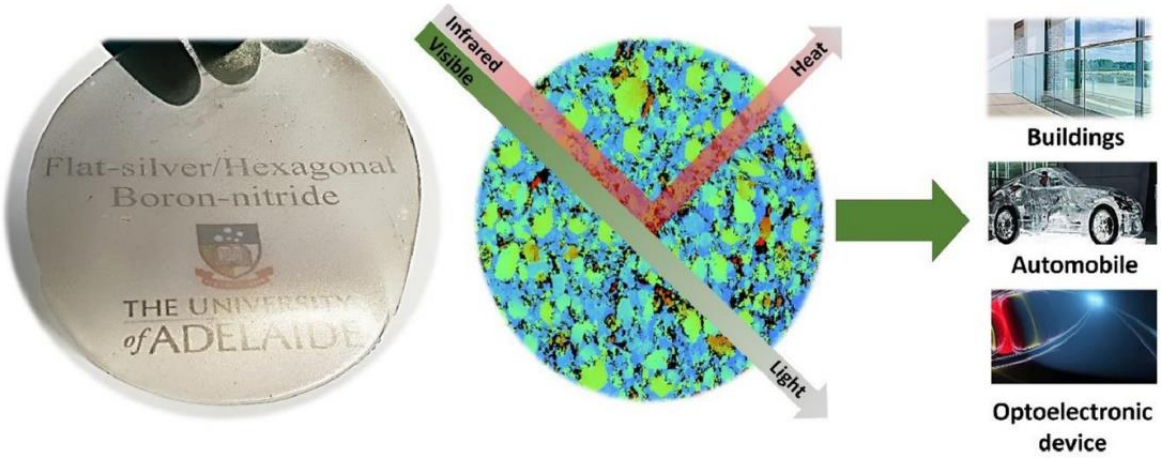
Contents lists available at ScienceDirect

Applied Materials Today

journal homepage: www.elsevier.com/locate/apmt

Cross-overlapped flat-silver/hexagonal boron nitride for translucent heat-reflective coatings

Md J. Nine[a,b,*], Ay Ching Hee[a,b], Tran Thanh Tung[a,b], Kamrul Hassan[a,b], Dusan Losic[a,b,*]



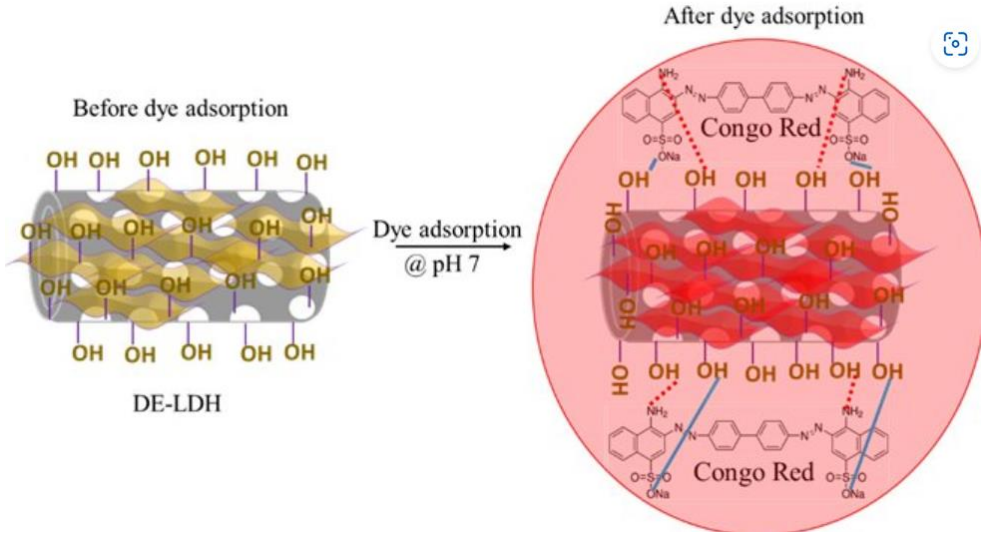
applied sciences

MDPI

Article

Mg–Al-Layered Double Hydroxide (LDH) Modified Diatoms for Highly Efficient Removal of Congo Red from Aqueous Solution

Ganesan Sriram [1], U. T. Uthappa [1], Dusan Losic [2,*], Madhuprasad Kigga [1,*], Ho-Young Jung [3] and Mahaveer D. Kurkuri [1,*]



Carbon 159 (2020) 333–344

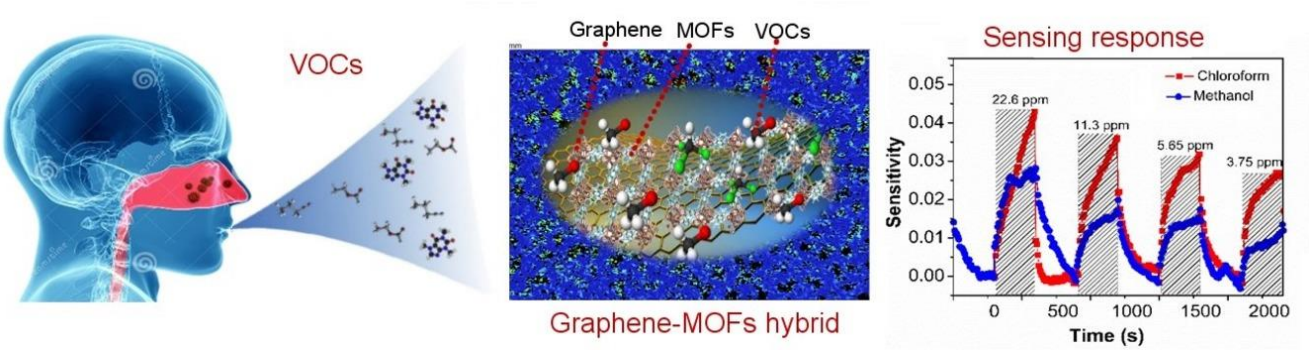
Contents lists available at ScienceDirect

Carbon

journal homepage: www.elsevier.com/locate/carbon

Graphene and metal organic frameworks (MOFs) hybridization for tunable chemoresistive sensors for detection of volatile organic compounds (VOCs) biomarkers

Tran Thanh Tung [a, b], Manh Trung Tran [c, d], Jean-François Feller [c], Mickael Castro [c], Truc Van Ngo [a, b], Kamrul Hassan [a, b], Md J. Nine [a, b], Dusan Losic [a, b, *]



Analytica Chimica Acta 1138 (2020) 49–58

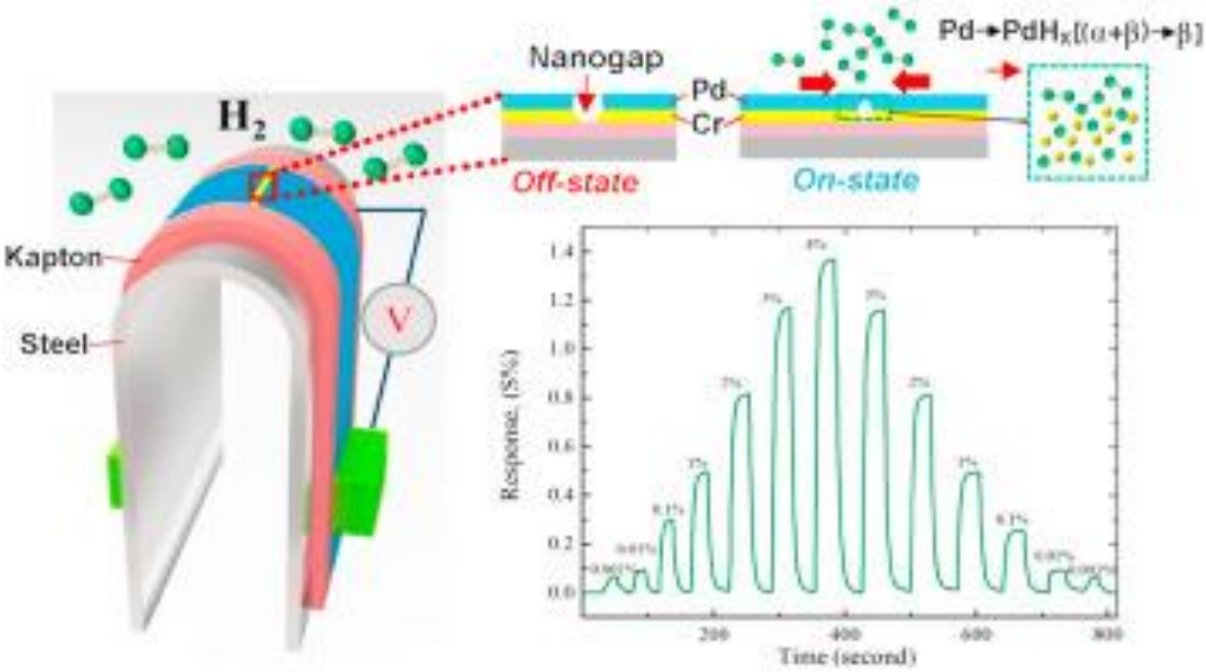
Contents lists available at ScienceDirect

Analytica Chimica Acta

journal homepage: www.elsevier.com/locate/aca

Fast response hydrogen gas sensor based on Pd/Cr nanogaps fabricated by a single-step bending deformation

Kamrul Hassan [a, b], Tran Thanh Tung [a, b], Pei Lay Yap [a, b], Md J. Nine [a, b], Hyeon C. Kim [c], Dusan Losic [a, b, *]



Nanoscale

ROYAL SOCIETY OF CHEMISTRY

REVIEW

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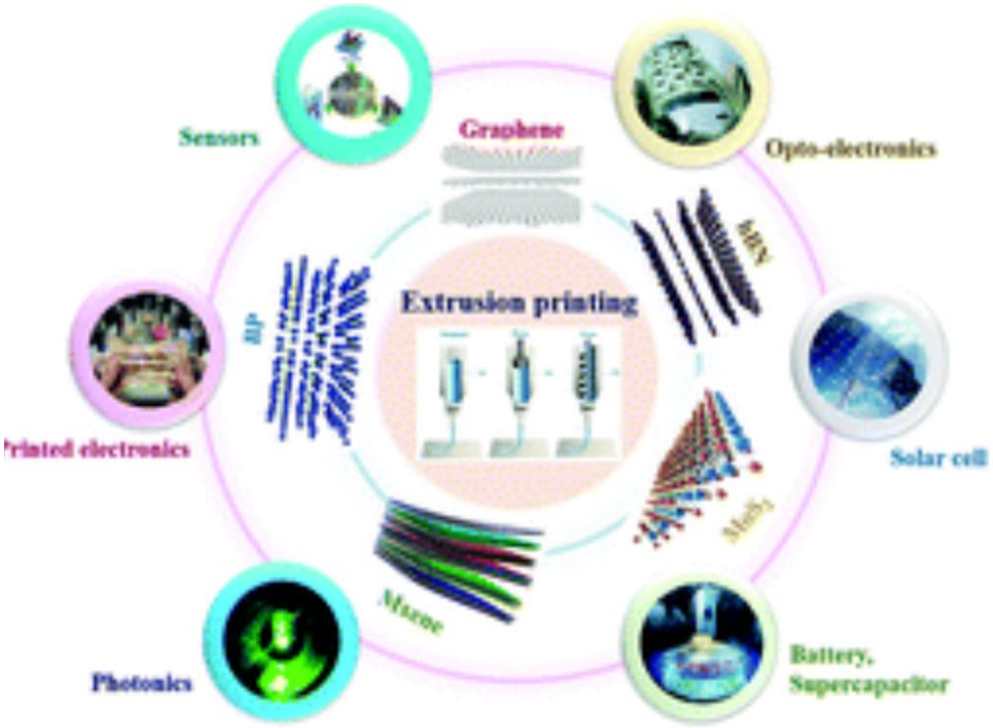
Functional inks and extrusion-based 3D printing of 2D materials: a review of current research and applications



Carbon 168 (2020) 564–579

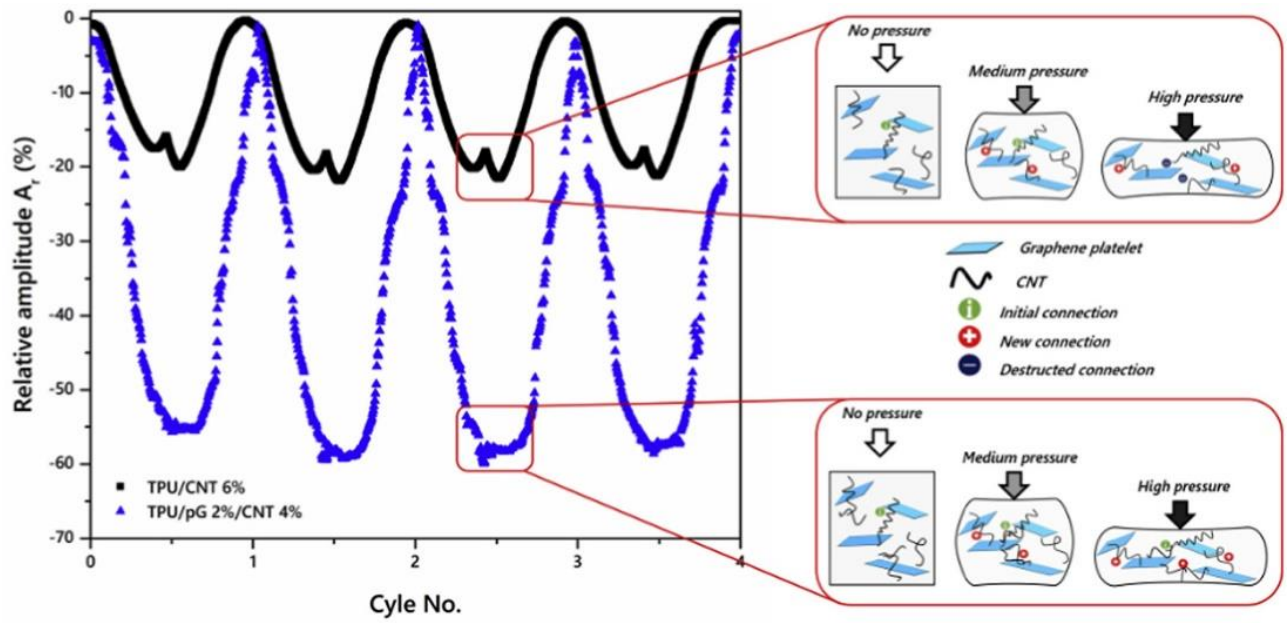
Contents lists available at ScienceDirect

Carbon

journal homepage: www.elsevier.com/locate/carbon

3D sprayed polyurethane functionalized graphene / carbon nanotubes hybrid architectures to enhance the piezo-resistive response of quantum resistive pressure sensors

M.T. Tran [a, c], T.T. Tung [b, d], A. Sachan [a], D. Losic [b, d], M. Castro [a], J.F. Feller [a, *]

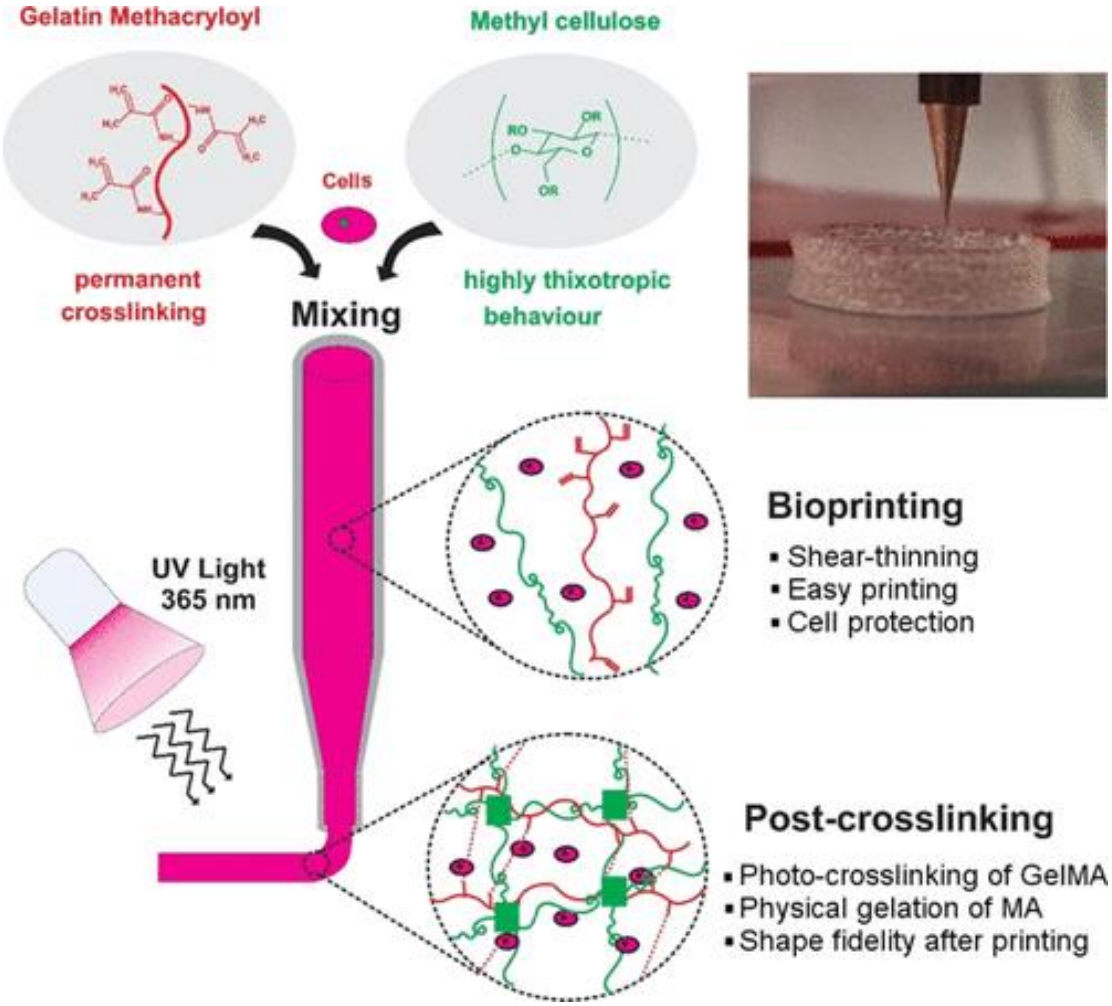


ACS APPLIED BIO MATERIALS

www.acsabm.org Article

3D Bioprinting of Methylcellulose/Gelatin-Methacryloyl (MC/GelMA) Bioink with High Shape Integrity

Hadi Rastin, Renee T. Ormsby, Gerald J. Atkins, and Dusan Losic*



Chemical Engineering Journal 397 (2020) 125439

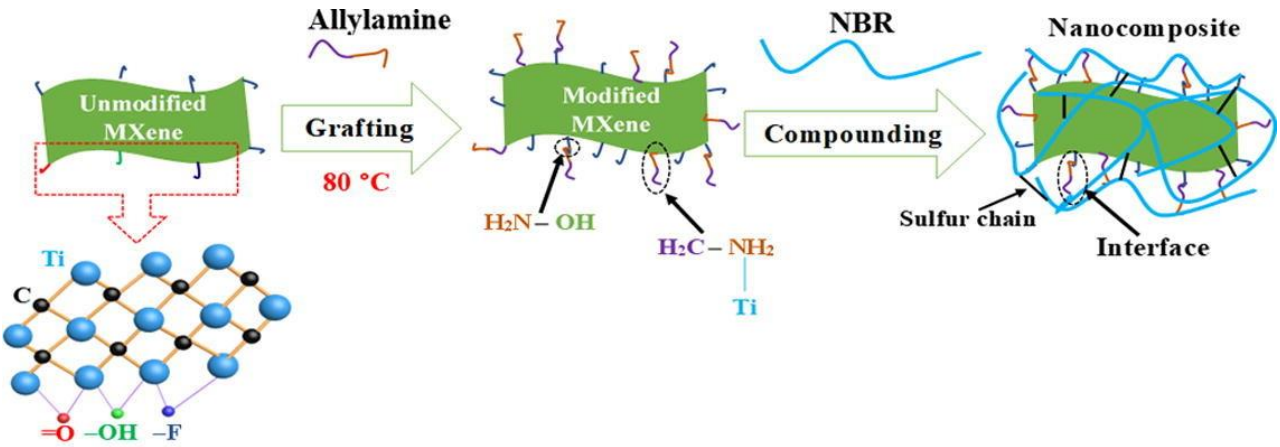
Contents lists available at ScienceDirect

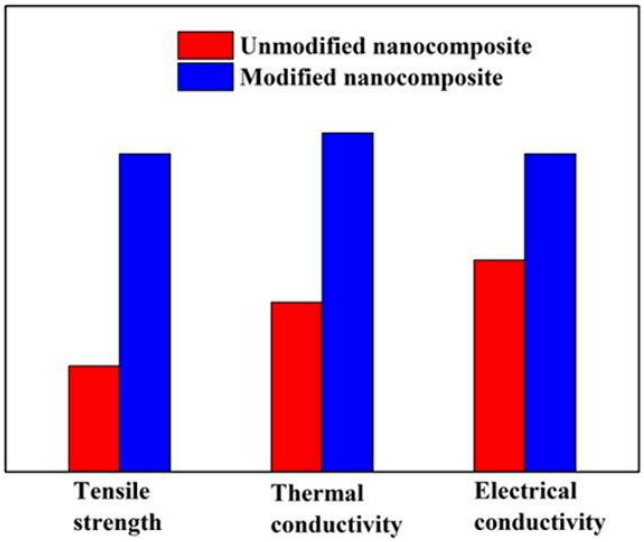
Chemical Engineering Journal

journal homepage: www.elsevier.com/locate/cej

Electrically and thermally conductive elastomer by using MXene nanosheets with interface modification

Mathias Aakyiir[a], Huimin Yu[a], Sherif Araby[a,b], Wang Ruoyu[a], Andrew Michelmore[a,c], Qingshi Meng[d], Dusan Losic[e], Namita Roy Choudhury[f], Jun Ma[a,c,*]





Applied Surface Science 528 (2020) 146974

Contents lists available at ScienceDirect

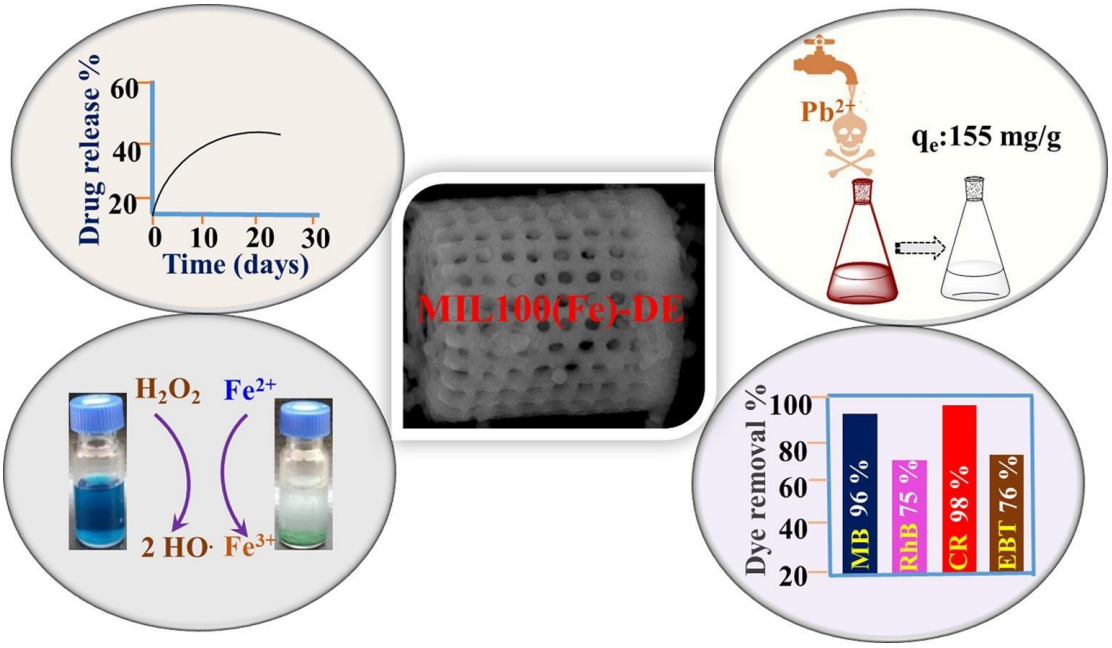
Applied Surface Science

journal homepage: www.elsevier.com/locate/apsusc

Full Length Article

Engineering MIL-100(Fe) on 3D porous natural diatoms as a versatile high performing platform for controlled isoniazid drug release, Fenton's catalysis for malachite green dye degradation and environmental adsorbents for Pb^{2+} removal and dyes

U.T. Uthappa[a], G. Sriram[a], O.R. Arvind[a], Sandeep Kumar[b], Ho-Young-Jung[c], Gururaj M. Neelgund[d], Dusan Losic[e,f,*], Mahaveer D. Kurkuri[a,*]



Materials Today Advances 6 (2020) 100053

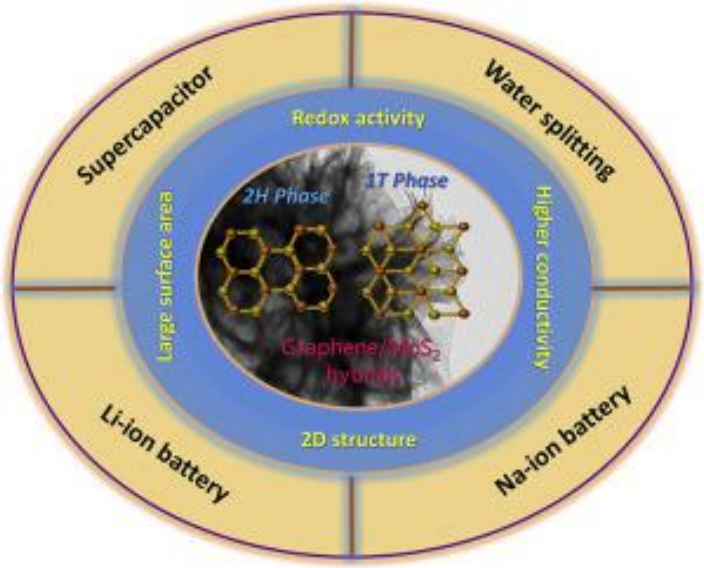
Contents lists available at ScienceDirect

Materials Today Advances

journal homepage: www.journals.elsevier.com/materials-today-advances/

Graphene and molybdenum disulphide hybrids for energy applications: an update

N.R. Chodankar [a], A.K. Nanjundan [b,*], D. Losic [c], D.P. Dubal [d,**], J.-B. Baek [e,***]



Chemical Engineering Journal 383 (2020) 123156

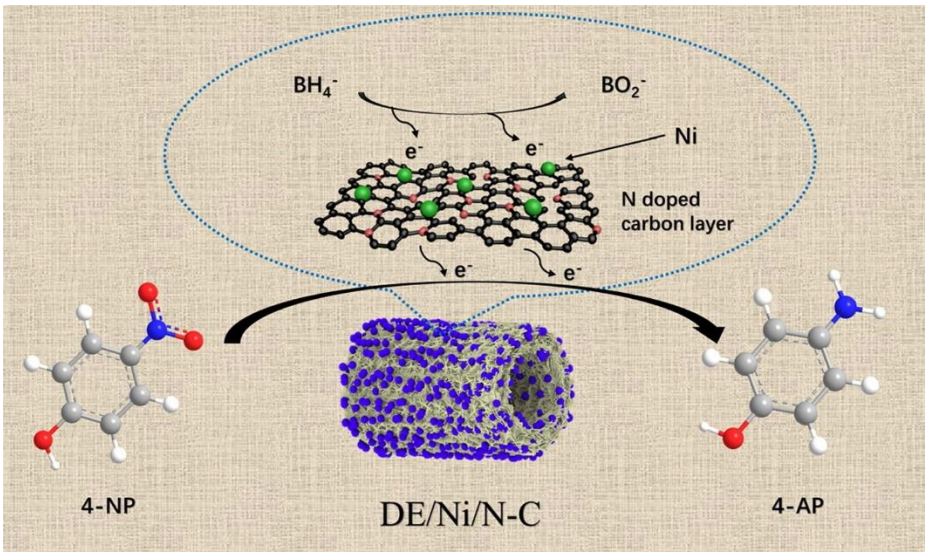
Contents lists available at ScienceDirect

Chemical Engineering Journal

journal homepage: www.elsevier.com/locate/cej

Biotemplated top-down assembly of hybrid Ni nanoparticles/N doping carbon on diatomite for enhanced catalytic reduction of 4-nitrophenol

De Bin Jiang[a], Xiaoying Liu[b], Yunsong Yuan[c], Li Feng[a,d], Junyi Ji[e], Jinshu Wang[f], Dusan Losic[g], Hong-Chang Yao[h], Yu Xin Zhang[a,*]



Powder Technology 360 (2020) 588–597

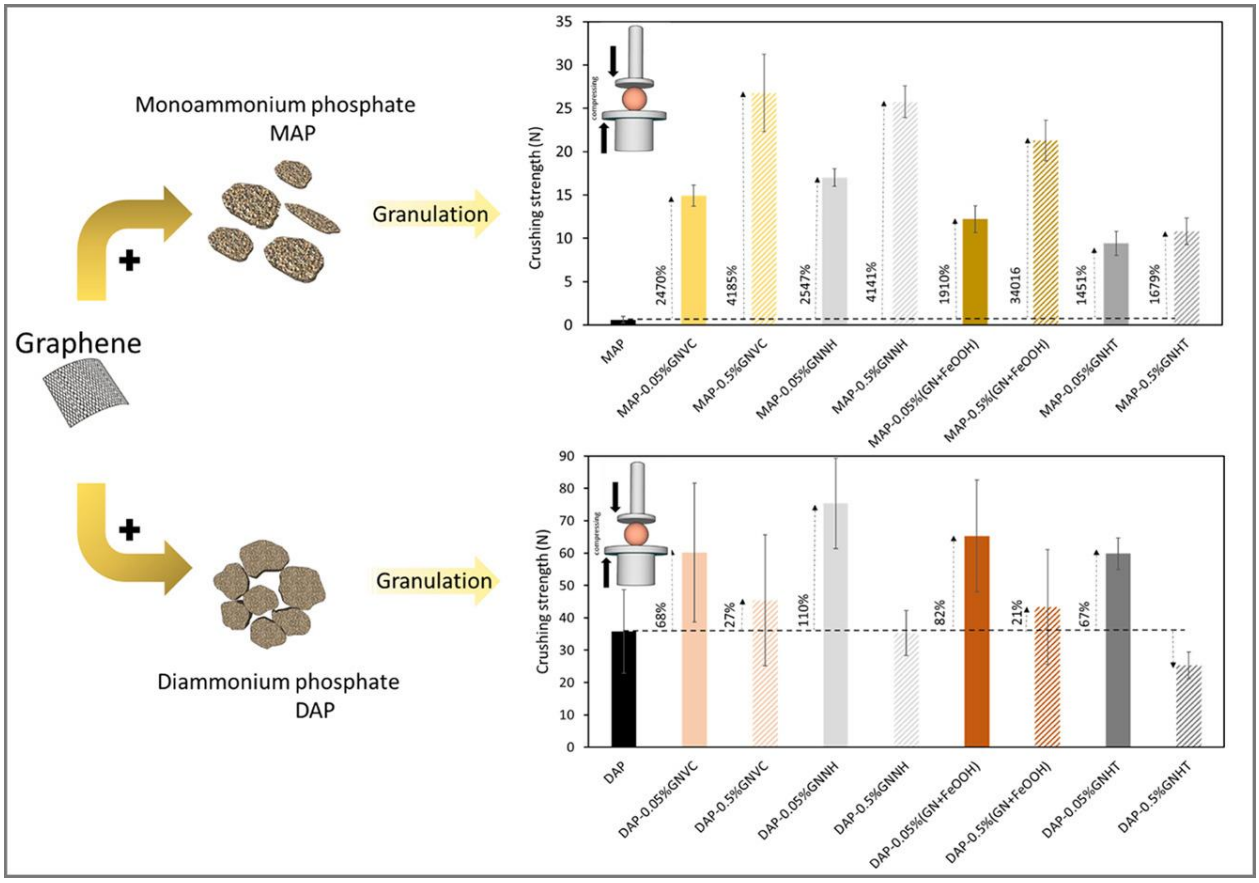
Contents lists available at ScienceDirect

Powder Technology

journal homepage: www.elsevier.com/locate/powtec

Revealing the dependence of graphene concentration and physicochemical properties on the crushing strength of co-granulated fertilizers by wet granulation process

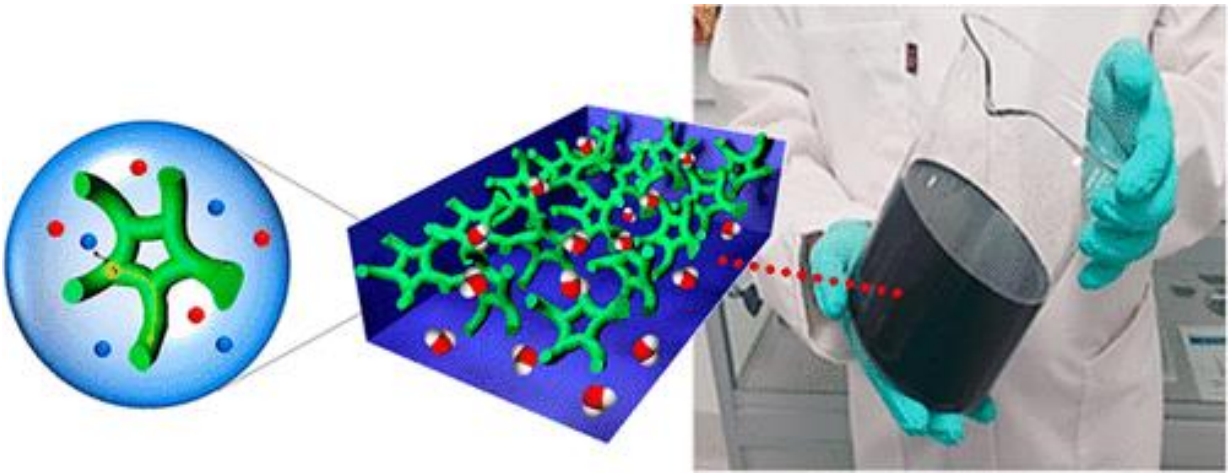
Shervin Kabiri [a,b], Diana N.H. Tran [a], Roslyn Baird [b], Mike J. McLaughlin [b,**], Dusan Losic [a,*]



ACS APPLIED ENERGY MATERIALS
Cite This: ACS Appl. Energy Mater. 2020, 3, 923−932
Article
www.acsaem.org

Self-Assembly and Cross-Linking of Conducting Polymers into 3D Hydrogel Electrodes for Supercapacitor Applications

Mahmoud Moussa,[†,‡,§] Maher F. El-Kady,[∥,⊥] Deepak Dubal,[%] Tran Thanh Tung,[†,‡] Md Julker Nine,[†,‡] Nahla Mohamed,[∥,#] Richard B. Kaner,[*,∥,⊥] and Dusan Losic[*,†,‡]



Chemical Engineering Journal 395 (2020) 124965

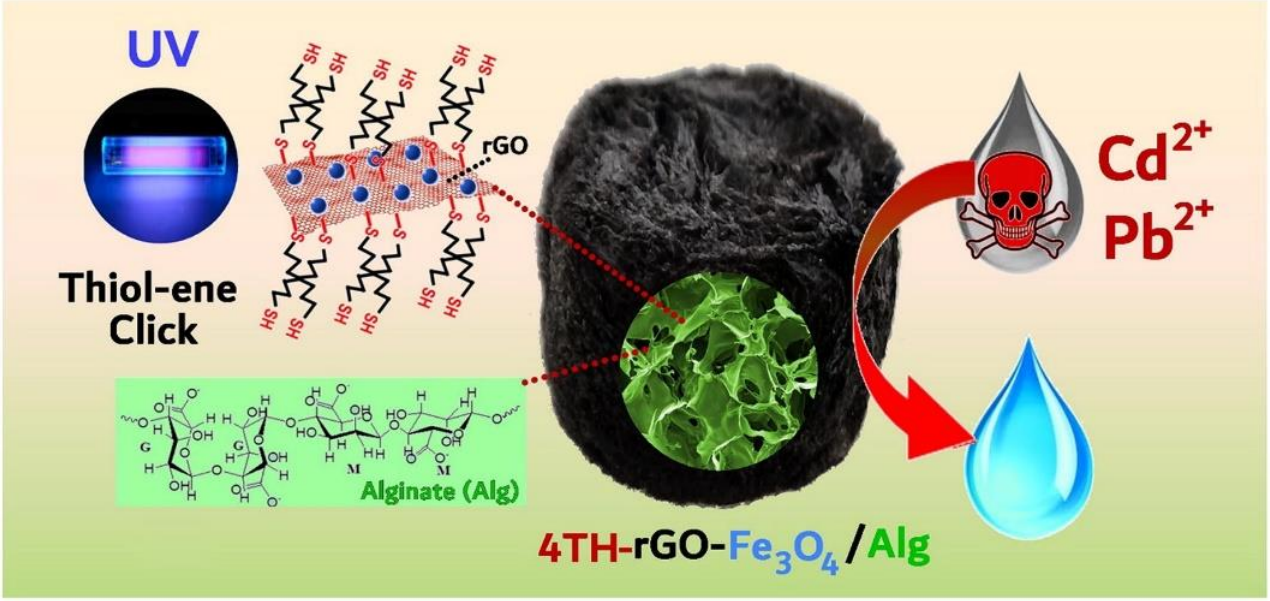
Contents lists available at ScienceDirect

Chemical Engineering Journal

journal homepage: www.elsevier.com/locate/cej

Multithiol functionalized graphene bio-sponge via photoinitiated thiol-ene click chemistry for efficient heavy metal ions adsorption

Pei Lay Yap[a,b], Yow Loo Auyoong[c], Kamrul Hassan[a,b], Farzaneh Farivar[a,b], Diana N.H. Tran[a,b], Jun Ma[b,d,e], Dusan Losic[a,b,*]



Separation and Purification Technology 238 (2020) 116441

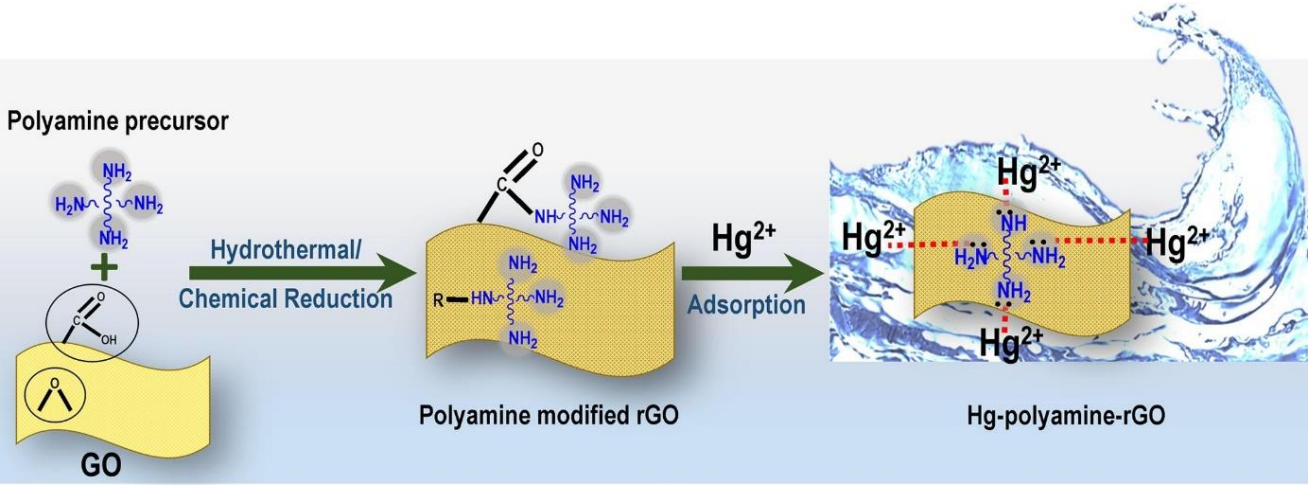
Contents lists available at ScienceDirect

Separation and Purification Technology

journal homepage: www.elsevier.com/locate/seppur

Polyamine-modified reduced graphene oxide: A new and cost-effective adsorbent for efficient removal of mercury in waters

Pei Lay Yap[a,b], Tran Thanh Tung[a,b], Shervin Kabiri[a,b,c], Nicola Matulick[a,b], Diana N.H. Tran[a,b], Dusan Losic[a,b,*]



I&EC research
Industrial & Engineering Chemistry Research
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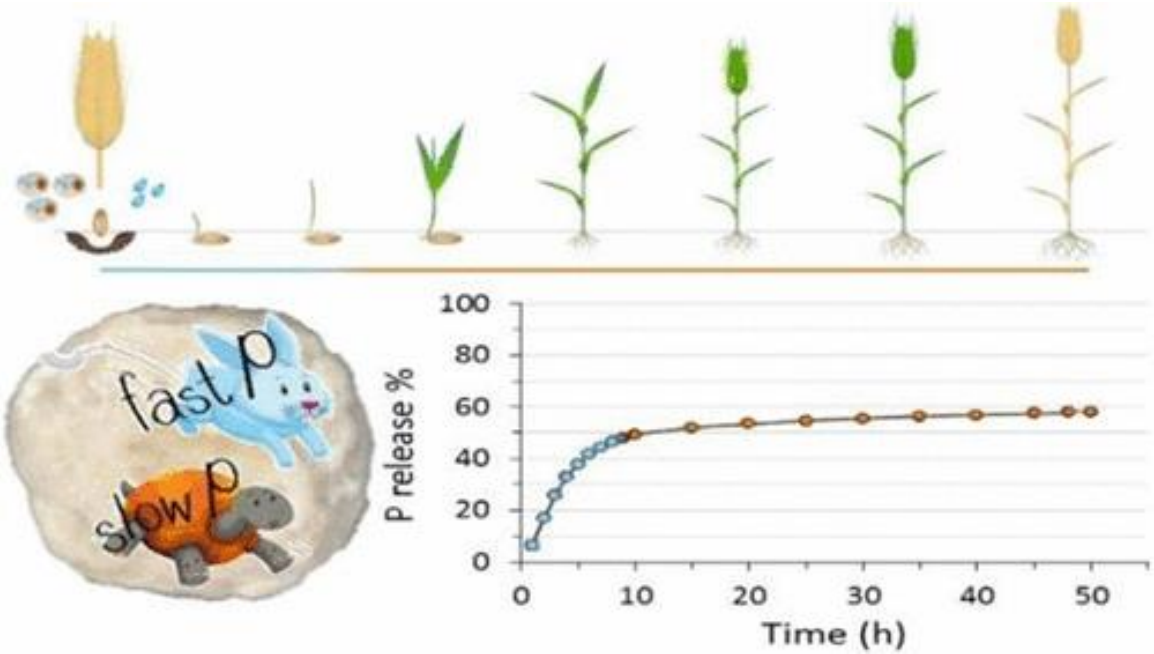
Article

Engineered Phosphate Fertilizers with Dual-Release Properties

Shervin Kabiri,* Ivan B. Andelkovic,* Rodrigo C. da Silva, Fien Degryse, Roslyn Baird, Ehsan Tavakkoli, Dusan Losic, and Michael J. McLaughlin



Chemosphere 238 (2020) 124558

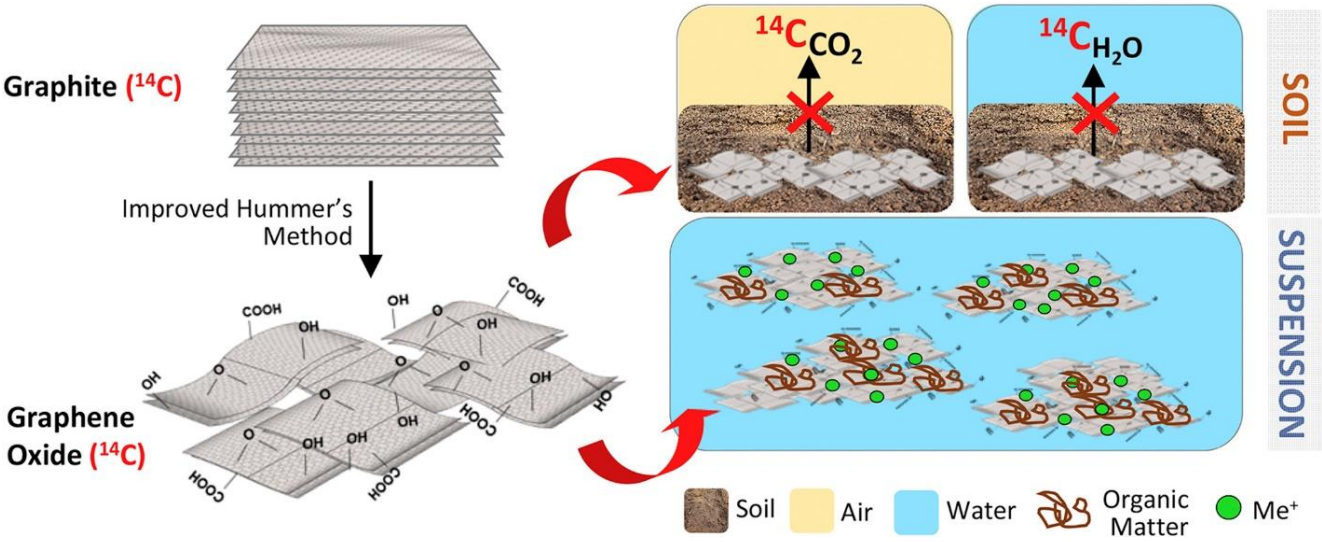
Contents lists available at ScienceDirect

Chemosphere

journal homepage: www.elsevier.com/locate/chemosphere

Mineralisation and release of 14C-graphene oxide (GO) in soils

Divina A. Navarro [a, b, *], Mélanie Kah [c], Dusan Losic [d], Rai S. Kookana [a, b], Mike J. McLaughlin [d]



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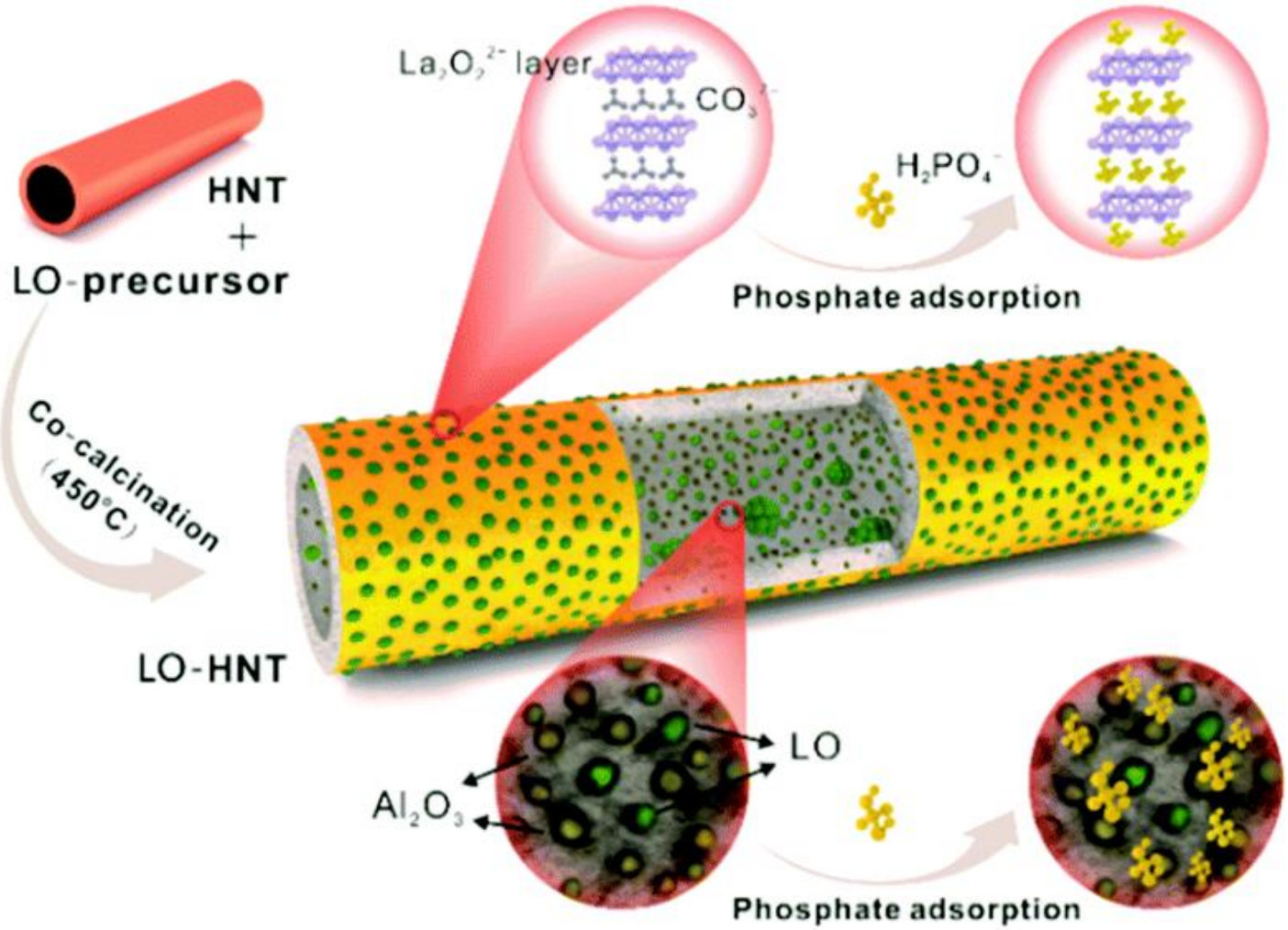
DOI: 10.1039/C8CC10314C (Communication) *Chem. Commun.*, 2019, **55**, 2110-2113

Activation of natural halloysite nanotubes by introducing lanthanum oxycarbonate nanoparticles *via* co-calcination for outstanding phosphate removal†

Yanfu Wei‡ [ab], Peng Yuan‡ *[ac], Dong Liu [ac], Dusan Losic [d], Daoyong Tan [e], Fanrong Chen [ac], Hongchang Liu [a], Junming Zhou [ac], Peixin Du [ac] and Yaran Song [ac]



Journal of Colloid and Interface Science 539 (2019) 315–325

Contents lists available at ScienceDirect

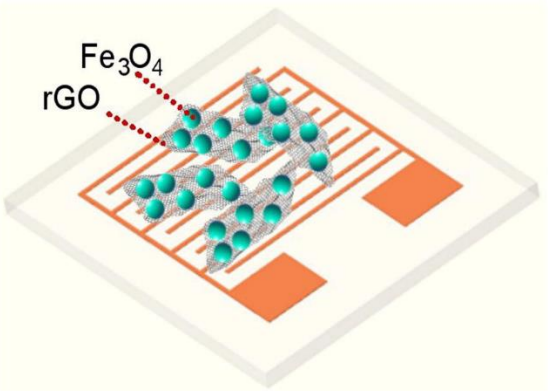
Journal of Colloid and Interface Science

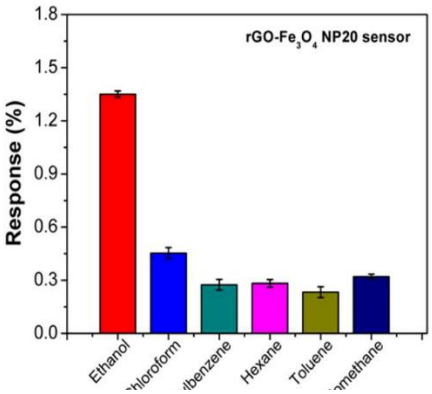
journal homepage: www.elsevier.com/locate/jcis

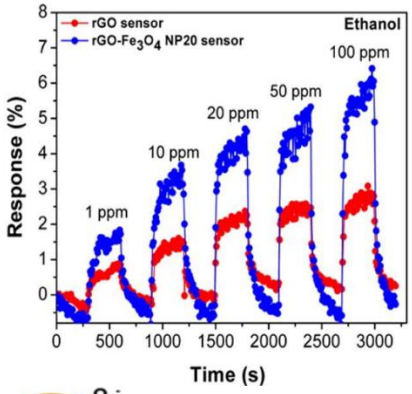
Regular Article

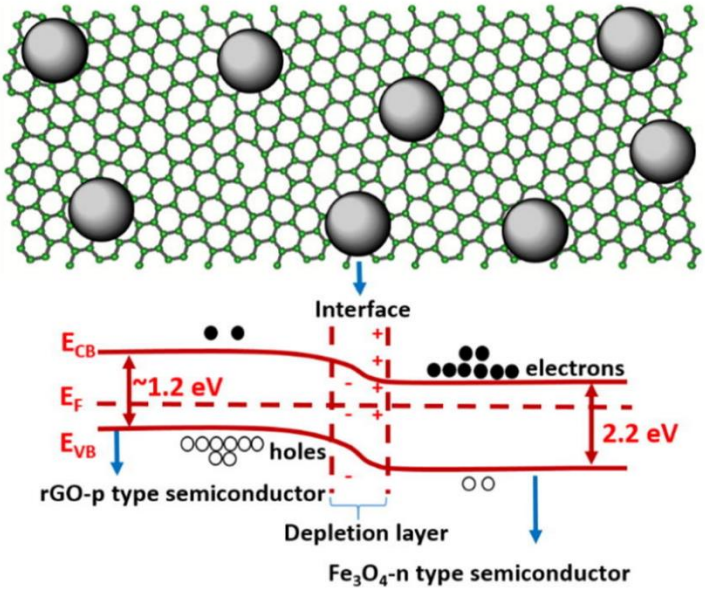
Magnetic iron oxide nanoparticles decorated graphene for chemoresistive gas sensing: The particle size effects

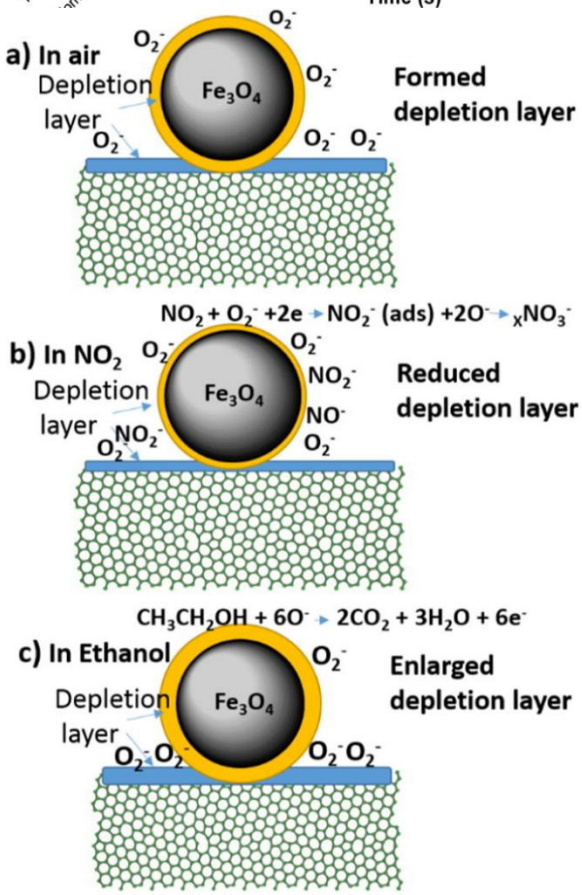
Tran Thanh Tung [a,b], Nguyen Viet Chien [c], Nguyen Van Duy [c], Nguyen Van Hieu [d,e,*], Md Julker Nine [a,b], Campbell J. Coghlan [a,b], Diana N.H. Tran [a,b], Dusan Losic [a,b,*]











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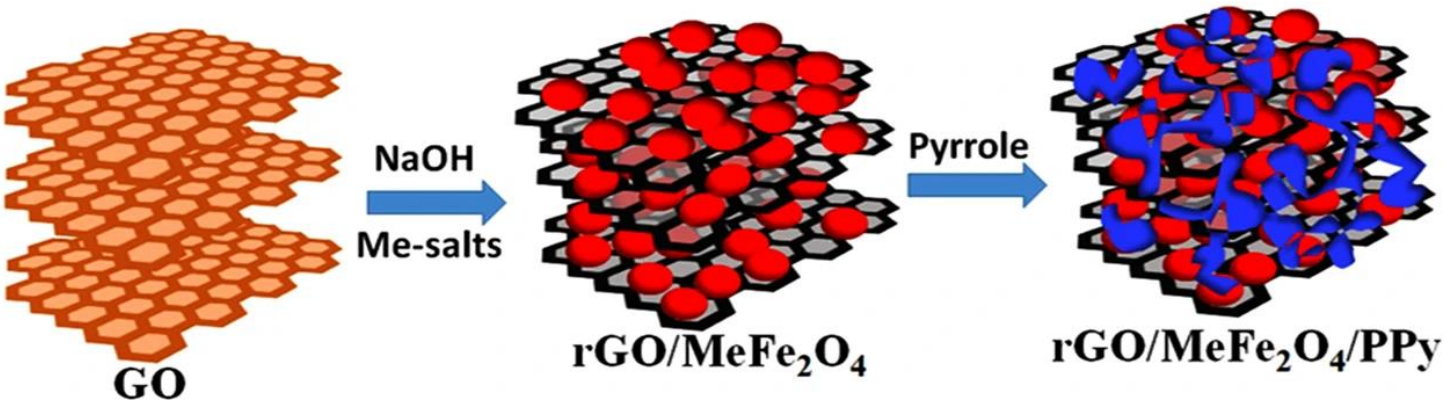
SCIENTIFIC REPORTS

OPEN

Facile synthesis of ternary graphene nanocomposites with doped metal oxide and conductive polymers as electrode materials for high performance supercapacitors

Received: 7 October 2018
Accepted: 12 March 2019
Published online: 12 April 2019

Saira Ishaq[1,2,3], Mahmoud Moussa[2,3], Farah Kanwal[1], Muhammad Ehsan[1], Muhammad Saleem[1], Truc Ngo Van[2,3] & Dusan Losic[2,3]



Ceramics International 45 (2019) 8713–8720

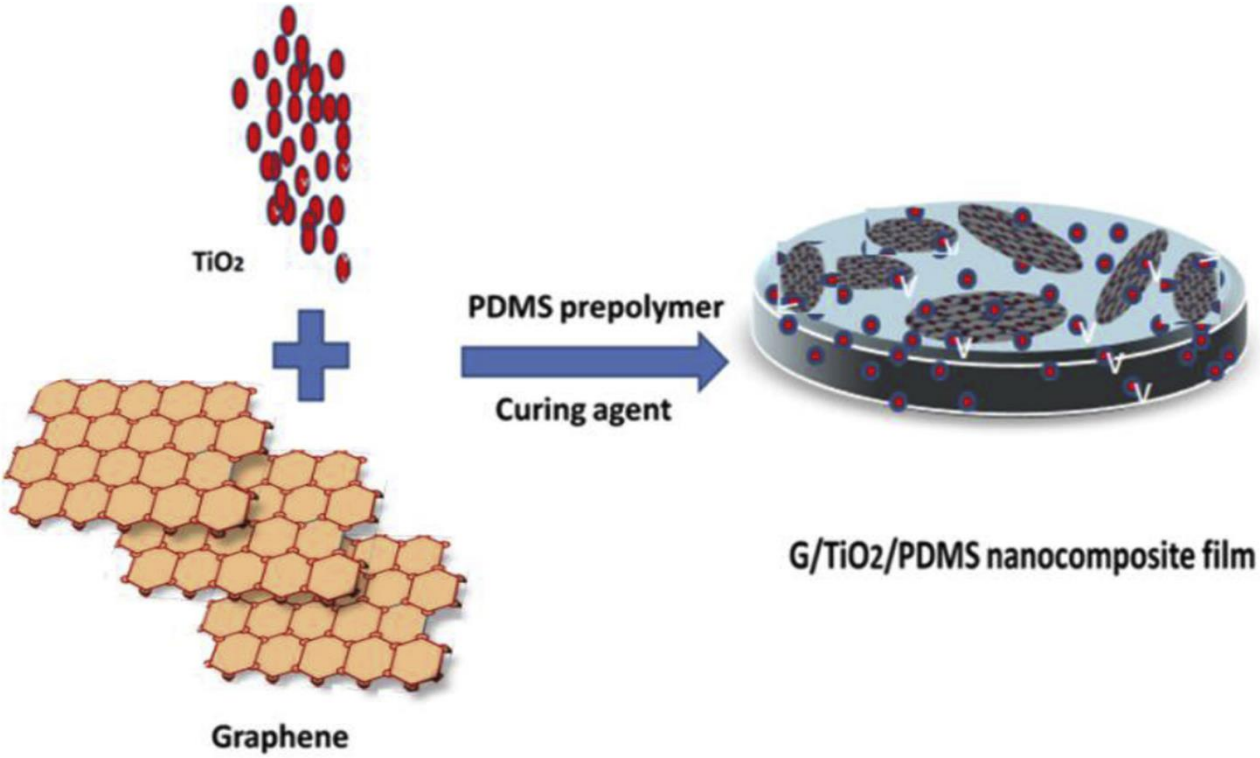
Contents lists available at ScienceDirect

Ceramics International

journal homepage: www.elsevier.com/locate/ceramint

Synthesis of three phase graphene/titania/polydimethylsiloxane nanocomposite films and revealing their dielectric and impedance properties

Saira Ishaq[a,b,c], Farah Kanwal[a,**], Shahid Atiq[d], Mahmoud Moussa[b,c], Dusan Losic[b,c,*]



Chemosphere 238 (2020) 124558

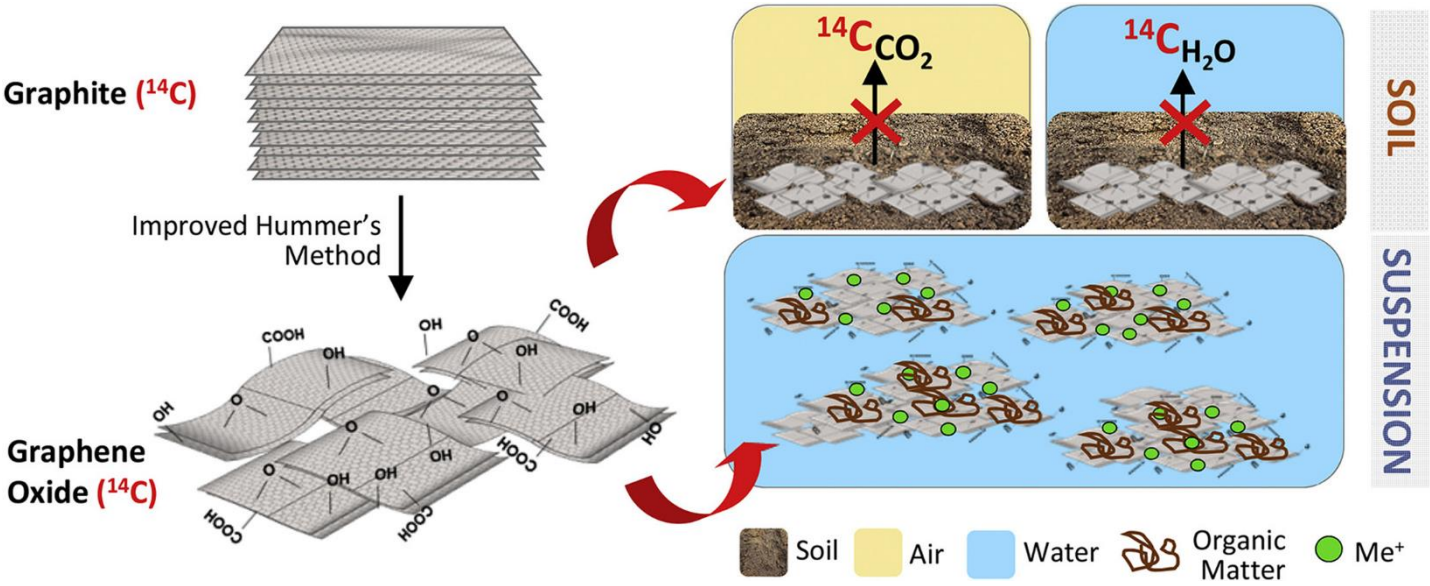
Contents lists available at ScienceDirect

Chemosphere

journal homepage: www.elsevier.com/locate/chemosphere

Mineralisation and release of 14C-graphene oxide (GO) in soils

Divina A. Navarro [a, b, *], Mélanie Kah [c], Dusan Losic [d], Rai S. Kookana [a, b], Mike J. McLaughlin [d]



Chemical Engineering Journal 370 (2019) 136–147

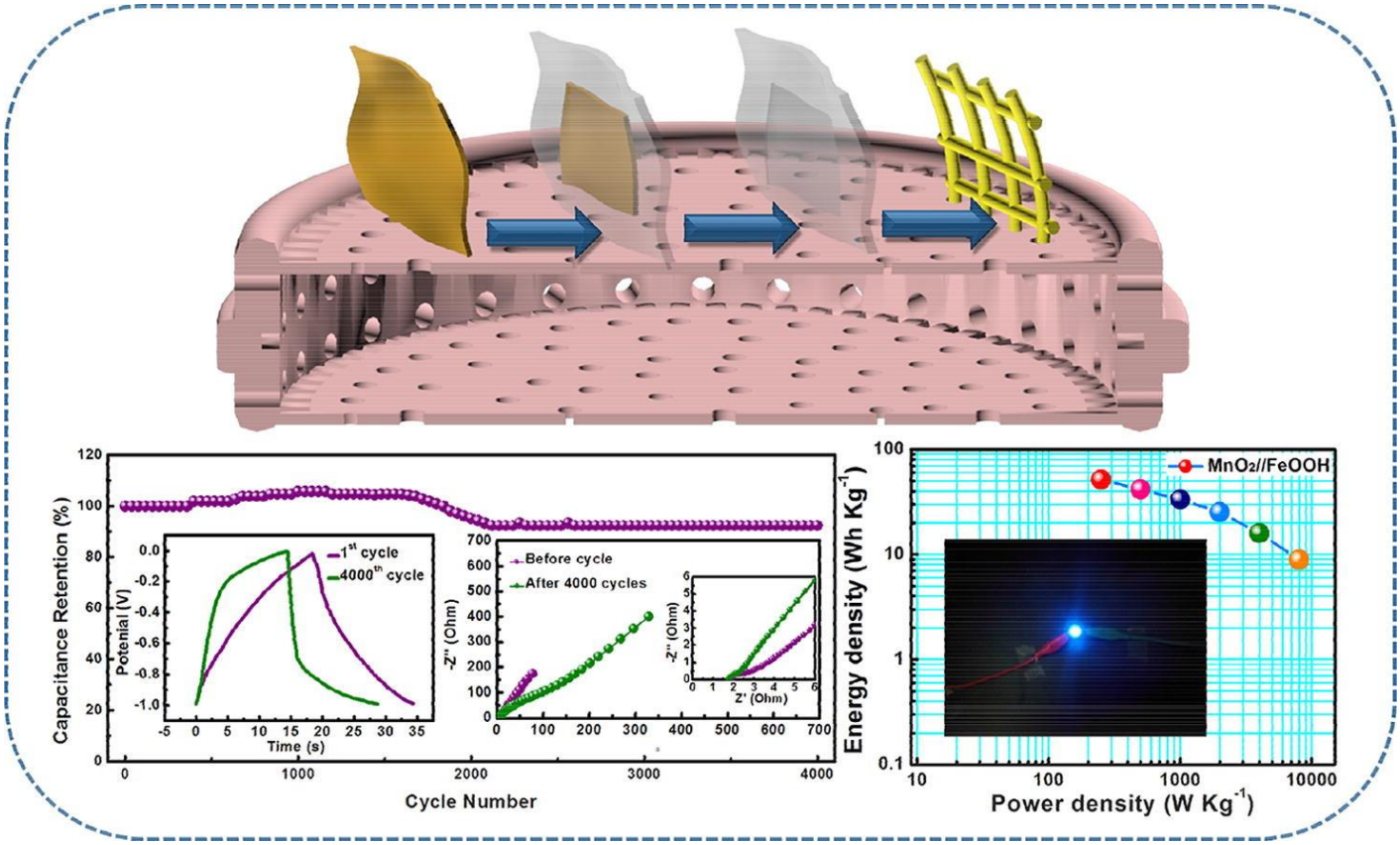
Contents lists available at ScienceDirect

Chemical Engineering Journal

journal homepage: www.elsevier.com/locate/cej

Tuning MnO_2 to FeOOH replicas with bio-template 3D morphology as electrodes for high performance asymmetric supercapacitors

Kailin Li[a,b], Xiaoying Liu[a,*], Tianxu Zheng[b], Debin Jiang[b], Zheng Zhou[b], Chuanqi Liu[a], Xianming Zhang[a], Yuxin Zhang[b], Dusan Losic[c,*]



International Journal of Nanomedicine

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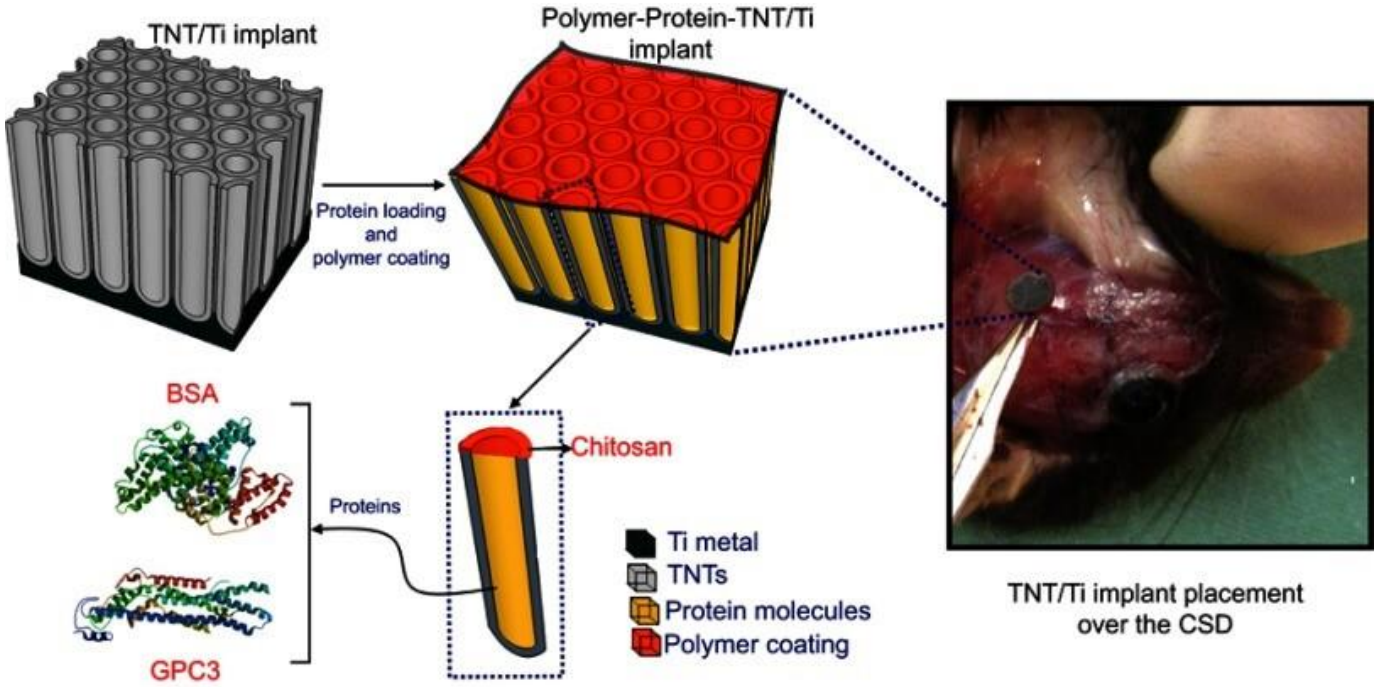
ORIGINAL RESEARCH

Titania nanotube-based protein delivery system to inhibit cranial bone regeneration in Crouzon model of craniosynostosis

This article was published in the following Dove Press journal:
International Journal of Nanomedicine

Manpreet Bariana[1]
John A Kaidonis[1]
Dusan Losic[2]
Sarbin Ranjitkar[1,*]
Peter J Anderson[1,3,*]

Background: Craniosynostosis is a developmental disorder characterized by the premature fusion of skull sutures, necessitating repetitive, high-risk neurosurgical interventions throughout infancy. This study used protein-releasing Titania nanotubular implant (TNT/Ti) loaded with glypican 3 (GPC3) in the cranial critical-sized defects (CSDs) in Crouzon murine model ($Fgfr2^{c342y/+}$ knock-in mutation) to address a key challenge of delaying post-



Electrochimica Acta 322 (2019) 134769

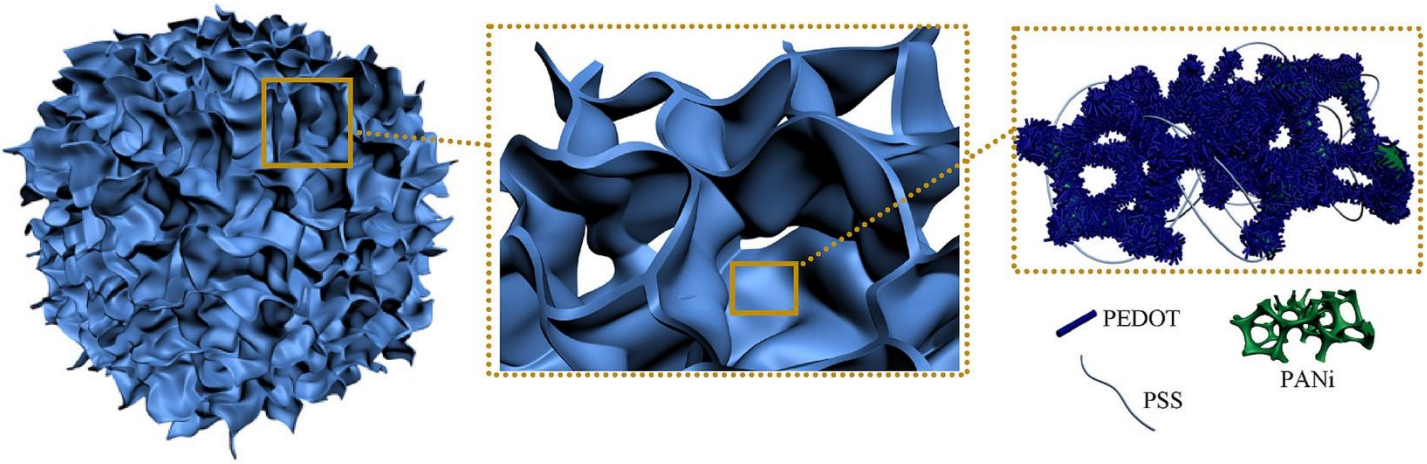
Contents lists available at ScienceDirect

Electrochimica Acta

journal homepage: www.elsevier.com/locate/electacta

Free-standing PEDOT/polyaniline conductive polymer hydrogel for flexible solid-state supercapacitors

Zhaokun Yang [a, b], Jun Ma [b, *], Borui Bai [b], Aidong Qiu [b], Dusan Losic [c], Dongjian Shi [a], Mingqing Chen [a, **]



Applied Materials Today 16 (2019) 425–434

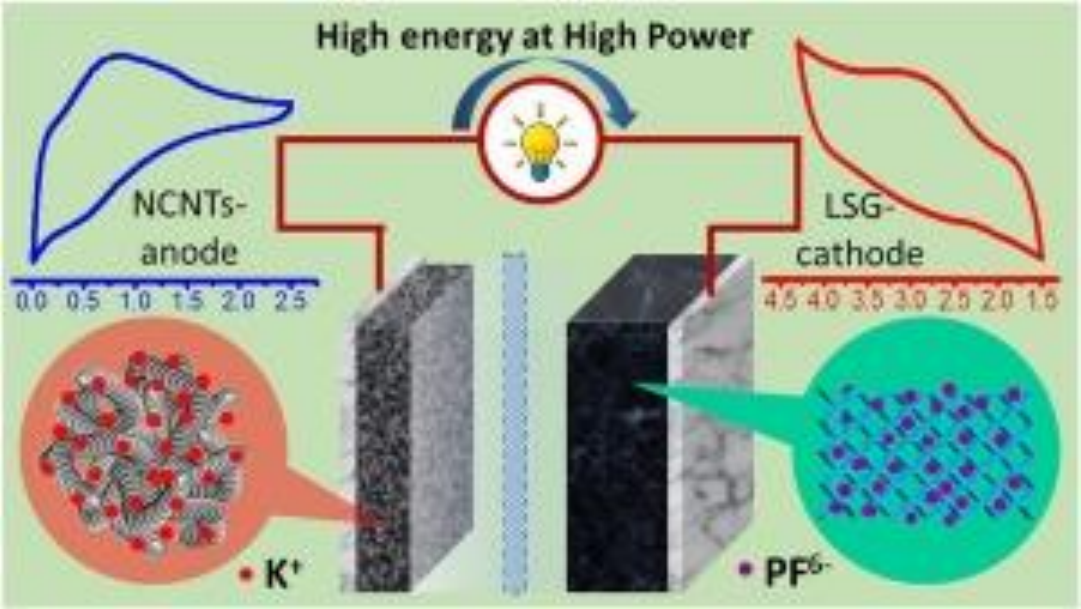
Contents lists available at ScienceDirect

Applied Materials Today

journal homepage: www.elsevier.com/locate/apmt

Engineering of high-performance potassium-ion capacitors using polyaniline-derived N-doped carbon nanotubes anode and laser scribed graphene oxide cathode

Mahmoud Moussa[a,d], Sameer A. Al-Bataineh[b], Dusan Losic[a], Deepak P. Dubal[c,*]



REVIEW

Supercapacitors

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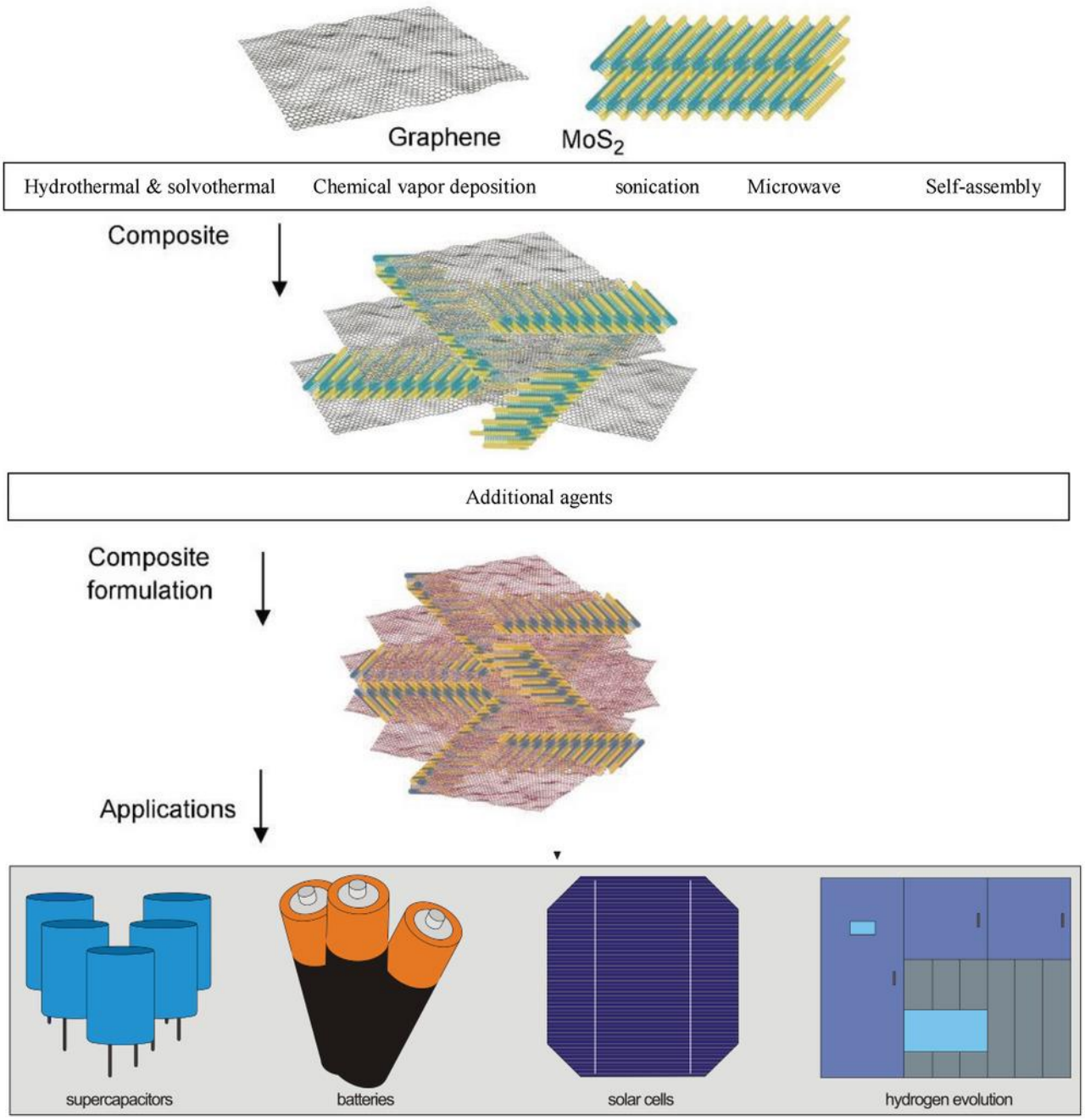
MoS_2/Graphene Composites as Promising Materials for Energy Storage and Conversion Applications

*Hongxia Wang, Diana Tran, Jun Qian, Fuyuan Ding, and Dusan Losic**



Separation and Purification Technology 233 (2020) 116062

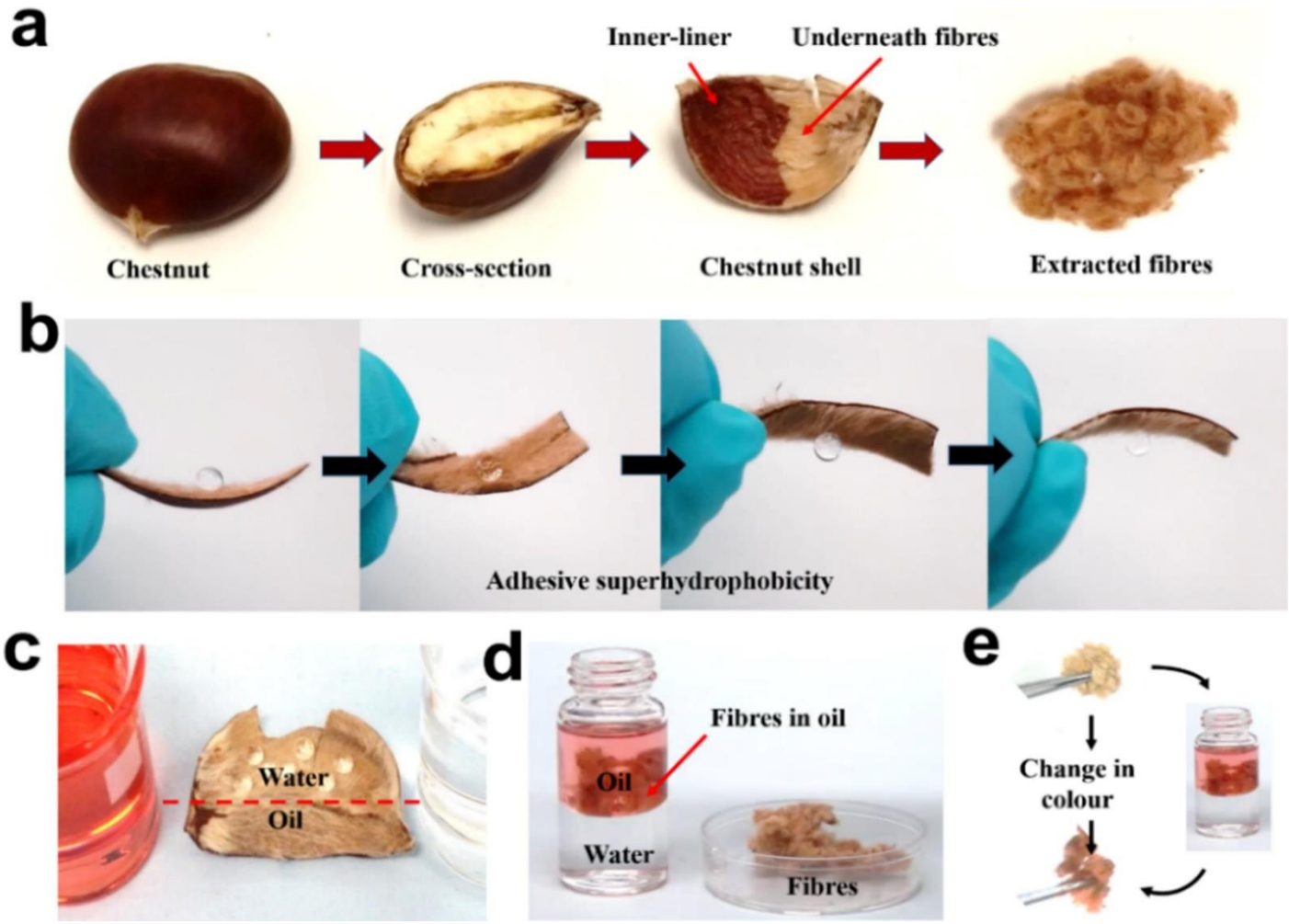
Contents lists available at ScienceDirect

Separation and Purification Technology

journal homepage: www.elsevier.com/locate/seppur

Superhydrophobic/superoleophilic natural fibres for continuous oil-water separation and interfacial dye-adsorption

Md J. Nine*, Shervin Kabiri, Achia K. Sumona, Tran T. Tung, Mahmoud M. Moussa, Dusan Losic*



Chemical Engineering Journal 370 (2019) 136–147

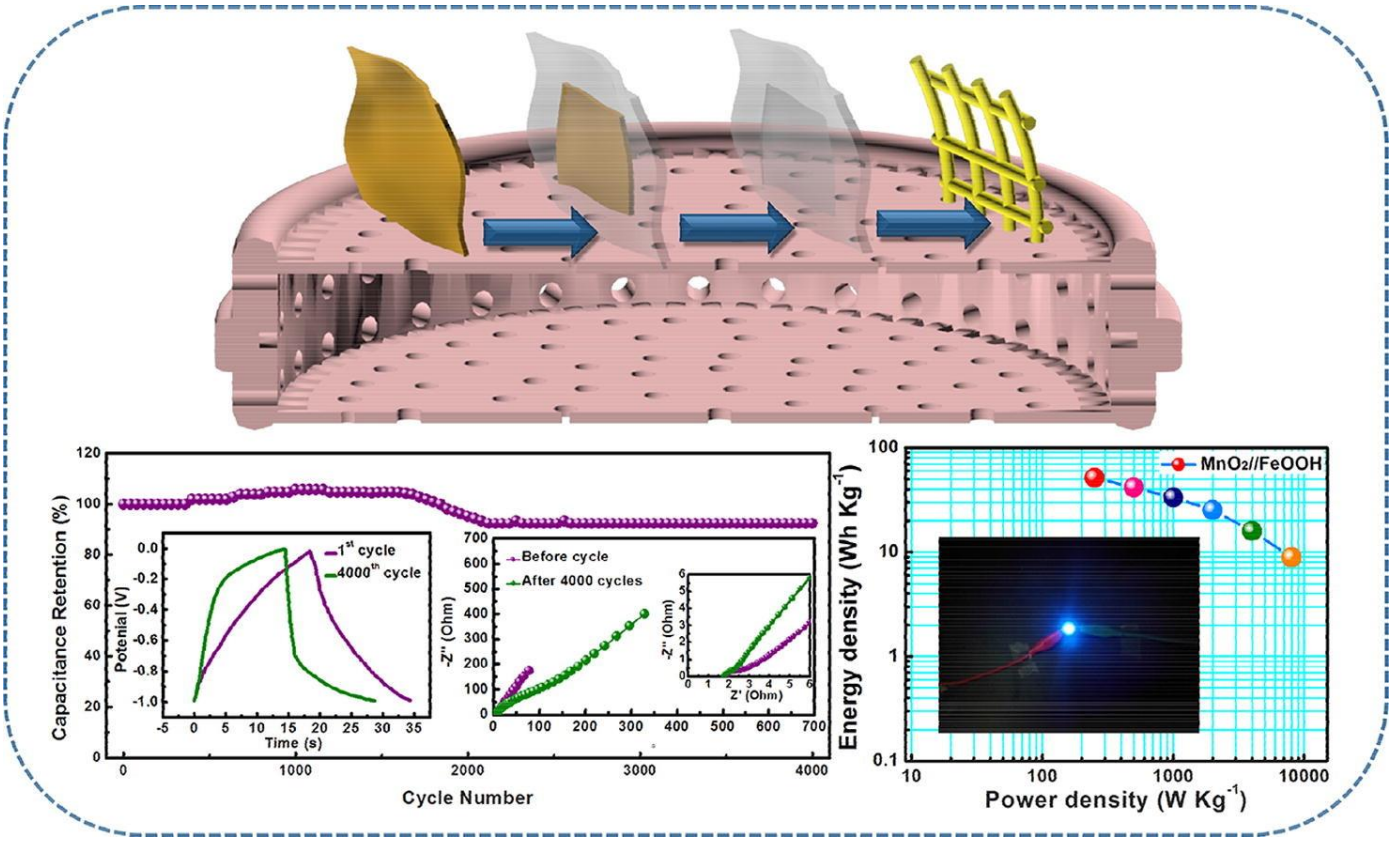
Contents lists available at ScienceDirect

Chemical Engineering Journal

journal homepage: www.elsevier.com/locate/cej

Tuning MnO_2 to FeOOH replicas with bio-template 3D morphology as electrodes for high performance asymmetric supercapacitors

Kailin Li[a,b], Xiaoying Liu[a,*], Tianxu Zheng[b], Debin Jiang[b], Zheng Zhou[b], Chuanqi Liu[a], Xianming Zhang[a], Yuxin Zhang[b], Dusan Losic[c,*]



Current Applied Physics 19 (2019) 1082–1087

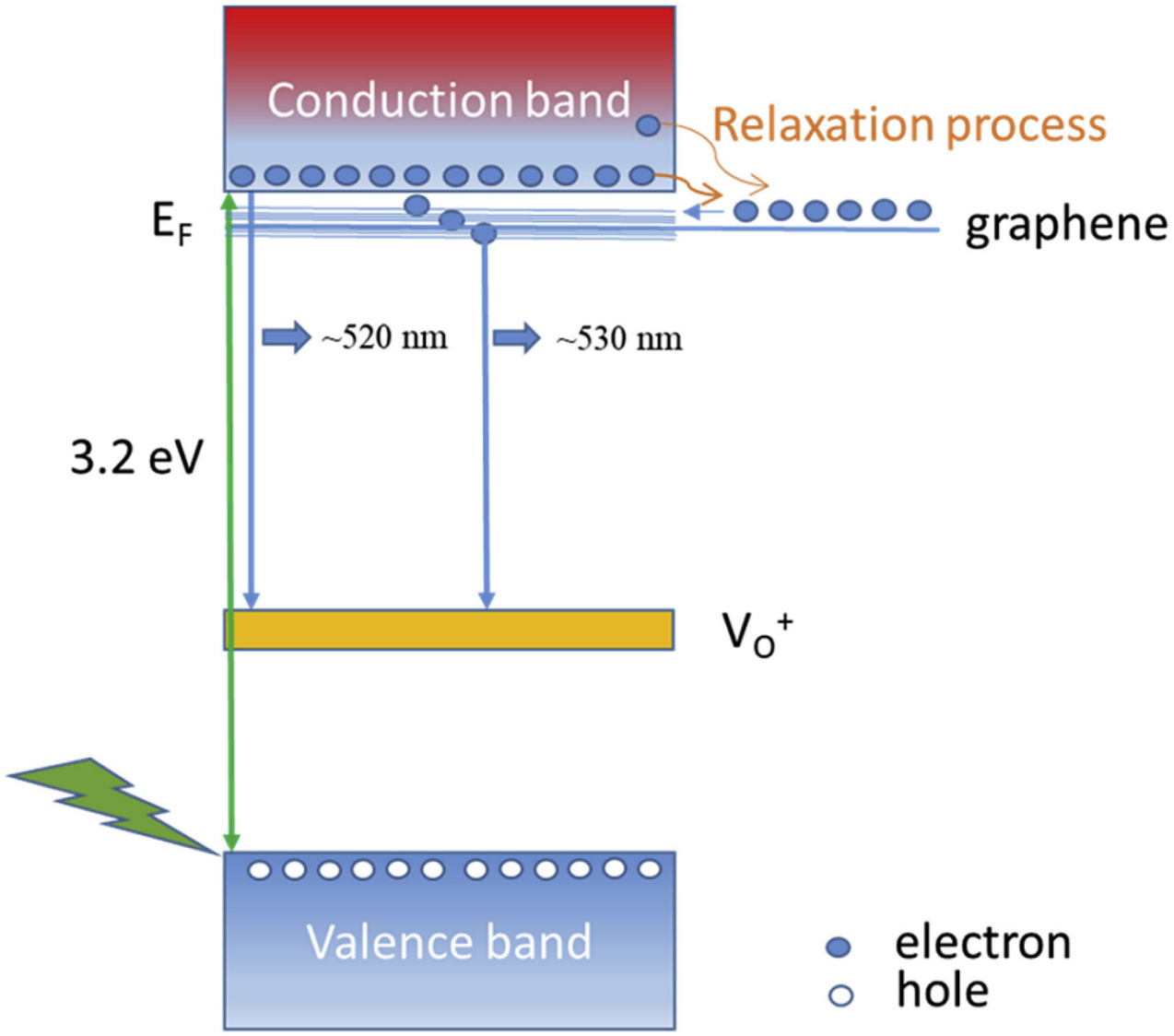
Contents lists available at ScienceDirect

Current Applied Physics

journal homepage: www.elsevier.com/locate/cap

Electromigration with enhanced green emission in the titanium dioxide nanotube/graphene composite

Tri Tuan Nguyen[a], Tran Thanh Tung[b], Dusan Losic[b], Luu Thi Lan Anh[c], Le Hong Phuc[d], Xuan Sang Nguyen[e,f,*]



ACS OMEGA

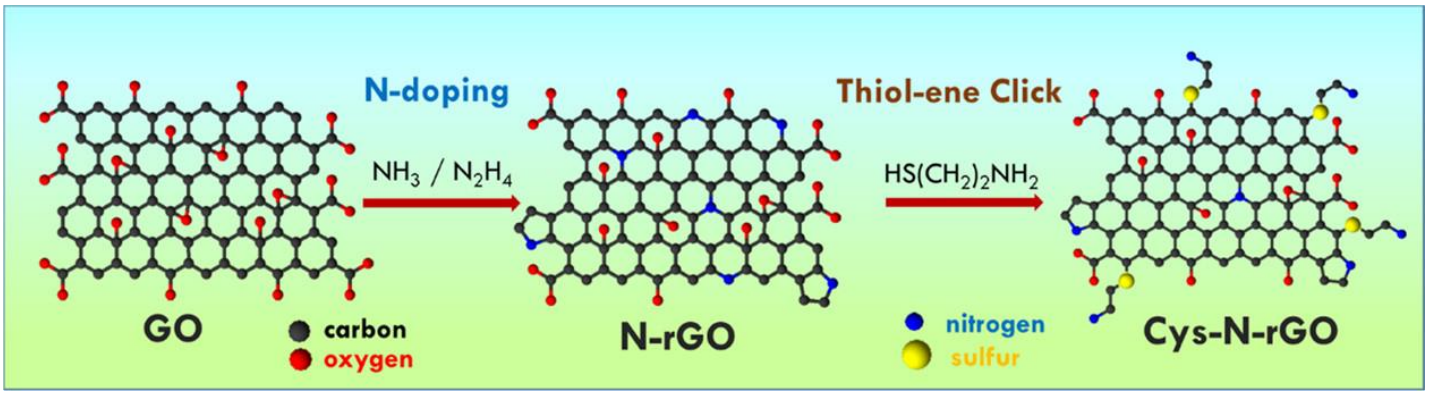
Article

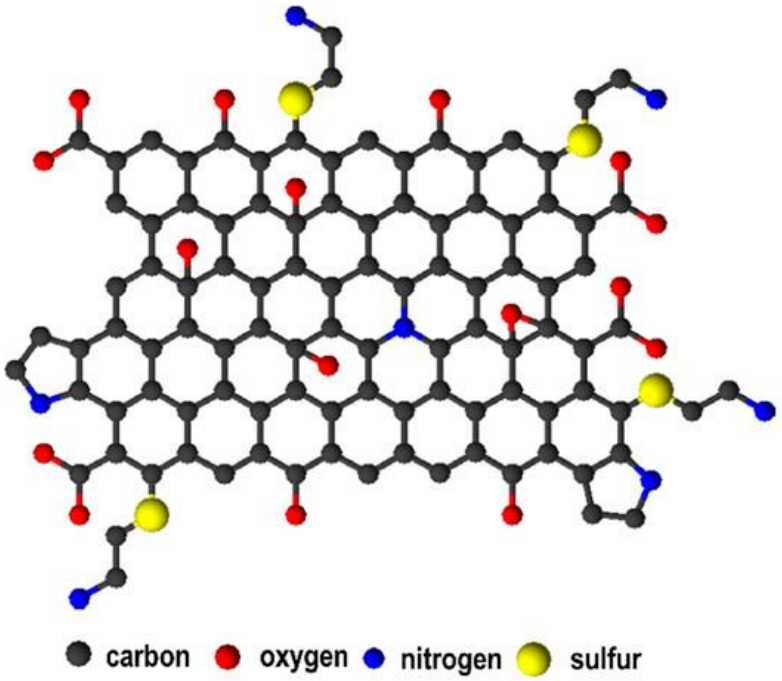
Cite This: ACS Omega 2019, 4, 19787−19798

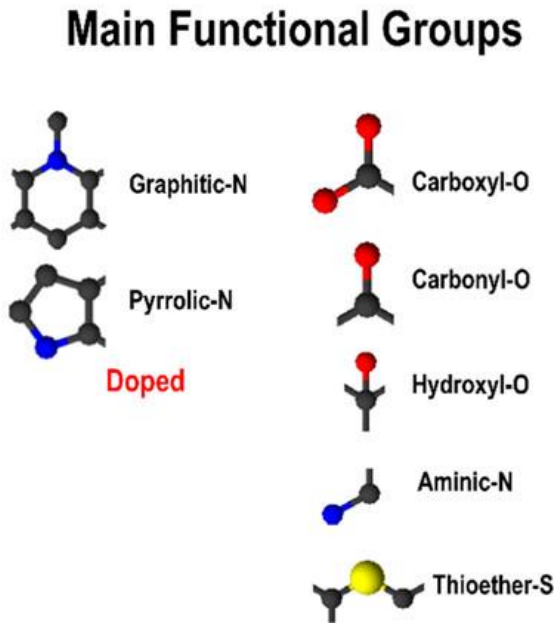
http://pubs.acs.org/journal/acsodf

Tuning the Multifunctional Surface Chemistry of Reduced Graphene Oxide via Combined Elemental Doping and Chemical Modifications

Pei Lay Yap,[†,‡] Shervin Kabiri,[‡,§] Yow Loo Auyoong,[∥] Diana N. H. Tran,[†,‡] and Dusan Losic*[,†,‡]







ACS APPLIED MATERIALS & INTERFACES

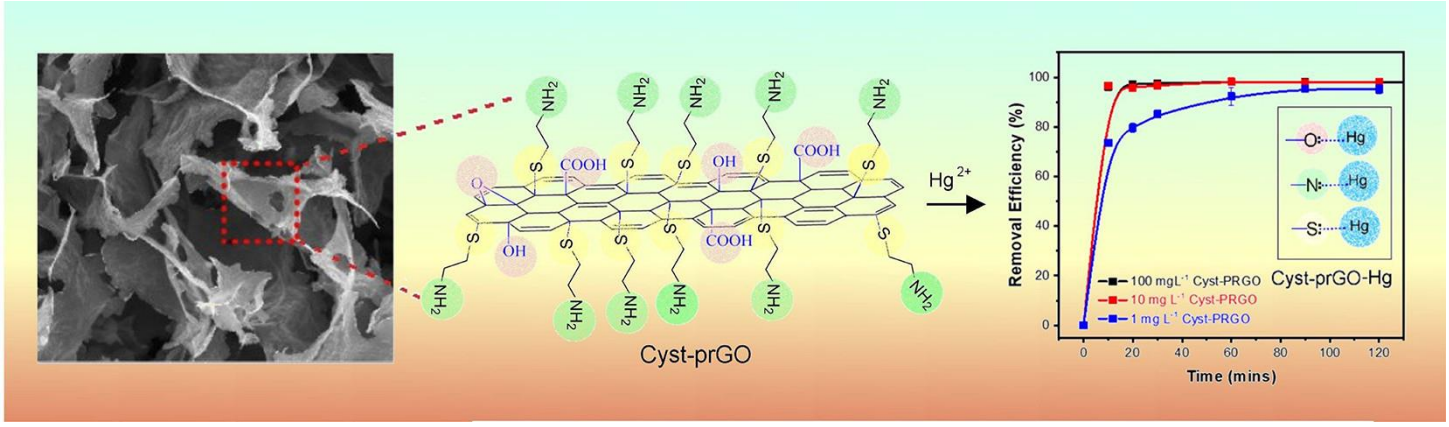
Research Article

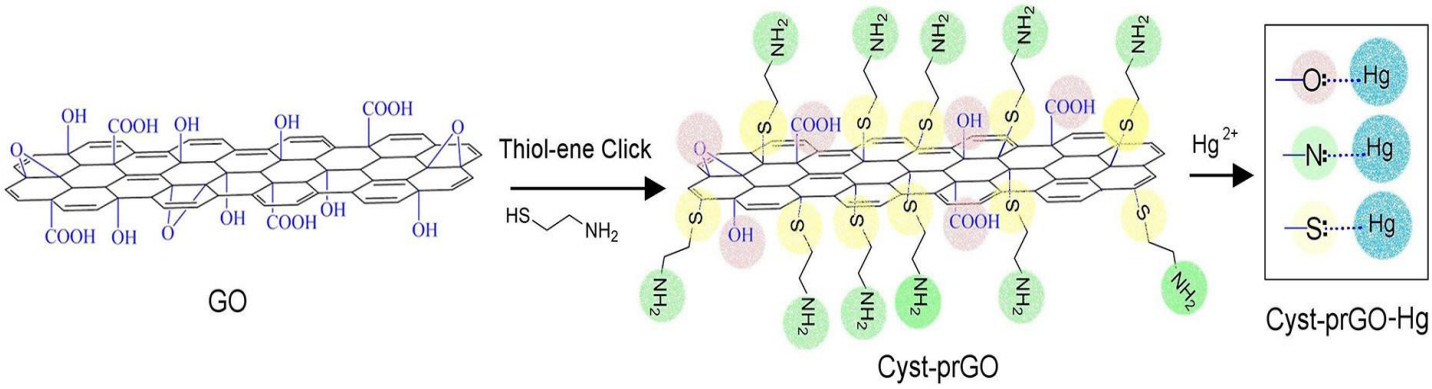
Cite This: ACS Appl. Mater. Interfaces 2019, 11, 6350−6362

www.acsami.org

Multifunctional Binding Chemistry on Modified Graphene Composite for Selective and Highly Efficient Adsorption of Mercury

Pei Lay Yap,[†,‡] Shervin Kabiri,[†,‡] Diana N. H. Tran,[†,‡] and Dusan Losic*[,†,‡]





ACS APPLIED ENERGY MATERIALS
Cite This: ACS Appl. Energy Mater. 2020, 3, 923−932
Article
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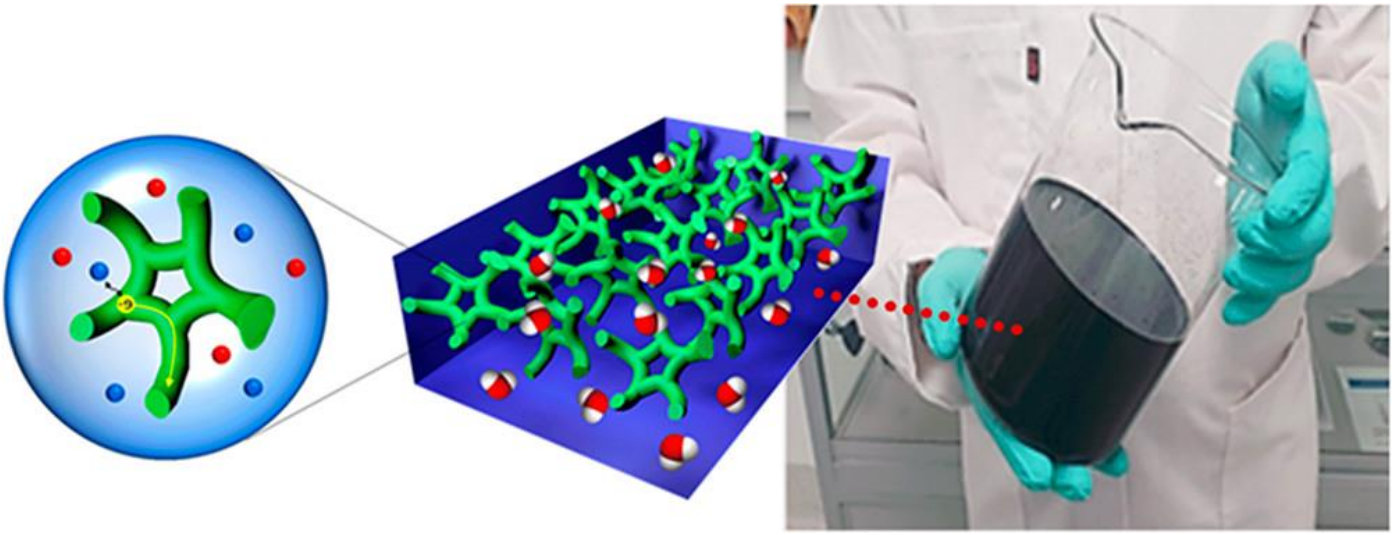
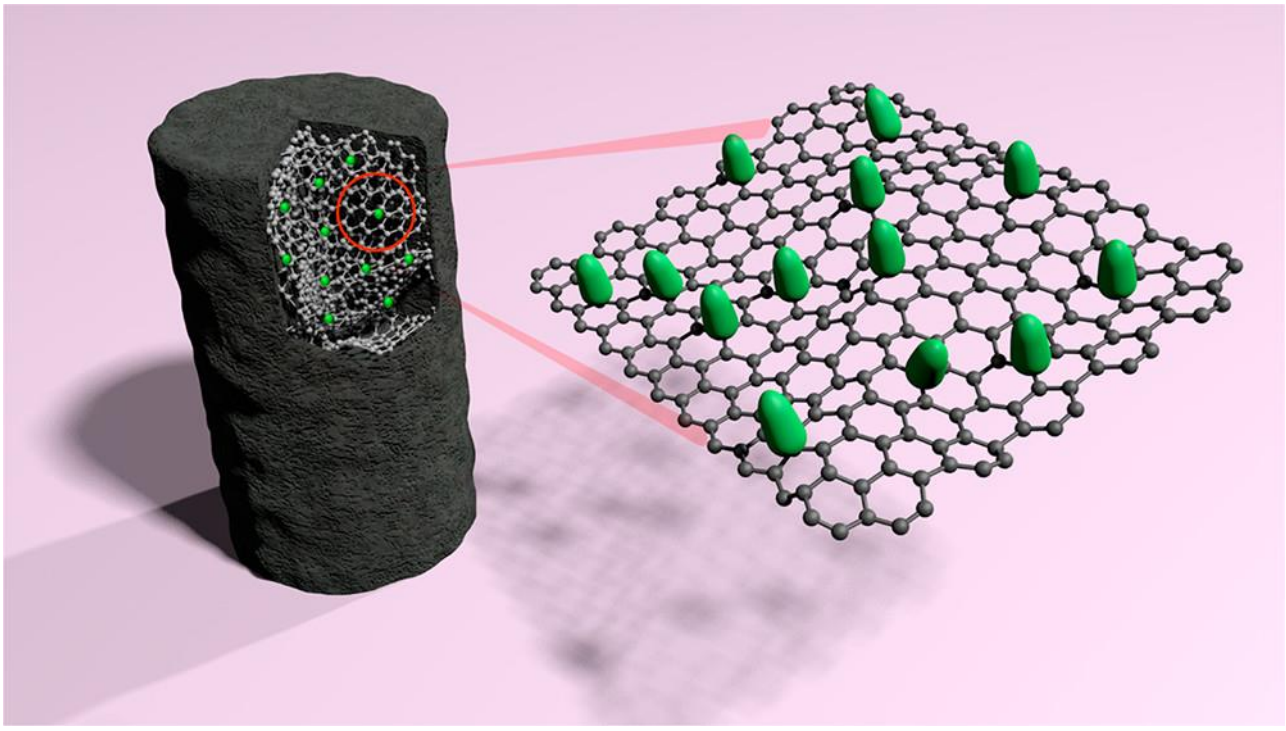
Self-Assembly and Cross-Linking of Conducting Polymers into 3D Hydrogel Electrodes for Supercapacitor Applications

Mahmoud Moussa,[†,‡,§] Maher F. El-Kady,[∥,⊥] Deepak Dubal,[%] Tran Thanh Tung,[†,‡] Md Julker Nine,[†,‡] Nahla Mohamed,[∥,#] Richard B. Kaner,*[,∥,⊥] and Dusan Losic*[,†,‡]





RSC Advances

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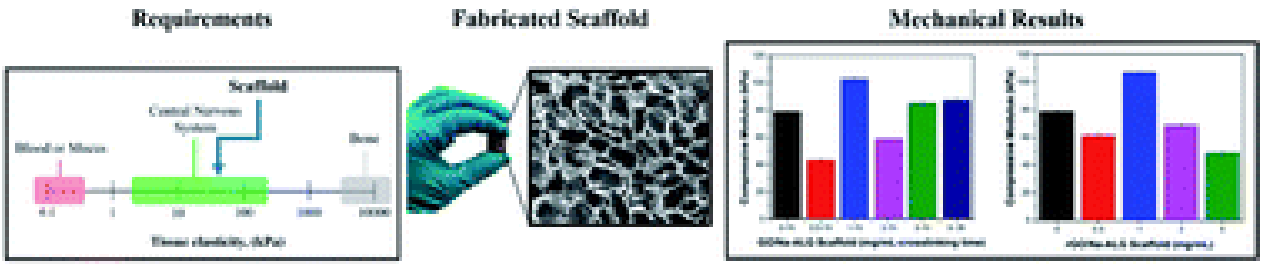
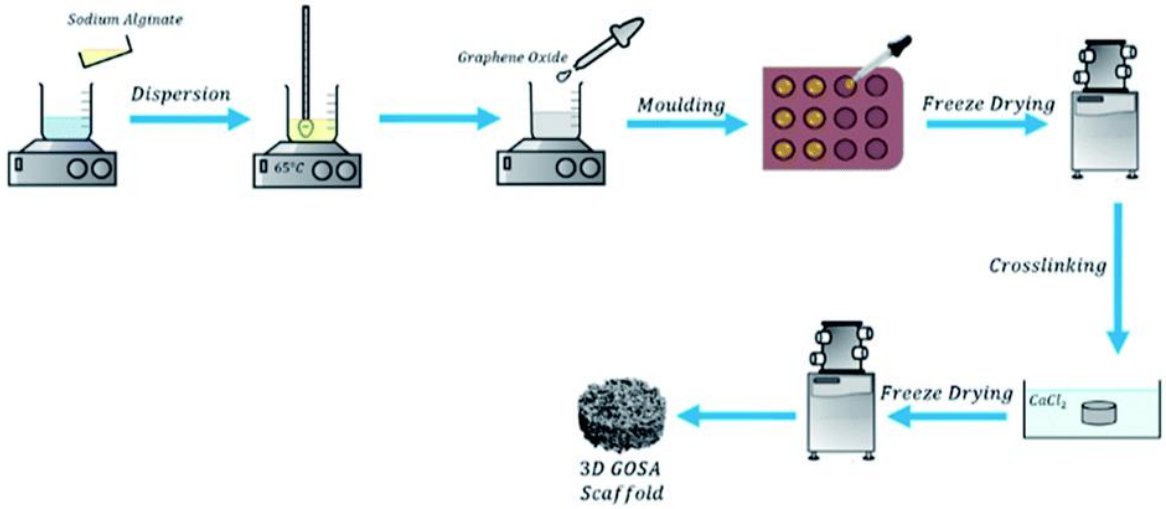
Cite this: *RSC Adv.*, 2019, **9**, 36838

Advancing fabrication and properties of three-dimensional graphene–alginate scaffolds for application in neural tissue engineering

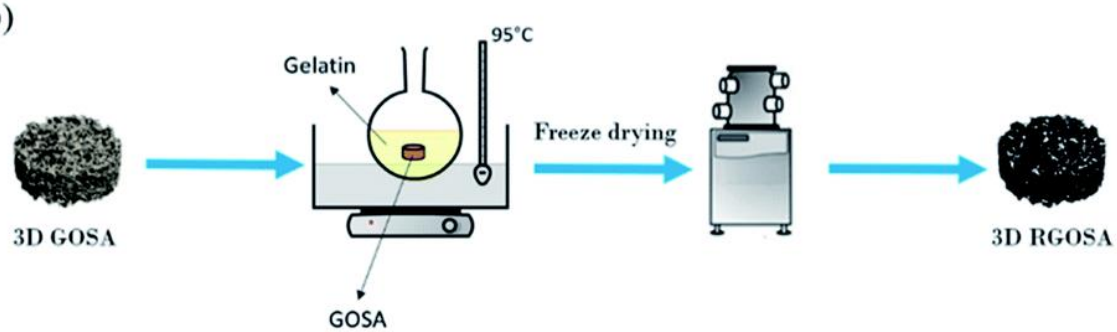
Negar Mansouri,[a] Said F. Al-Sarawi,*[a] Jagan Mazumdar[a] and Dusan Losic*[bc]



(a)



(b)



Results in Physics 11 (2018) 540–548

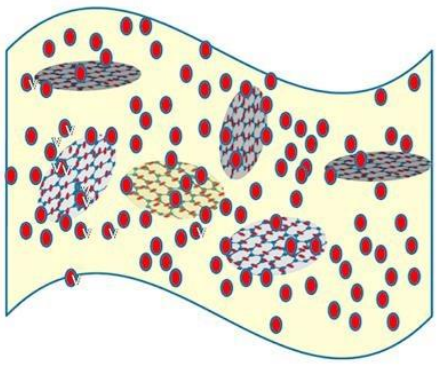
Contents lists available at ScienceDirect

Results in Physics

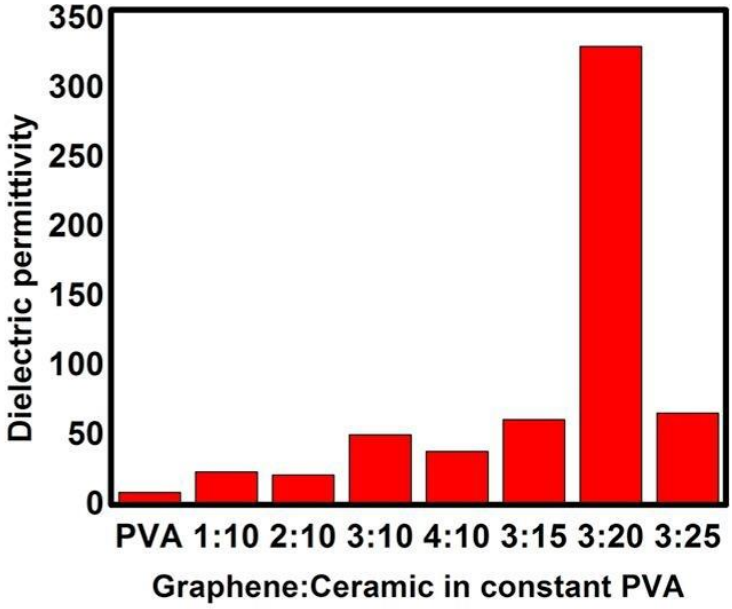
journal homepage: www.elsevier.com/locate/rinp

Dielectric and impedance spectroscopic studies of three phase graphene/titania/poly(vinyl alcohol) nanocomposite films

Saira Ishaq[a,b], Farah Kanwal[a,*], Shahid Atiq[c], Mahmoud Moussa[b], Umar Azhar[b], Iffrah Gul[d], Dusan Losic[b,*]



G/TiO2/PVA nanocomposite



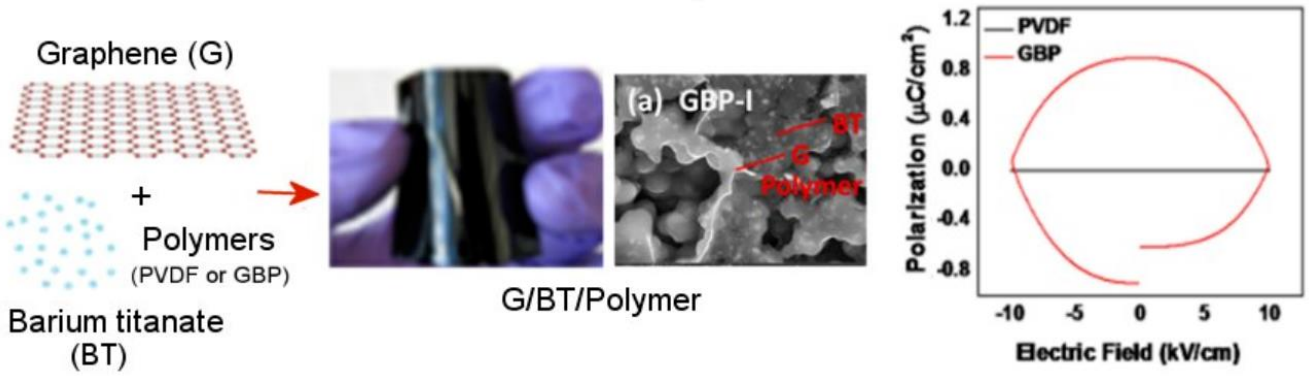
materials

MDPI

Article

Advancing Dielectric and Ferroelectric Properties of Piezoelectric Polymers by Combining Graphene and Ferroelectric Ceramic Additives for Energy Storage Applications

Saira Ishaq [1,2,3], Farah Kanwal [1,*], Shahid Atiq [4], Mahmoud Moussa [2,3], Umar Azhar [2], Muhammad Imran [1] and Dusan Losic [2,3,*]



European Journal of Pharmaceutical Sciences 122 (2018) 311–330

Contents lists available at ScienceDirect

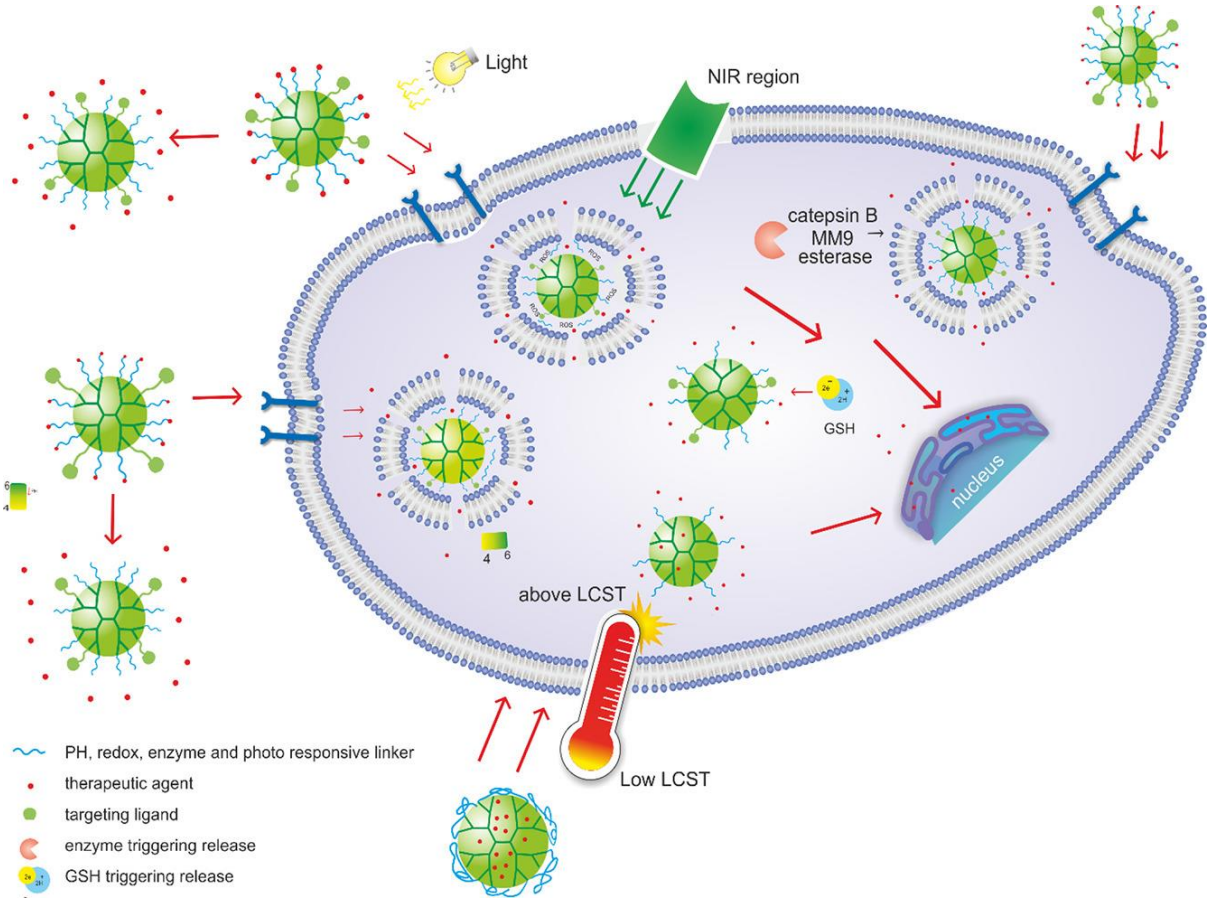
European Journal of Pharmaceutical Sciences

journal homepage: www.elsevier.com/locate/ejps

Review

Surface functionalized dendrimers as controlled-release delivery nanosystems for tumor targeting

Maryam Ghaffari[a,b,c], Gholamreza Dehghan[b], Fereydoon Abedi-Gaballu[a,b,d], Soheila Kashanian[e,f], Behzad Baradaran[a], Jafar Ezzati Nazhad Dolatabadi[g,*], Dusan Losic[h,*]



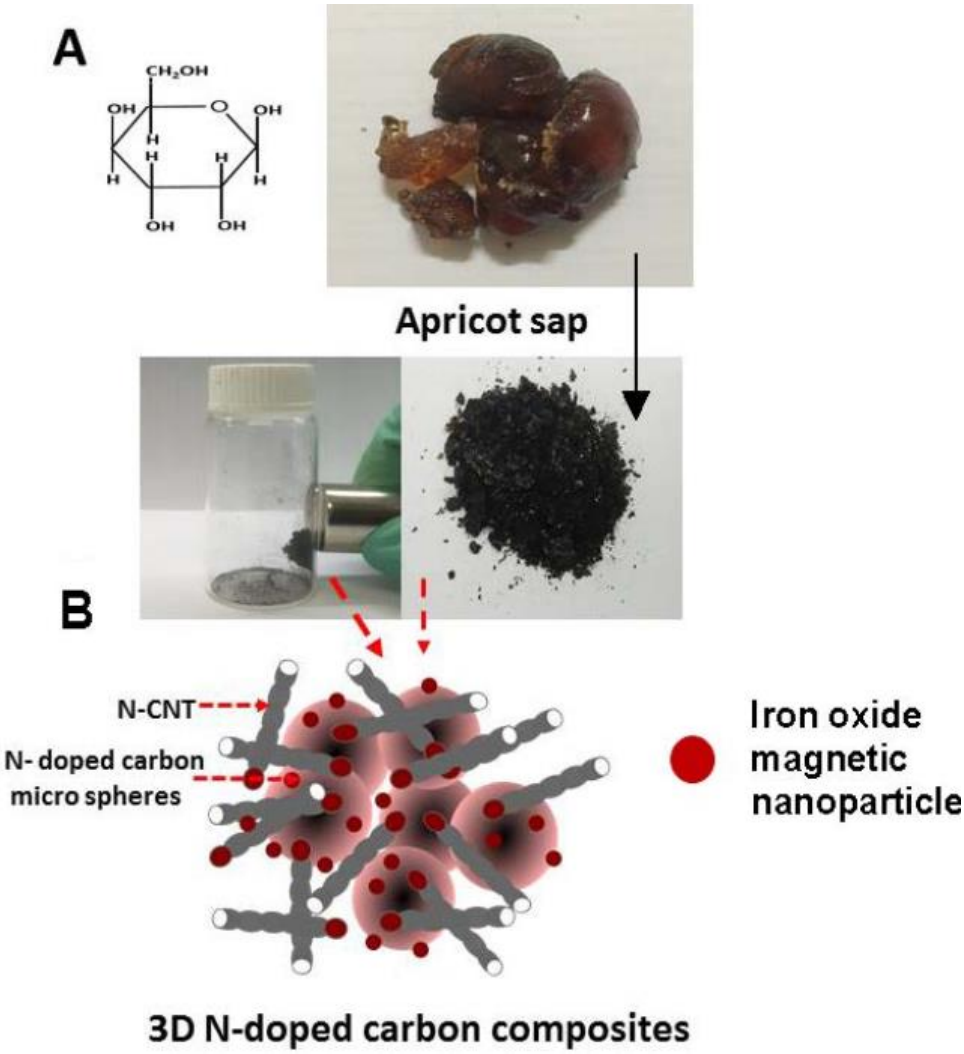
materials

MDPI

Article

Green Synthesis of Three-Dimensional Hybrid N-Doped ORR Electro-Catalysts Derived from Apricot Sap

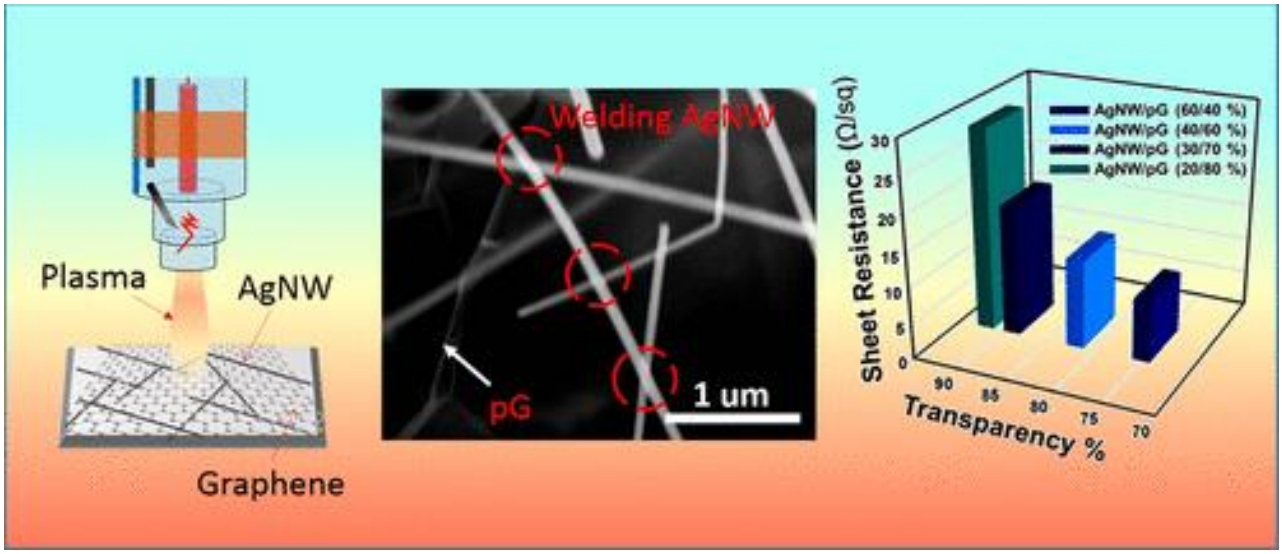
Ramesh Karunagaran [1], Campbell Coghlan [2], Cameron Shearer [3], Diana Tran [1], Karan Gulati [1], Tran Thanh Tung [1], Christian Doonan [2] and Dusan Losic [1,*]



ACS APPLIED NANO MATERIALS
Cite This: ACS Appl. Nano Mater. 2018, 1, 2249−2260
Article
www.acsanm.org

Silver Nanowires with Pristine Graphene Oxidation Barriers for Stable and High Performance Transparent Conductive Films

Faisal Alotaibi,[†,‡] Tran Thanh Tung,[†,‡] Md Julker Nine,[†,‡] Campbell J. Coghlan,[†,‡] and Dusan Losic*[,†,‡]



Applied Surface Science 441 (2018) 187–193

Contents lists available at ScienceDirect

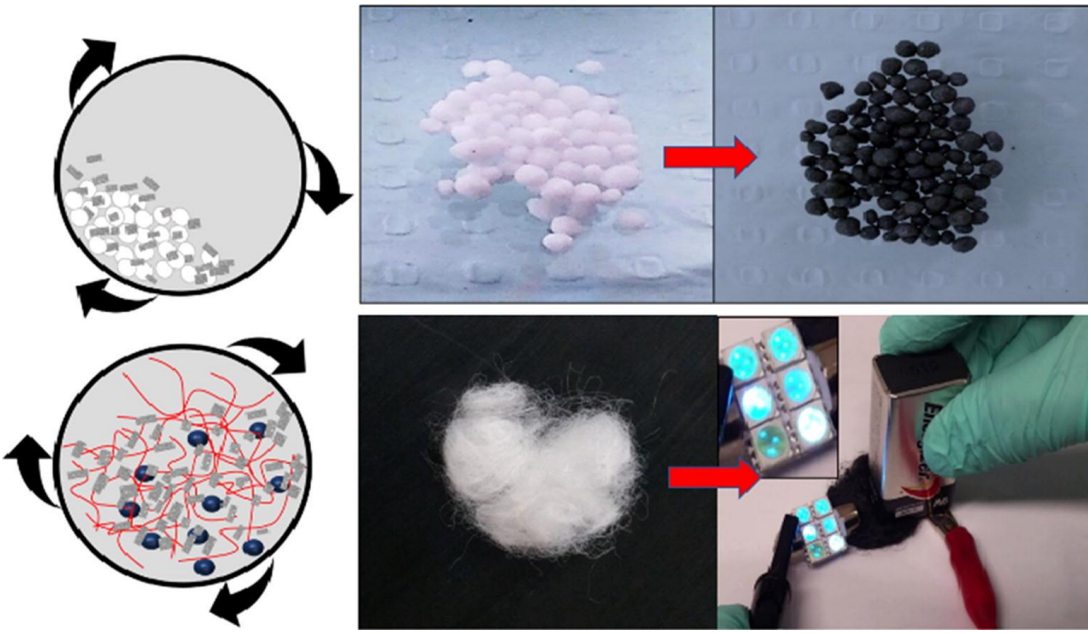
Applied Surface Science

journal homepage: www.elsevier.com/locate/apsusc

Full Length Article

Electrostatic powder coatings of pristine graphene: A new approach for coating of granular and fibril substrates

Md J. Nine, Shervin Kabiri, Tran Thanh Tung, Diana N.H. Tran, Dusan Losic *



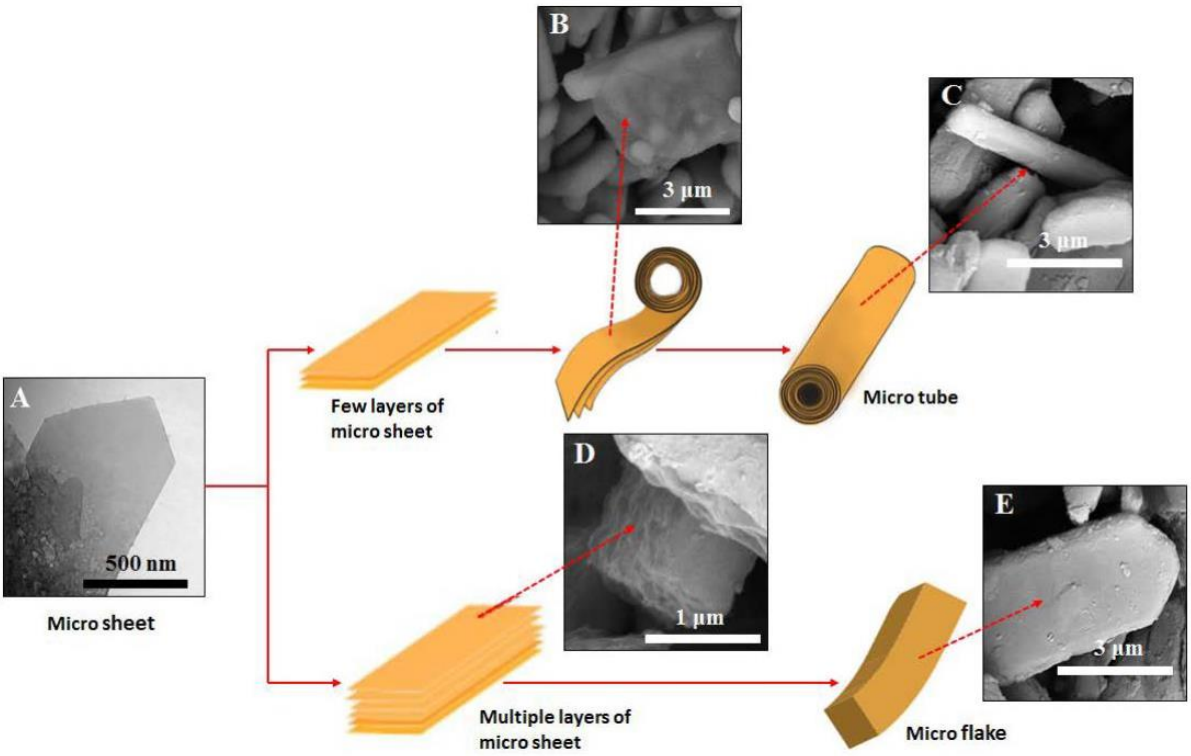
materials

MDPI

Article

A Facile Synthesis Procedure for Sulfonated Aniline Oligomers with Distinct Microstructures

Ramesh Karunagaran [1], Campbell Coghlan [2], Diana Tran [1], Tran Thanh Tung [1], Alexandre Burgun [2], Christian Doonan [2] and Dusan Losic [1,*]



Journal of Cleaner Production 185 (2018) 97–104

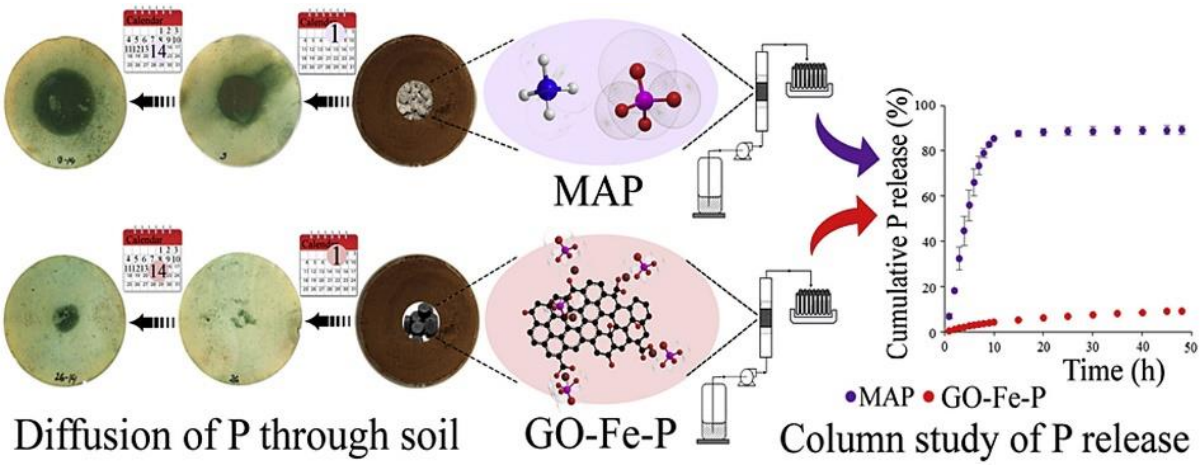
Contents lists available at ScienceDirect

Journal of Cleaner Production

journal homepage: www.elsevier.com/locate/jclepro

Graphene oxide-Fe(III) composite containing phosphate – A novel slow release fertilizer for improved agriculture management

Ivan B. Andelkovic [a, b, *], Shervin Kabiri [b], Ehsan Tavakkoli [c], Jason K. Kirby [d], Michael J. McLaughlin [a, d], Dusan Losic [b]



Science Bulletin 63 (2018) 133–142

Contents lists available at ScienceDirect

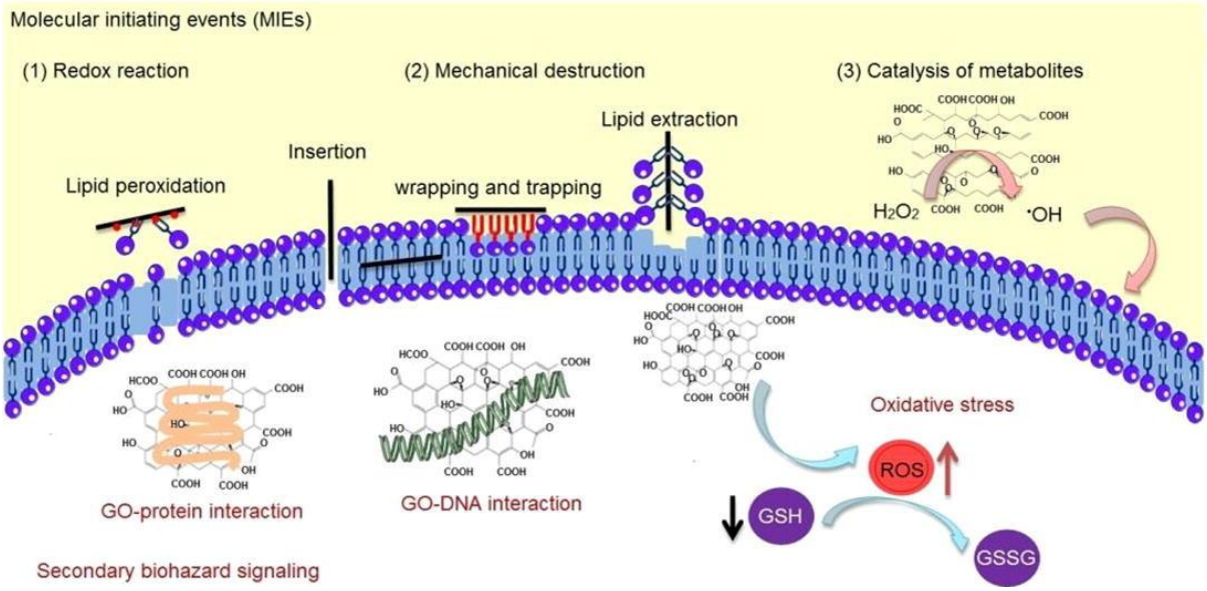
Science Bulletin

journal homepage: www.elsevier.com/locate/scib

Review

Antibacterial applications of graphene oxides: structure-activity relationships, molecular initiating events and biosafety

Huizhen Zheng [a], Ronglin Ma [a], Meng Gao [a], Xin Tian [a], Yong-Qiang Li [a], Lingwen Zeng [b,c,*], Ruibin Li [a,*]



Chemosphere 271 (2021) 129506

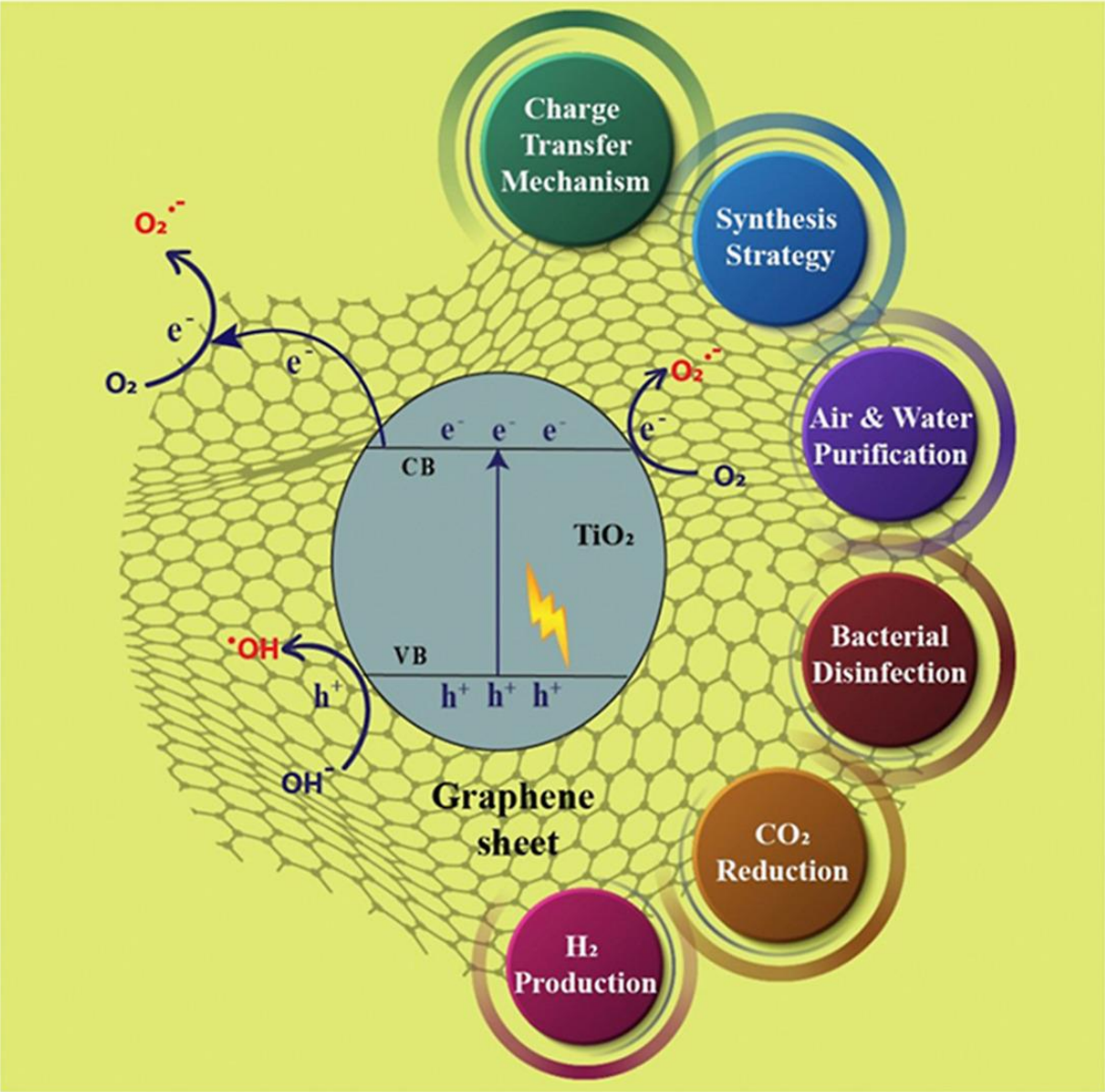
Contents lists available at ScienceDirect

Chemosphere

journal homepage: www.elsevier.com/locate/chemosphere

Graphene coupled TiO_2 photocatalysts for environmental applications: A review

Nisha T. Padmanabhan [c], Nishanth Thomas [a, b], Jesna Louis [c, d], Dhanu Treasa Mathew [c], Priyanka Ganguly [a, b], Honey John [c, d], Suresh C. Pillai [a, b, *]



BASIC SCIENCE

Nanomedicine: Nanotechnology, Biology, and Medicine
14 (2018) 2365 – 2374

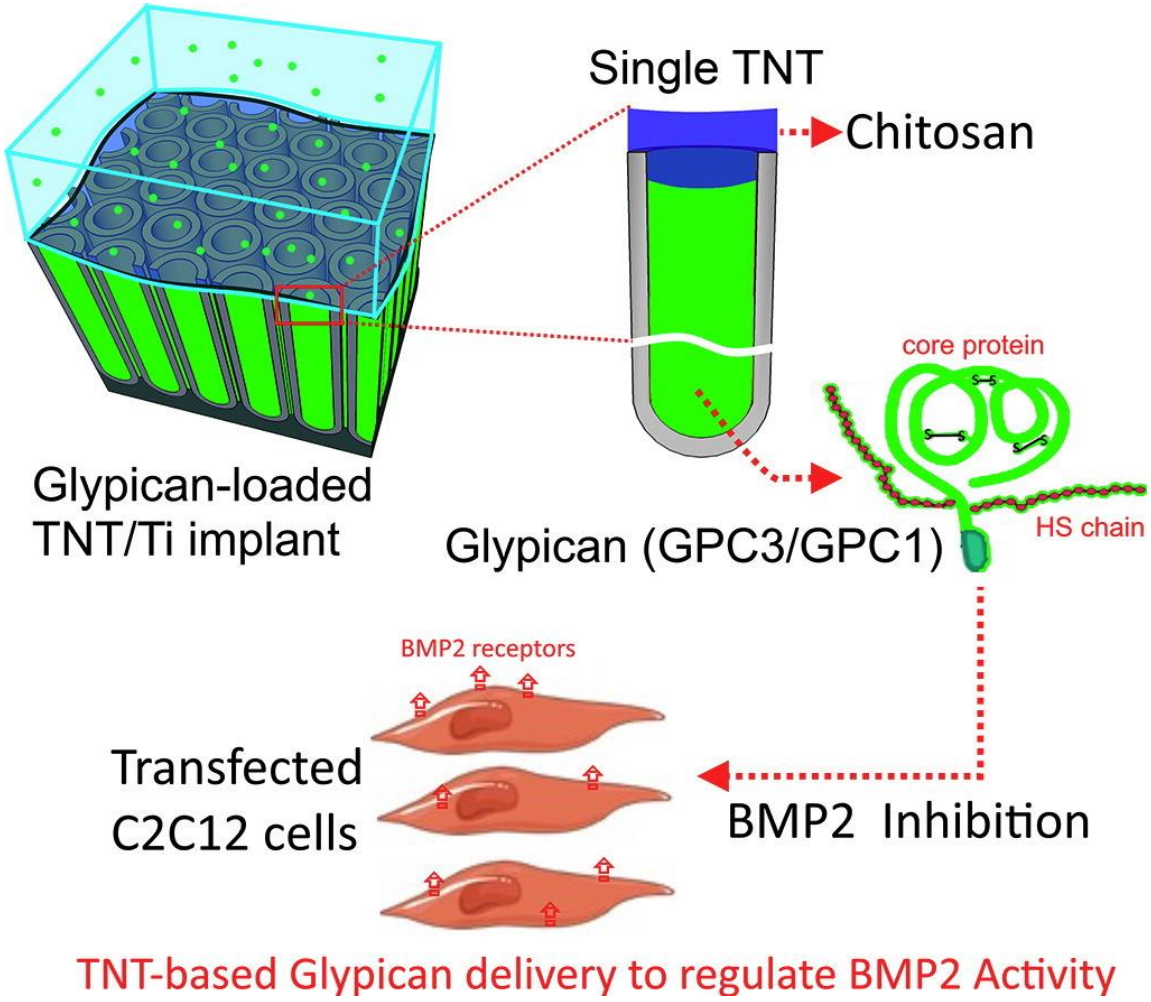
Research Article

nanomedjournal.com

Special Topic: Two-Dimensional Biomaterials in Regenerative Medicine

Glypican-based drug releasing titania implants to regulate BMP2 bioactivity as a potential approach for craniosynostosis therapy

Manpreet Bariana[a], Prem Dwivedi[b], Sarbin Ranjitkar[a], John A. Kaidonis[a], Dusan Losic[c,*], Peter J. Anderson[a,b,d,1]



TNT-based Glypican delivery to regulate BMP2 Activity

ACS Sustainable Chemistry & Engineering

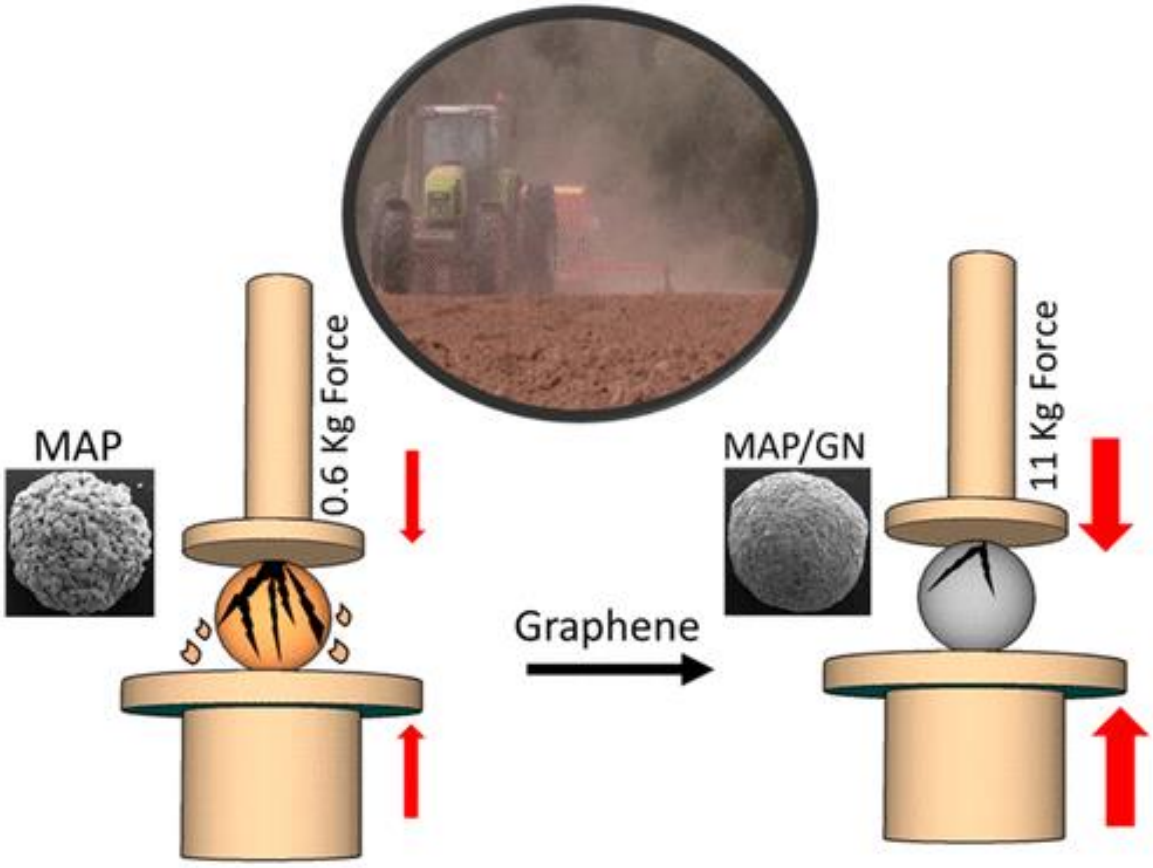
Research Article

Cite This: ACS Sustainable Chem. Eng. 2018, 6, 1299−1309

pubs.acs.org/journal/ascecg

Cogranulation of Low Rates of Graphene and Graphene Oxide with Macronutrient Fertilizers Remarkably Improves Their Physical Properties

Shervin Kabiri,[†,§] Roslyn Baird,[‡] Diana N. H. Tran,[†,§] Ivan Andelkovic,[†,‡] Mike J. McLaughlin,[*,‡,§] and Dusan Losic[*,†,§]



Carbon 127 (2018) 113–121

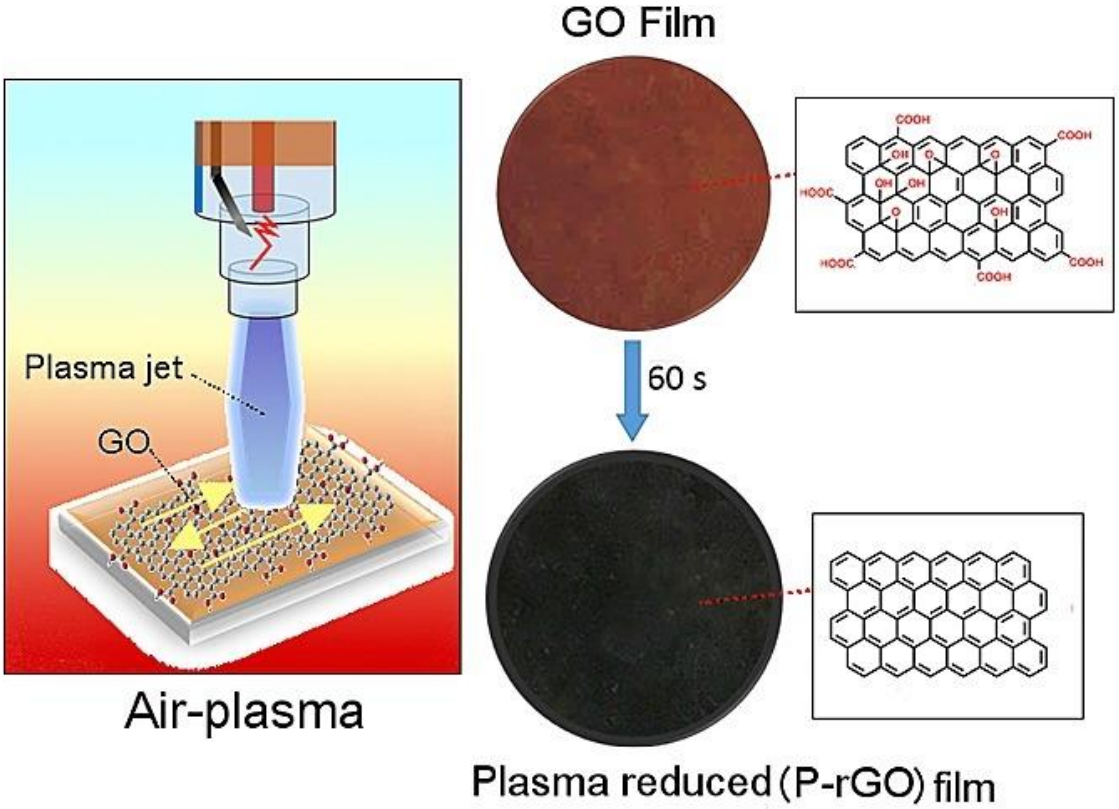
Contents lists available at ScienceDirect

Carbon

journal homepage: www.elsevier.com/locate/carbon

Scanning atmospheric plasma for ultrafast reduction of graphene oxide and fabrication of highly conductive graphene films and patterns

Faisal Alotaibi [a, b], Tran T. Tung [a, b], Md J. Nine [a, b], Shervin Kabiri [a, b], Mahmoud Moussa [a, b], Diana N.H. Tran [a, b], Dusan Losic [a, b, *]

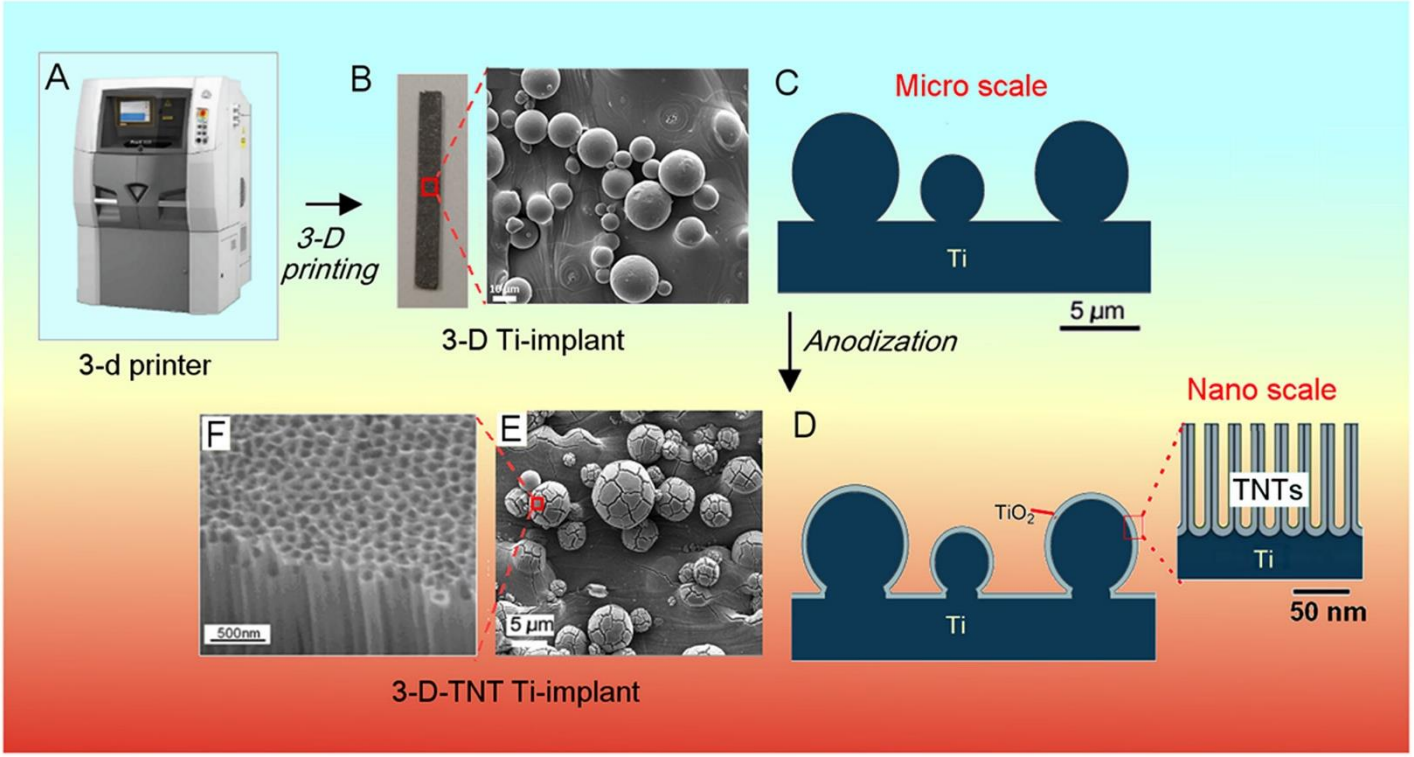


JOURNAL OF TISSUE ENGINEERING AND REGENERATIVE MEDICINE
J Tissue Eng Regen Med 2017; **11**: 3313–3325.
Published online 7 December 2016 in Wiley Online Library (wileyonlinelibrary.com) **DOI:** 10.1002/term.2239

RESEARCH ARTICLE

Anodized 3D–printed titanium implants with dual micro- and nano-scale topography promote interaction with human osteoblasts and osteocyte-like cells

Karan Gulati[1†], Matthew Prideaux[2†], Masakazu Kogawa[2], Luis Lima-Marques[3], Gerald J. Atkins[2‡], David M. Findlay[2‡] and Dusan Losic[1*‡]



Colloids and Surfaces B: Biointerfaces 150 (2017) 59–67

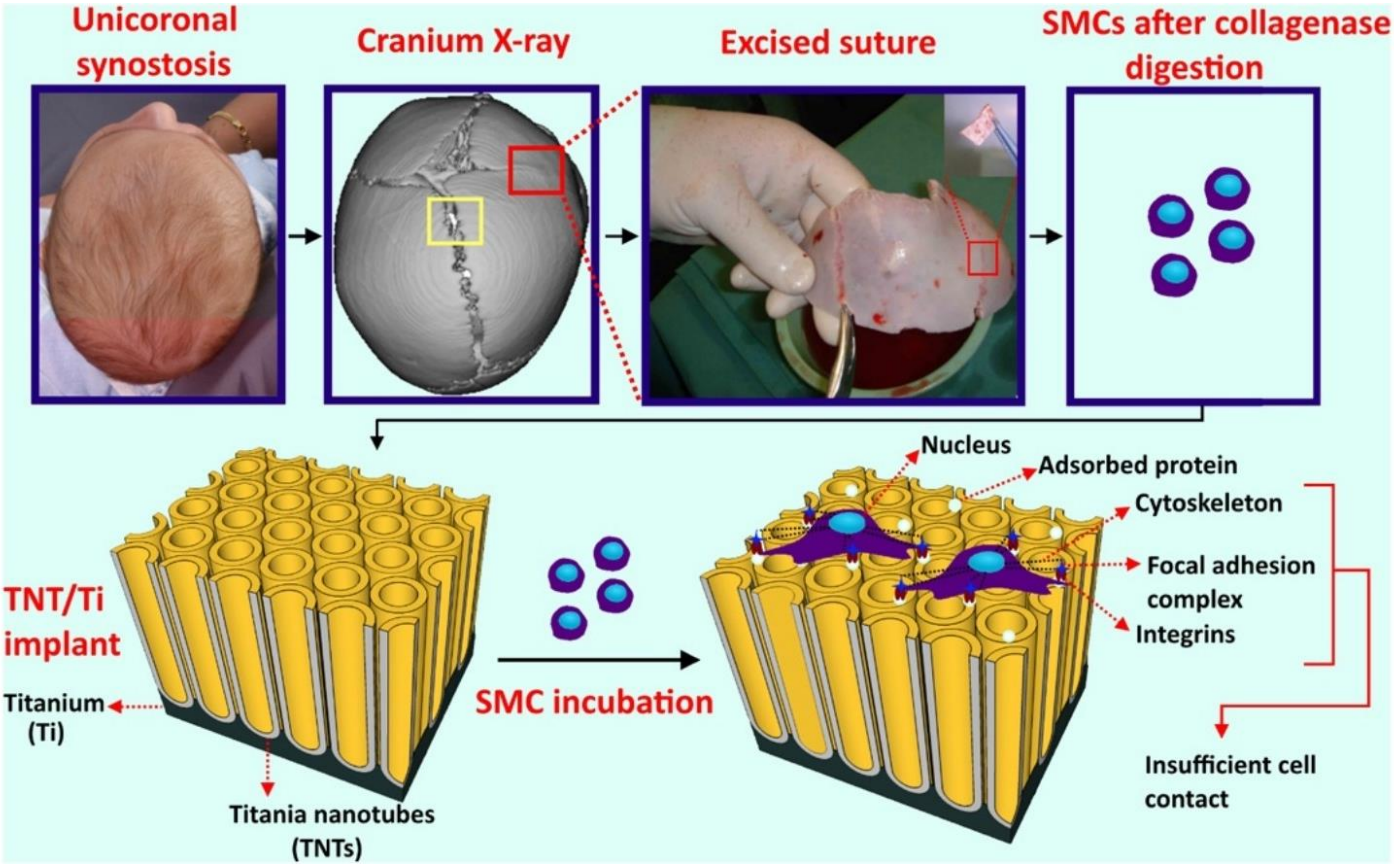
Contents lists available at ScienceDirect

Colloids and Surfaces B: Biointerfaces

journal homepage: www.elsevier.com/locate/colsurfb

Biological response of human suture mesenchymal cells to Titania nanotube-based implants for advanced craniosynostosis therapy

Manpreet Bariana[a,*], Prem Dwivedi[b], Sarbin Ranjitkar[a], John A. Kaidonis[a], Dusan Losic[c,*], Peter J. Anderson[a,d,**]

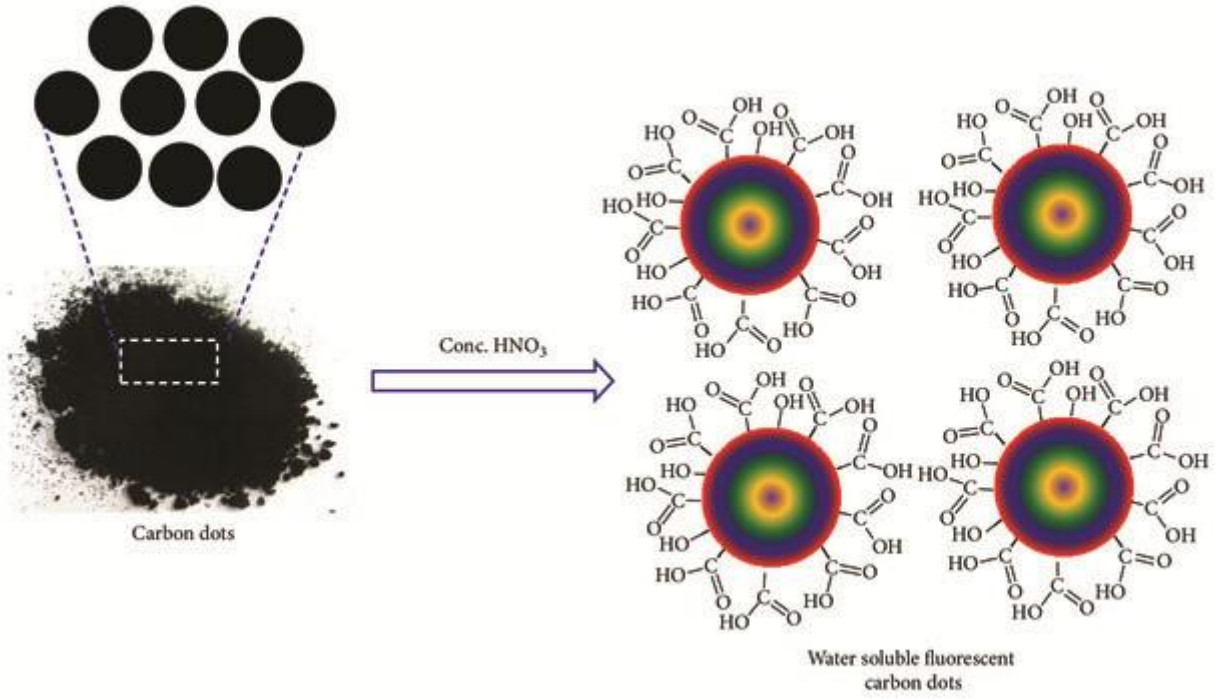


Hindawi
Journal of Nanomaterials
Volume 2017, Article ID 7029731, 10 pages
https://doi.org/10.1155/2017/7029731

Research Article

Water Soluble Fluorescent Carbon Nanodots from Biosource for Cells Imaging

Kumud Malika Tripathi,[1] Tuan Sang Tran,[1] Tran Thanh Tung,[2] Dusan Losic,[2] and TaeYoung Kim[1]



Carbon 117 (2017) 252–262

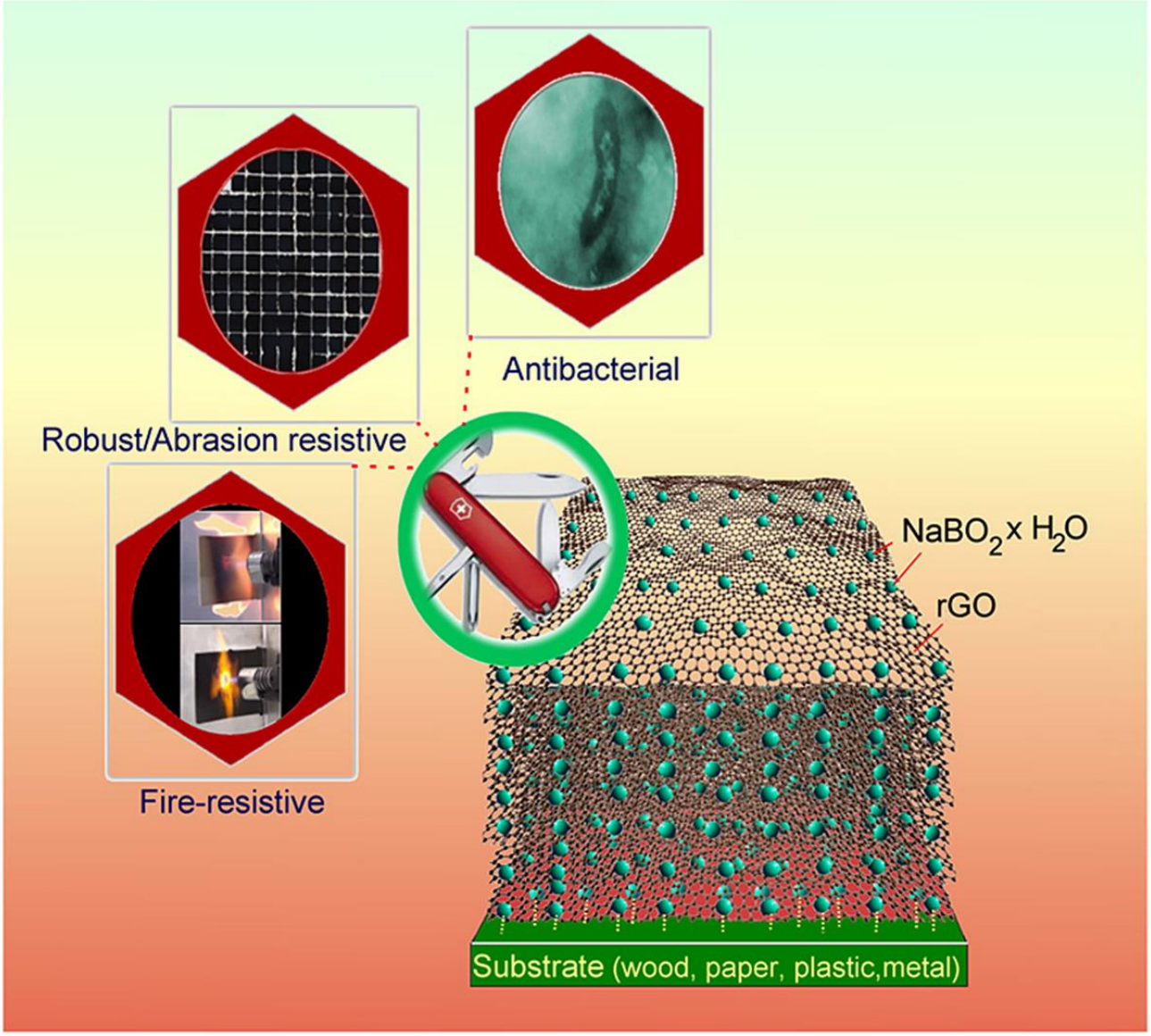
Contents lists available at ScienceDirect

Carbon

journal homepage: www.elsevier.com/locate/carbon

Interlayer growth of borates for highly adhesive graphene coatings with enhanced abrasion resistance, fire-retardant and antibacterial ability

Md J. Nine, Diana N.H. Tran, Ahmed ElMekawy, Dusan Losic*



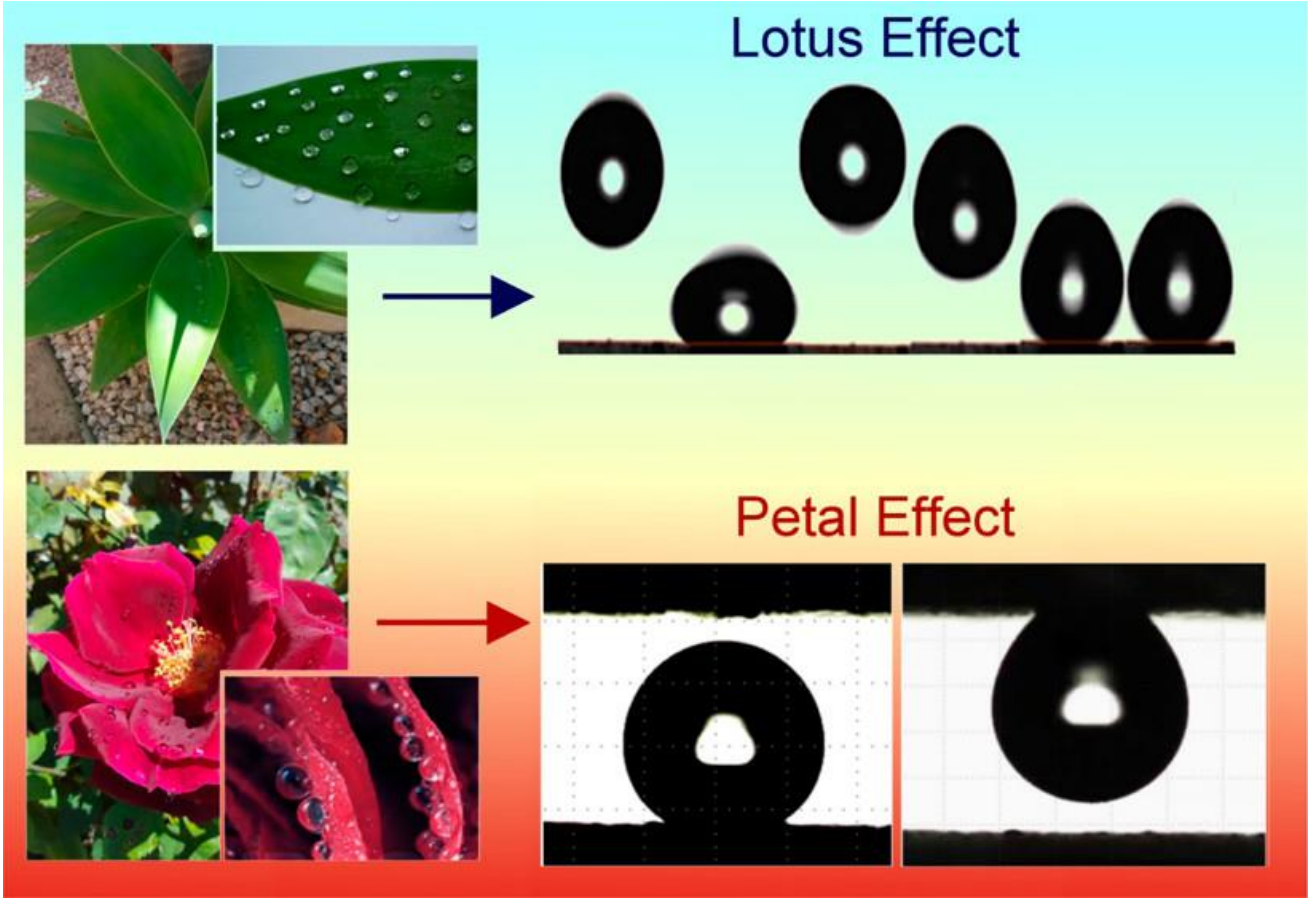
ACS APPLIED MATERIALS & INTERFACES

Research Article

www.acsami.org

Facile Adhesion-Tuning of Superhydrophobic Surfaces between "Lotus" and "Petal" Effect and Their Influence on Icing and Deicing Properties

Md J. Nine, Tran Thanh Tung, Faisal Alotaibi, Diana N. H. Tran, and Dusan Losic*



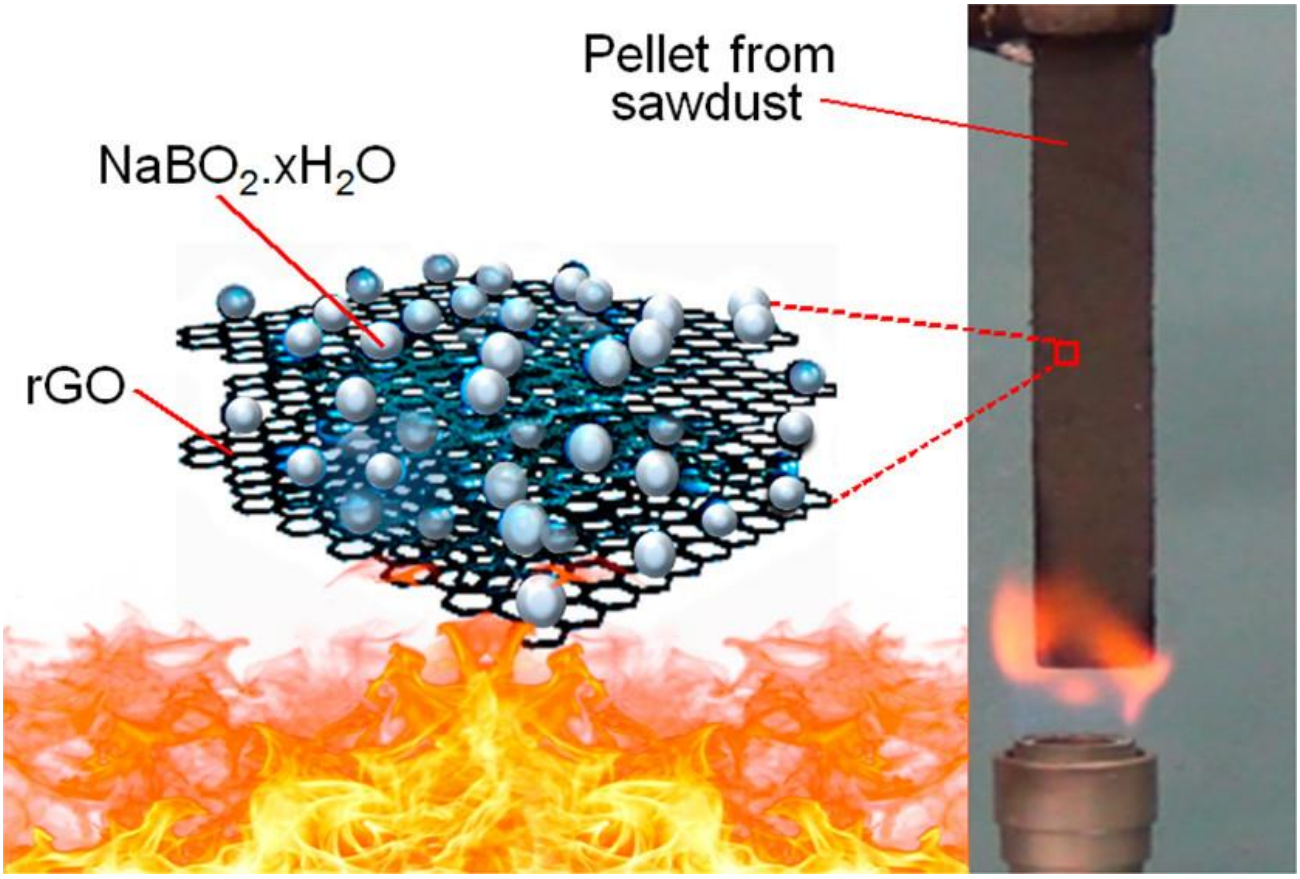
ACS APPLIED MATERIALS & INTERFACES

Research Article

www.acsami.org

Graphene-Borate as an Efficient Fire Retardant for Cellulosic Materials with Multiple and Synergetic Modes of Action

Md J. Nine, Diana N. H. Tran, Tran Thanh Tung, Shervin Kabiri, and Dusan Losic*



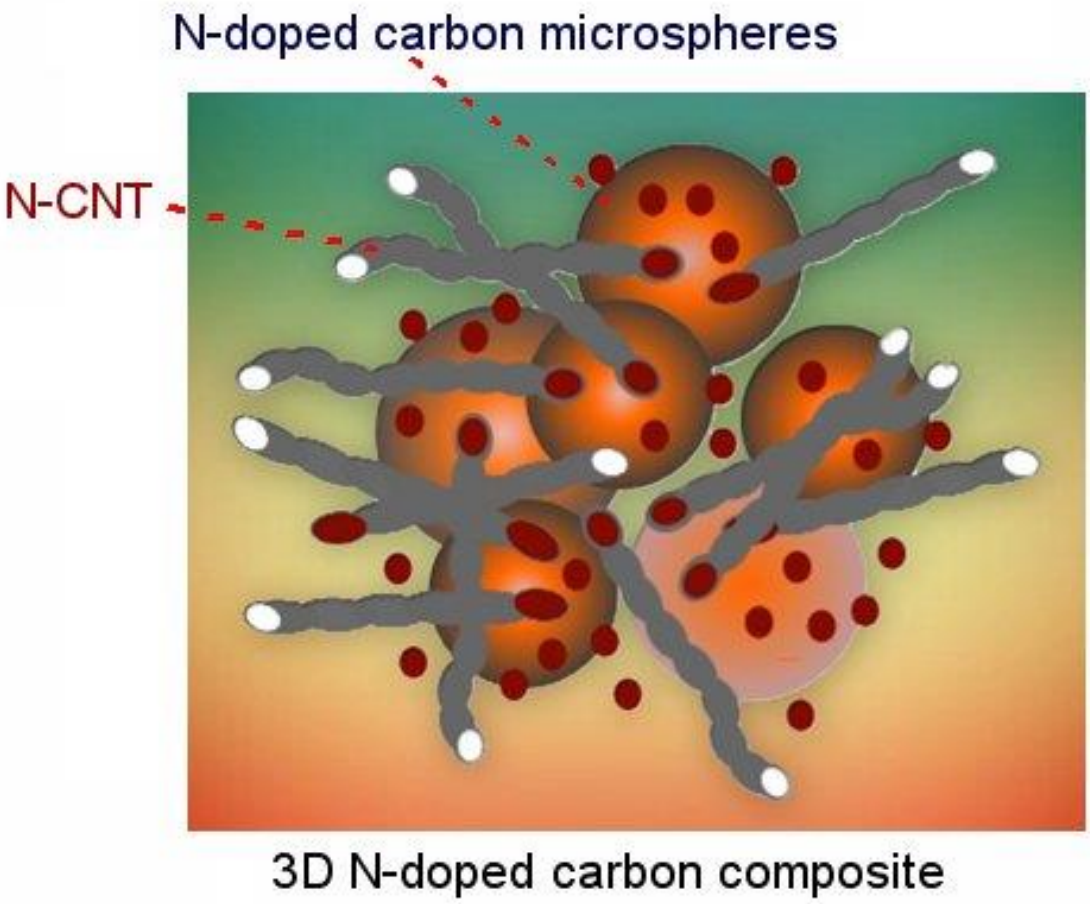
materials

MDPI

Article

A Unique 3D Nitrogen-Doped Carbon Composite as High-Performance Oxygen Reduction Catalyst

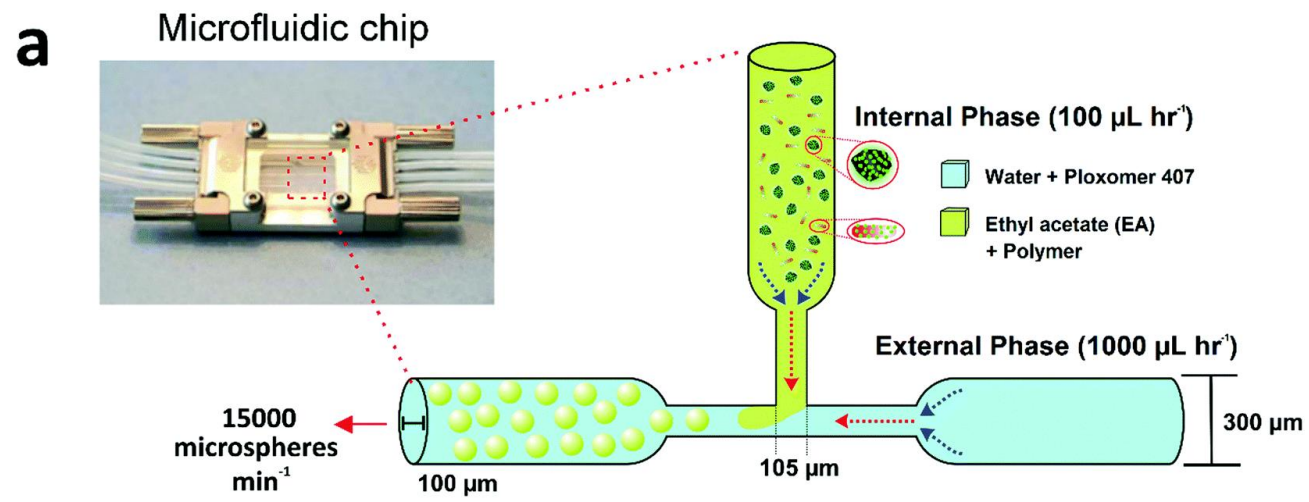
Ramesh Karunagaran [1], Tran Thanh Tung [1], Cameron Shearer [3], Diana Tran [1], Campbell Coghlan [2], Christian Doonan [2,*] and Dusan Losic [1,*]

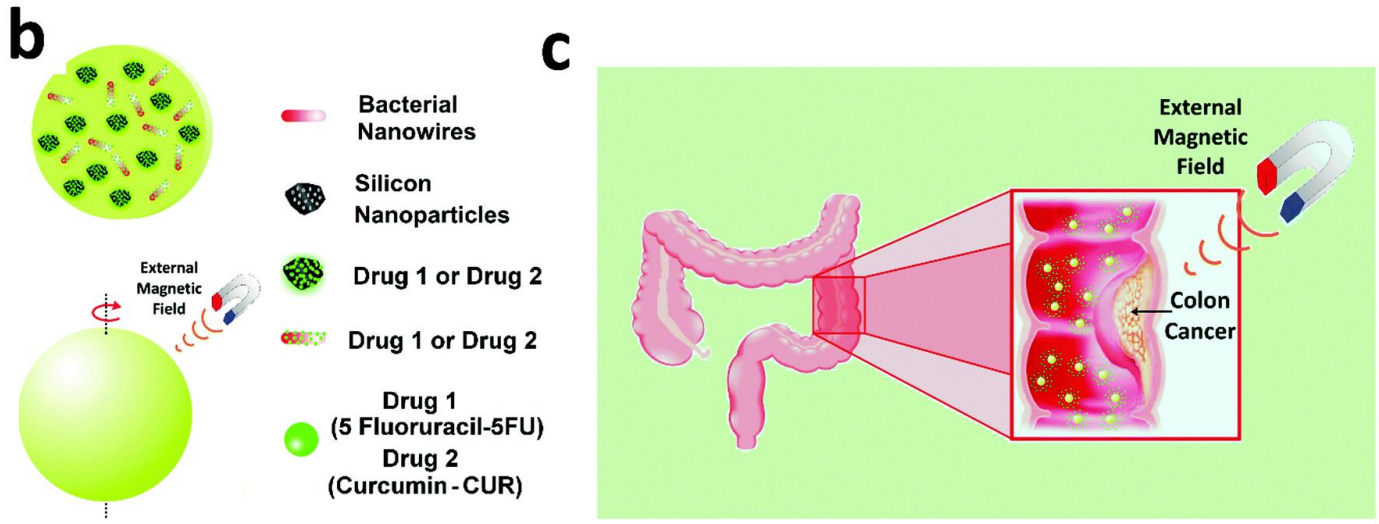


DOI: 10.1039/C7TB00588A (Paper) J. Mater. Chem. B, 2017, 5, 4097-4109

Multifunctional microspherical magnetic and pH responsive carriers for combination anticancer therapy engineered by droplet-based microfluidics†

Shaheer Maher [ab], Abel Santos *[acd], Tushar Kumeria [a], Gagandeep Kaur [e], Martin Lambert [f], Peter Forward [g], Andreas Evdokiou *[e] and Dusan Losic *[a]





Multifunctional microspheres
(pH responsive/magnetic)

Journal of Colloid and Interface Science 491 (2017) 375–389

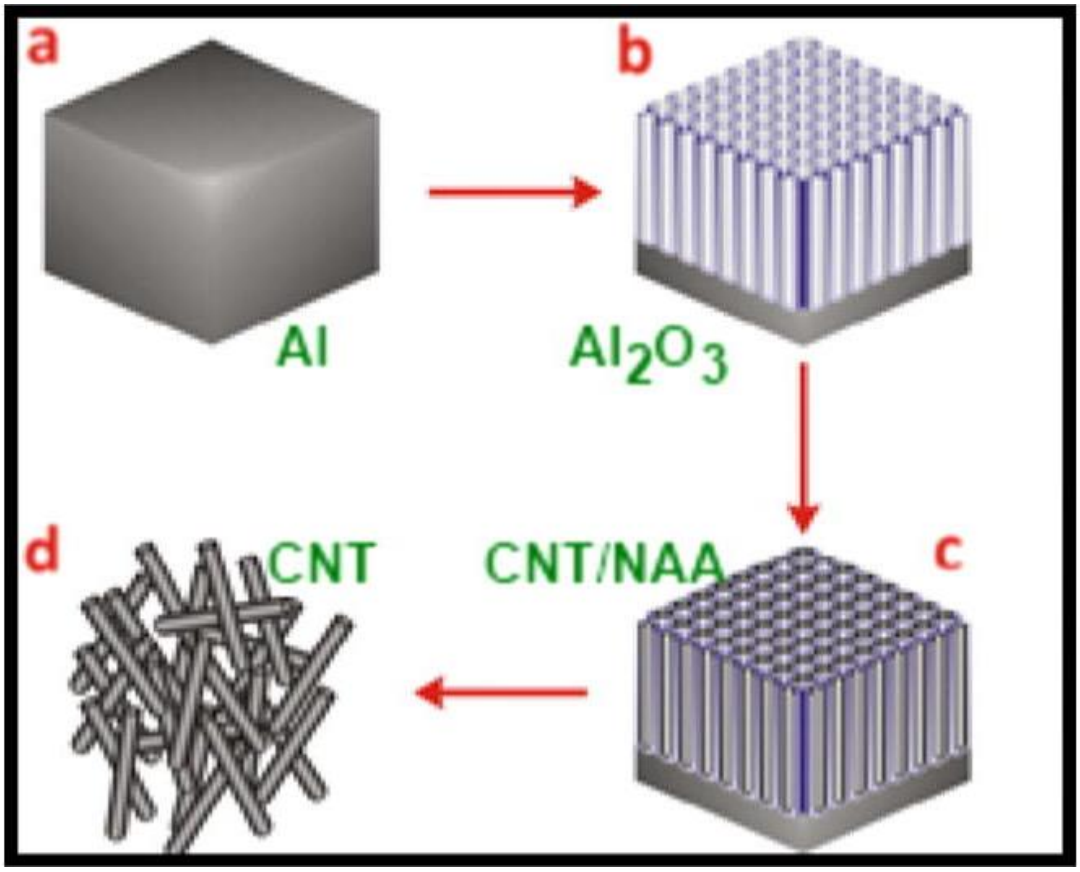
Contents lists available at ScienceDirect

Journal of Colloid and Interface Science

journal homepage: www.elsevier.com/locate/jcis

Size- and shape-controlled synthesis of well-organised carbon nanotubes using nanoporous anodic alumina with different pore diameters

Amine Mezni [a,b,*], Tariq Altalhi [b,c], Nesrine Ben Saber [a], Ali Aldalbahi [d], Seifeddine Boulehmi [e], Abel Santos [c], Dusan Losic [c]



THE JOURNAL OF PHYSICAL CHEMISTRY C

Article

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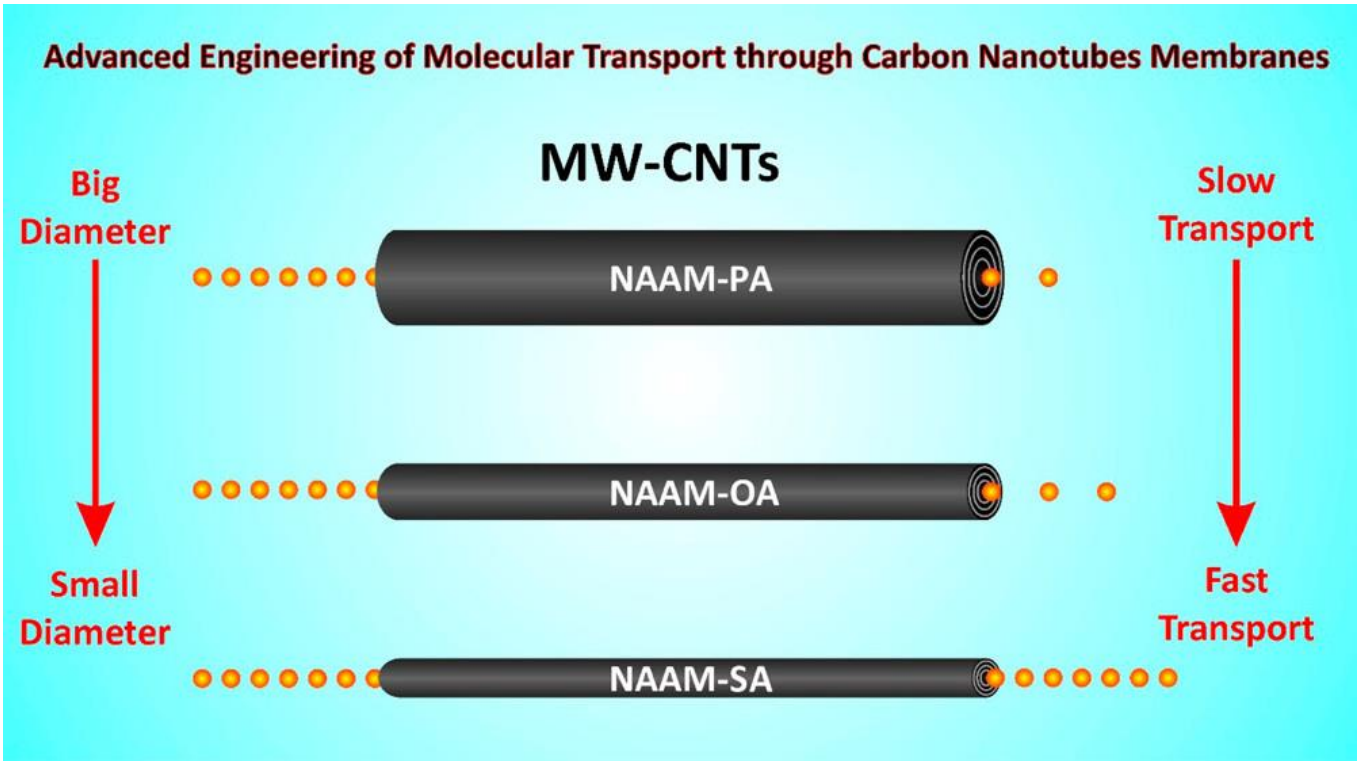
Carbon Nanotubes–Nanoporous Anodic Alumina Composite Membranes: Influence of Template on Structural, Chemical, and Transport Properties

Mohammed Alsawat,[†,‡] Tariq Altalhi,[†,‡] Abel Santos,[*,†,§,∥] and Dusan Losic[*,†]



ACS APPLIED MATERIALS & INTERFACES

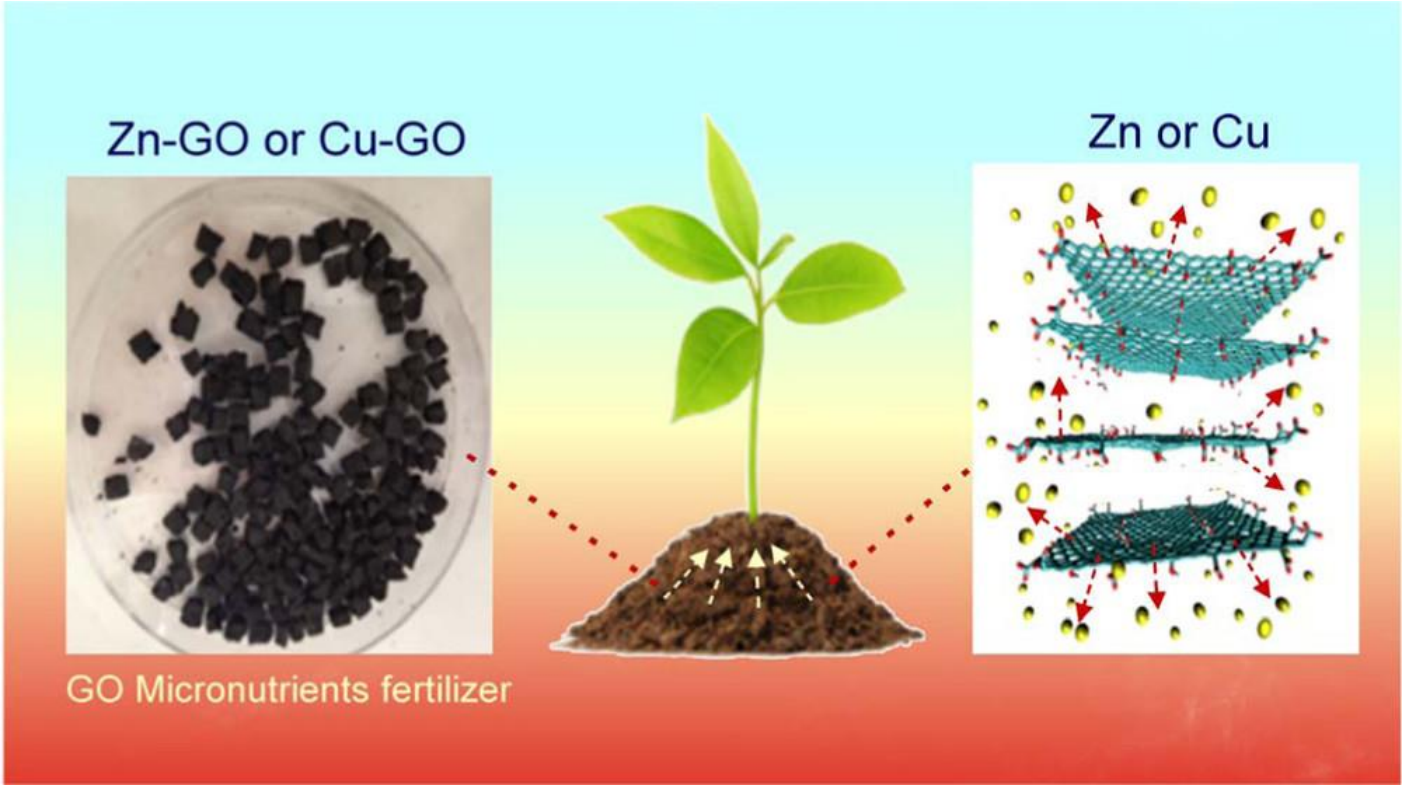
Research Article

Cite This: ACS Appl. Mater. Interfaces 2017, 9, 43325−43335

www.acsami.org

Graphene Oxide: A New Carrier for Slow Release of Plant Micronutrients

Shervin Kabiri,[†,§] Fien Degryse,[‡] Diana N. H. Tran,[†,§] Rodrigo C. da Silva,[‡] Mike J. McLaughlin,[*,‡] and Dusan Losic[*,†,§]



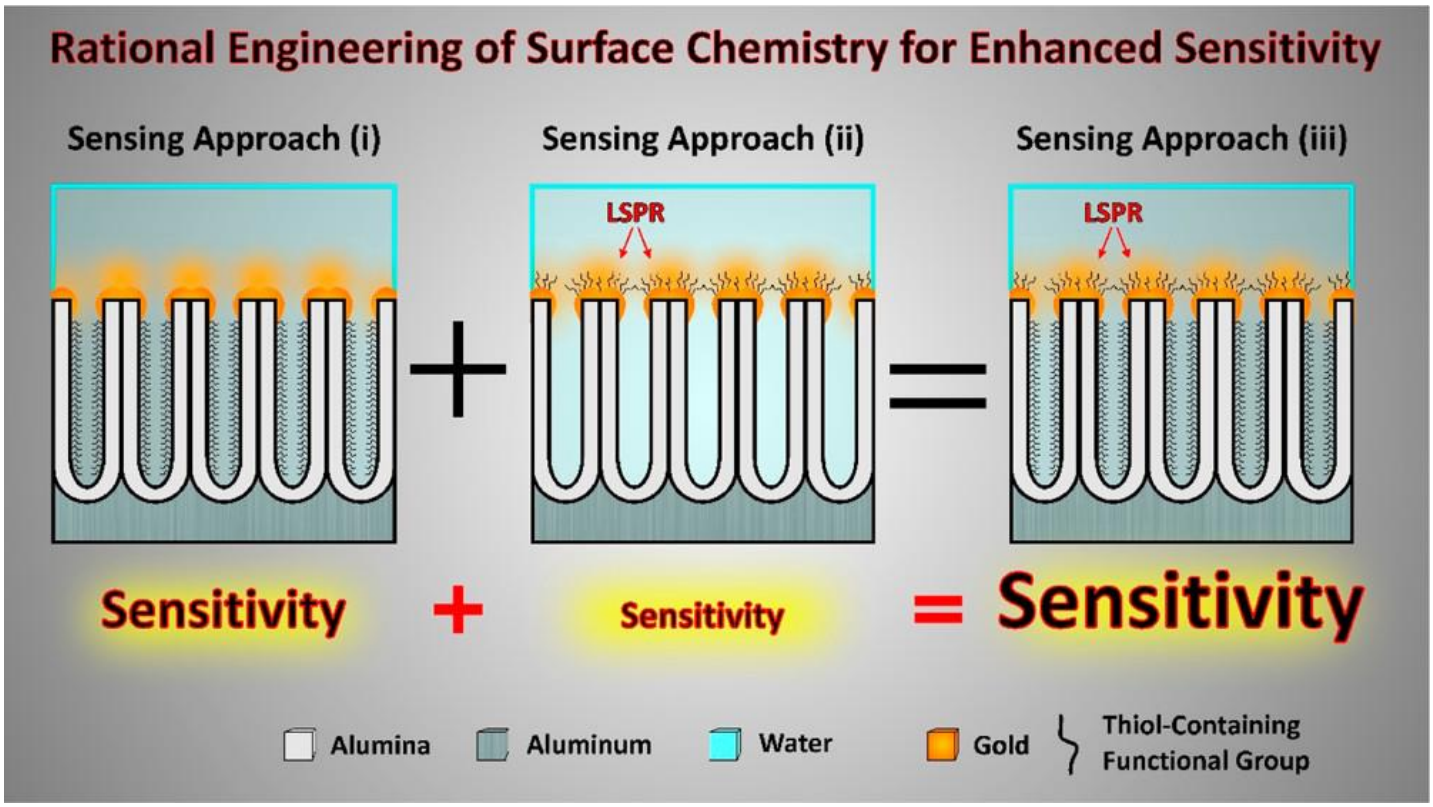
ACS APPLIED MATERIALS & INTERFACES

Research Article

www.acsami.org

Engineering of Surface Chemistry for Enhanced Sensitivity in Nanoporous Interferometric Sensing Platforms

Cheryl Suwen Law,[†,§] Georgina M. Sylvia,[‡,§,∥] Madieh Nemati,[†] Jingxian Yu,[‡,§,∥] Dusan Losic,[†] Andrew D. Abell,[*,‡,§,∥] and Abel Santos[*,†,‡,§]



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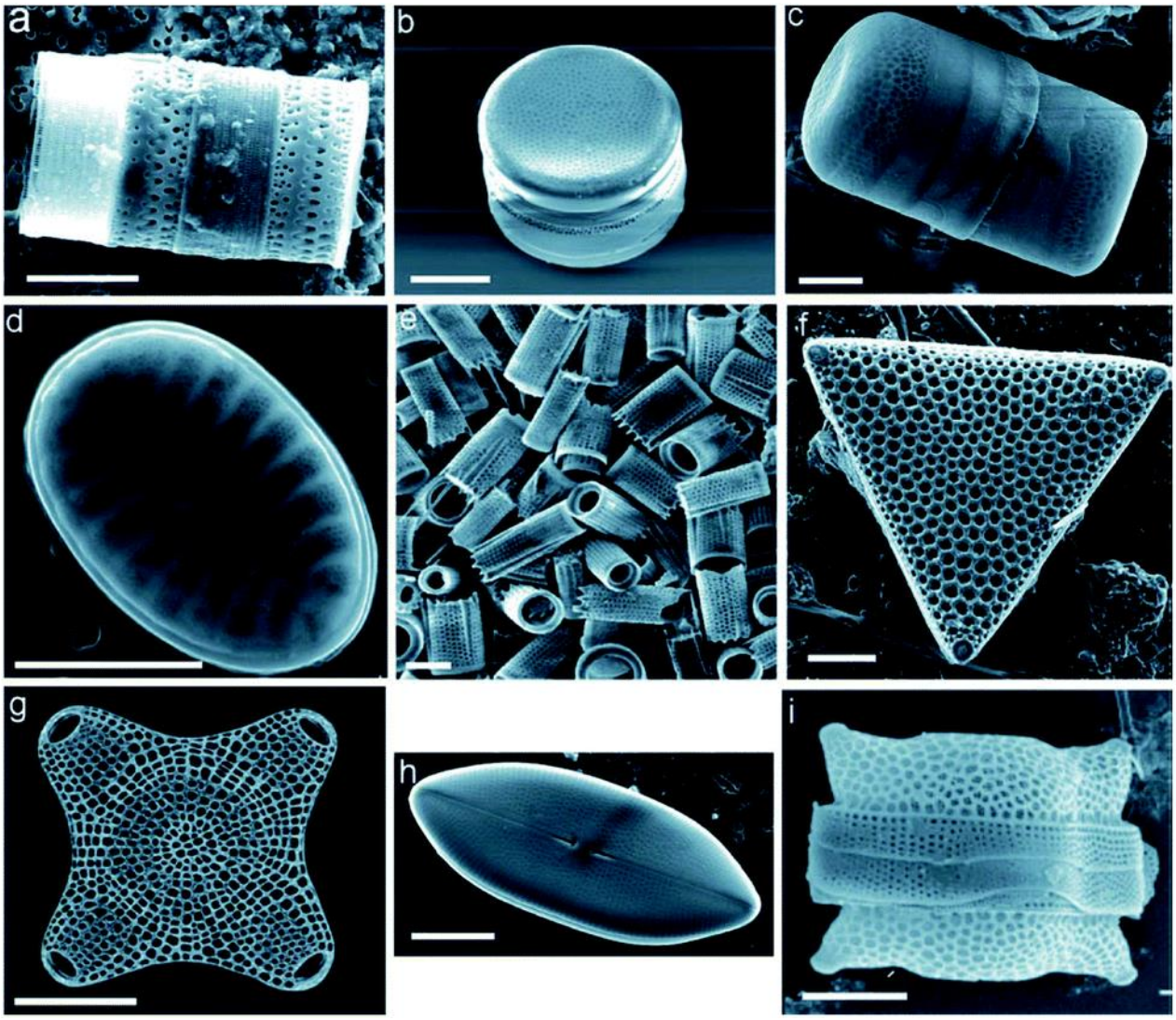
DOI: 10.1039/C7TA02045G (Review Article) *J. Mater. Chem. A*, 2017, **5**, 8847-8859

Diatom silica, an emerging biomaterial for energy conversion and storage

Xiao Wen Sun [a], **Yu Xin Zhang** *[a] and **Dusan Losic** *[b]



www.nature.com/scientificreports

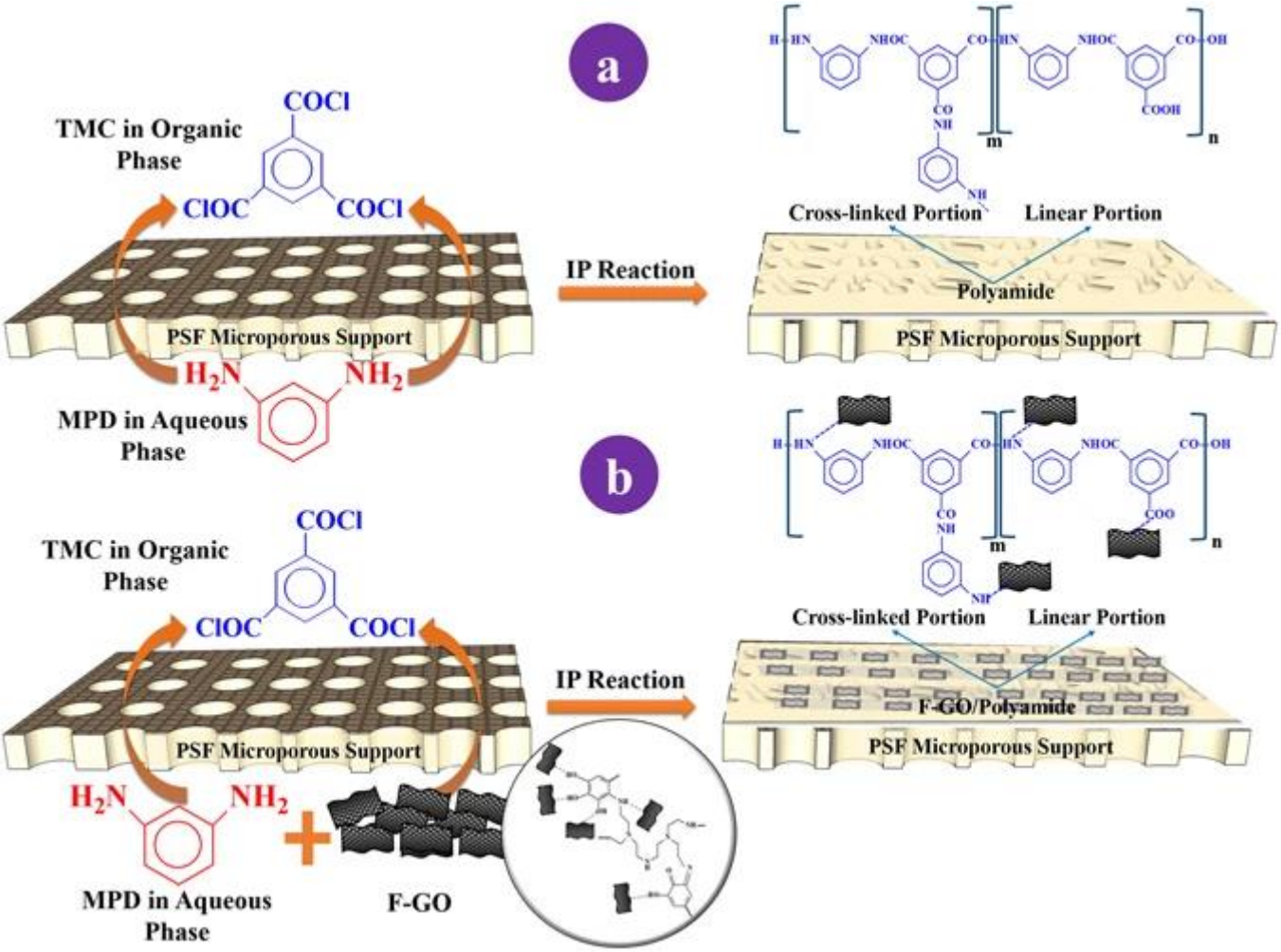
SCIENTIFIC REPORTS

OPEN

A Novel Fabrication Approach for Multifunctional Graphene-based Thin Film Nano-composite Membranes with Enhanced Desalination and Antibacterial Characteristics

Received: 3 February 2017
Accepted: 29 June 2017
Published online: 08 August 2017

Hanaa M. Hegab[1,2], Ahmed ElMekawy[3,4], Thomas G. Barclay[5], Andrew Michelmore[6], Linda Zou[1,7], Dusan Losic[4], Christopher P. Saint[1,6] & Milena Ginic-Markovic[6]



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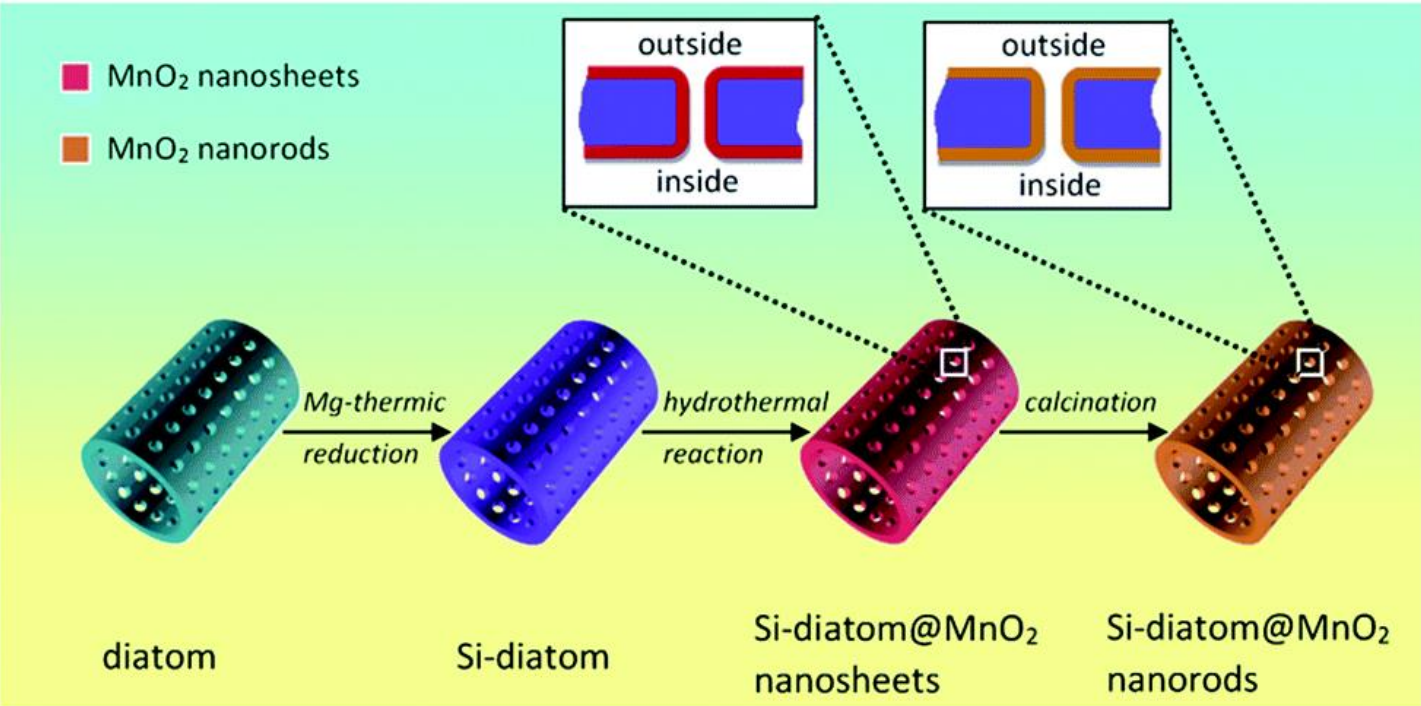
DOI: 10.1039/C6TA11210B (Paper) J. Mater. Chem. A, 2017, 5, 10856-10865

Morphology-controlled MnO_2 modified silicon diatoms for high-performance asymmetric supercapacitors†

Qiu Jian Le [a], Tian Wang [a], Diana N. H. Tran [b], Fan Dong [c], Yu Xin Zhang *[a] and Dusan Losic *[b]



Materials and Design 125 (2017) 1–10

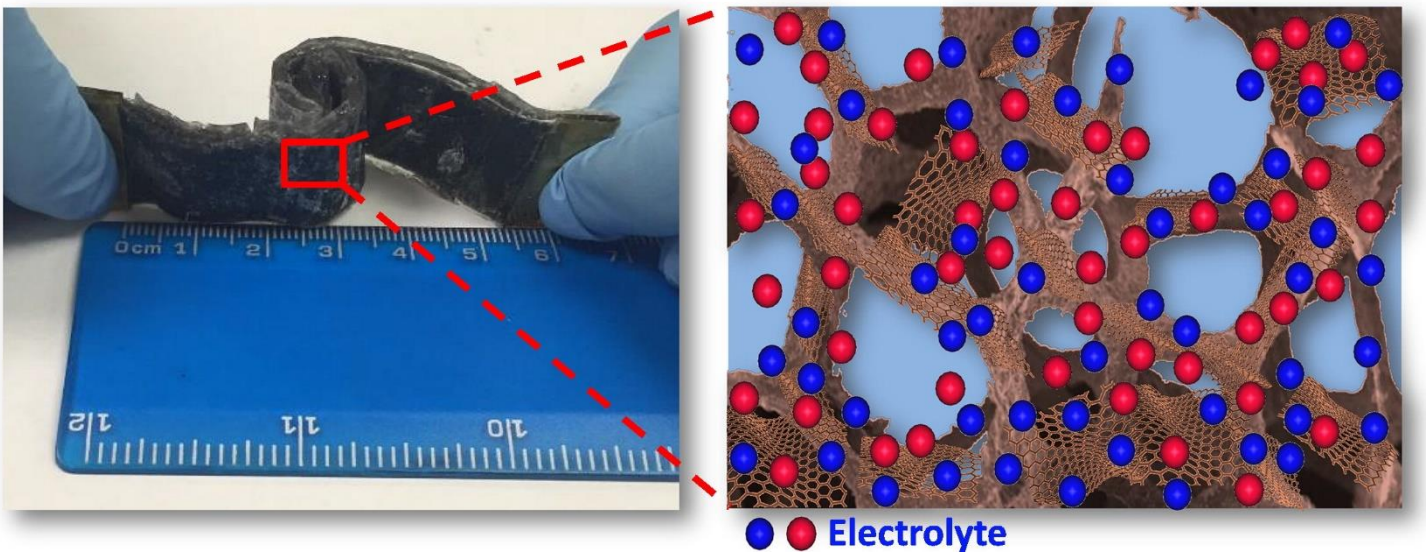
Contents lists available at ScienceDirect

Materials and Design

journal homepage: www.elsevier.com/locate/matdes

Development of flexible supercapacitors using an inexpensive graphene/PEDOT/MnO_2 sponge composite

Mahmoud Moussa [a,b,c], Ge Shi [a], Hao Wu [a], Zhiheng Zhao [a], Nicolas H. Voelcker [a,d], Dusan Losic [c], Jun Ma [a,*]



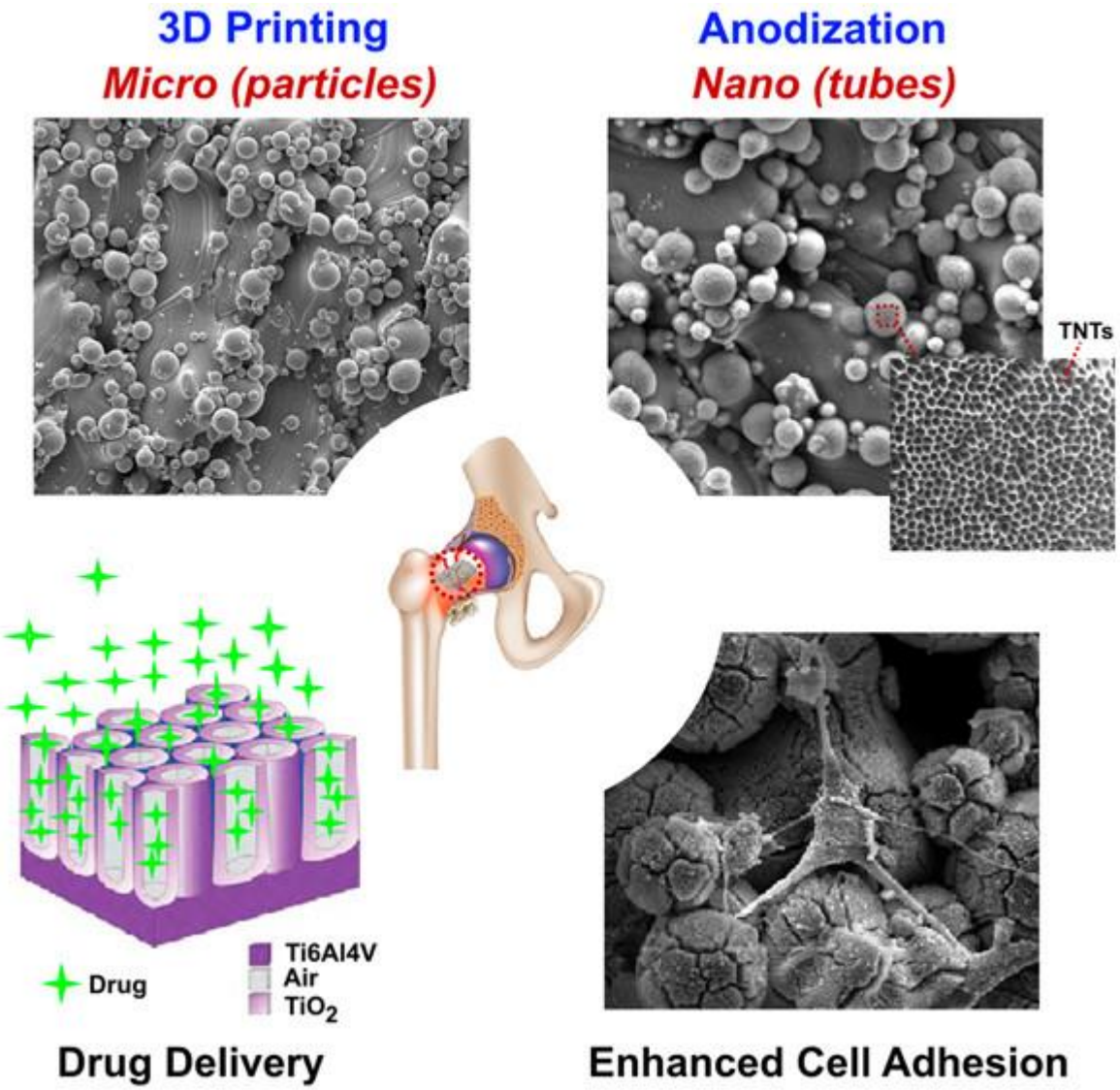
ACS APPLIED MATERIALS & INTERFACES

Research Article

www.acsami.org

Engineering of Micro- to Nanostructured 3D-Printed Drug-Releasing Titanium Implants for Enhanced Osseointegration and Localized Delivery of Anticancer Drugs

Shaheer Maher,[†,‡] Gagandeep Kaur,[†] Luis Lima-Marques,[§] Andreas Evdokiou,[∥] and Dusan Losic*,[†]



Journal of Drug Delivery Science and Technology 41 (2017) 351–358

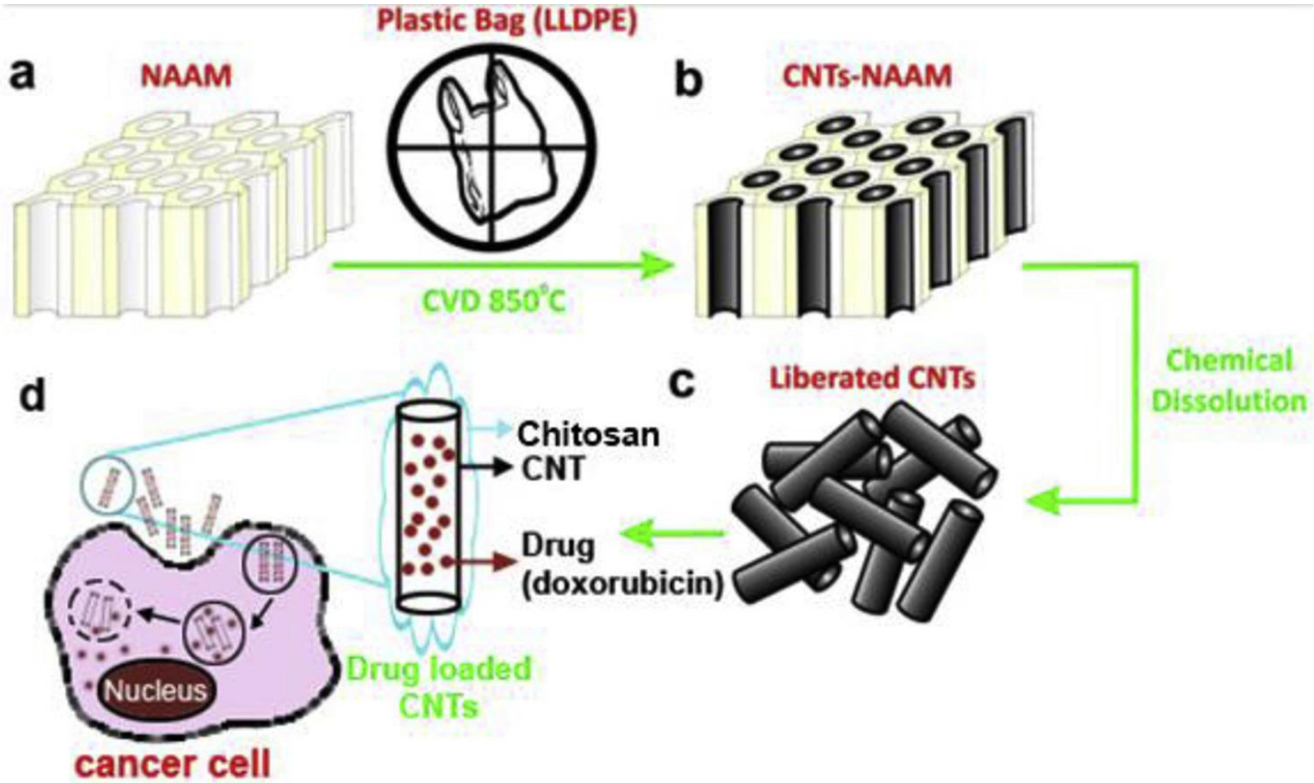
Contents lists available at ScienceDirect

Journal of Drug Delivery Science and Technology

journal homepage: www.elsevier.com/locate/jddst

Highly biocompatible carbon nanocapsules derived from plastic waste for advanced cancer therapy

Amine Mezni [a, b, *], Nesrine Ben Saber [a], A.A. Alhadhrami [b], Adil Gobouri [c], Ali Aldalbahi [d], S. Hay [e], Abel Santos [b], Dusan Losic [b], Tariq Altalhi [b, c, **]



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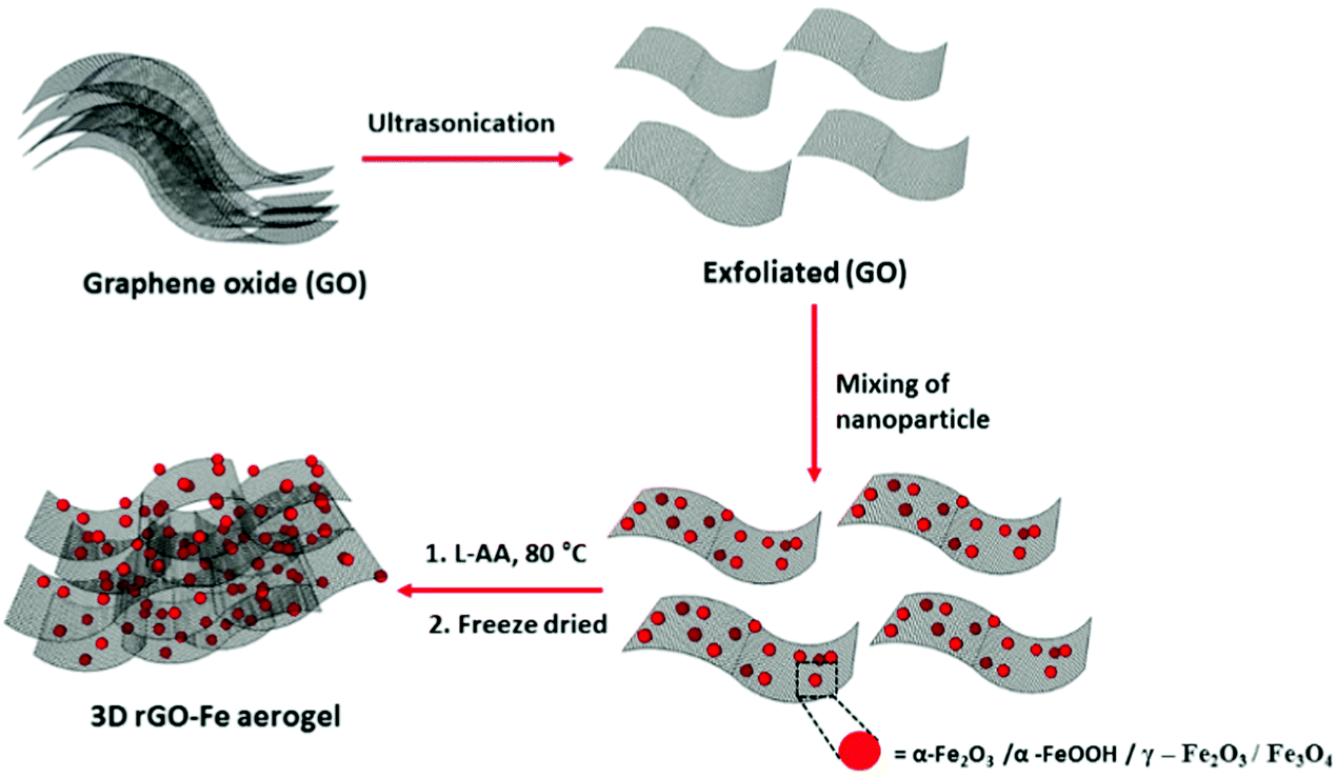
DOI: 10.1039/C7NJ02979A (Paper) *New J. Chem.*, 2017, **41**, 15180-15186

Study of iron oxide nanoparticle phases in graphene aerogels for oxygen reduction reaction†

Ramesh Karunagaran [a], Campbell Coghlan [b], Tran Thanh Tung [a], Shervin Kabiri [a], Diana N. H. Tran [a], Christian J. Doonan *[b] and Dusan Losic *[a]



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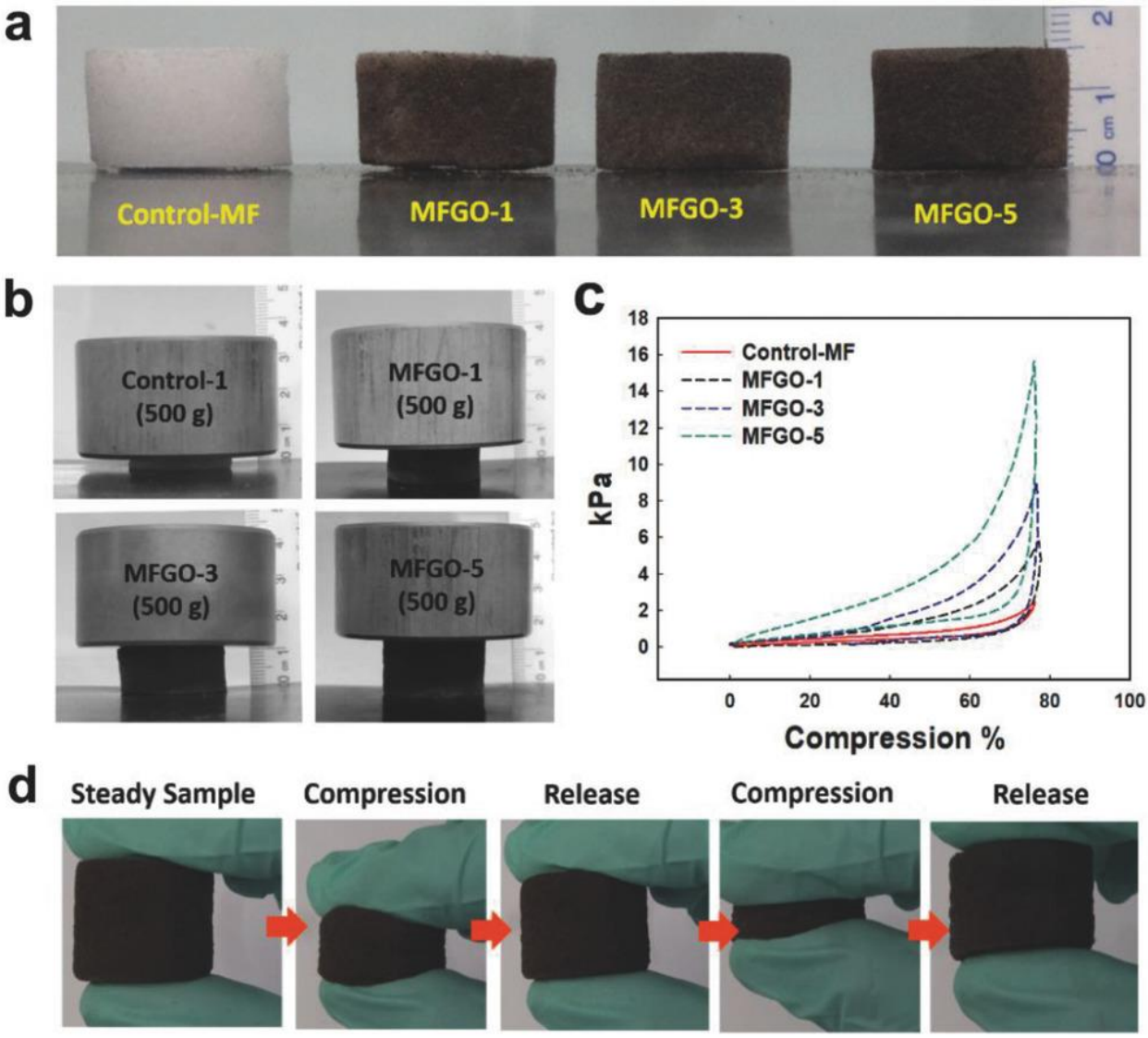
www.afm-journal.de

Graphene Oxide-Based Lamella Network for Enhanced Sound Absorption

*Md Julker Nine, Md Ayub, Anthony C. Zander, Diana N. H. Tran, Benjamin S. Cazzolato, and Dusan Losic**



ACS APPLIED MATERIALS & INTERFACES

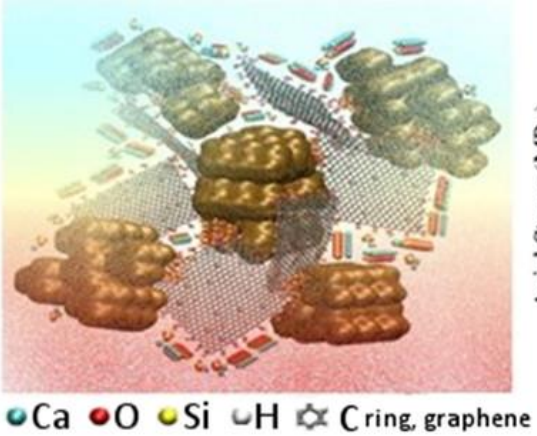
Research Article

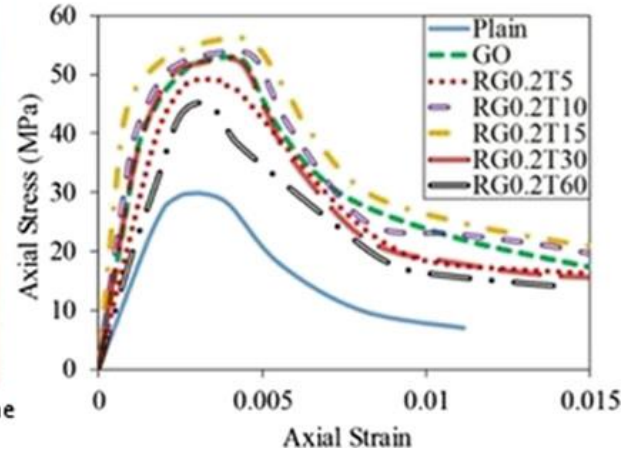
Cite This: ACS Appl. Mater. Interfaces 2017, 9, 43275−43286

www.acsami.org

From Graphene Oxide to Reduced Graphene Oxide: Impact on the Physiochemical and Mechanical Properties of Graphene−Cement Composites

Aliakbar Gholampour,[†] Meisam Valizadeh Kiamahalleh,[‡,§] Diana N. H. Tran,[‡,∥] Togay Ozbakkaloglu,[*,†] and Dusan Losic[*,‡,∥]





Carbon 127 (2018) 113–121

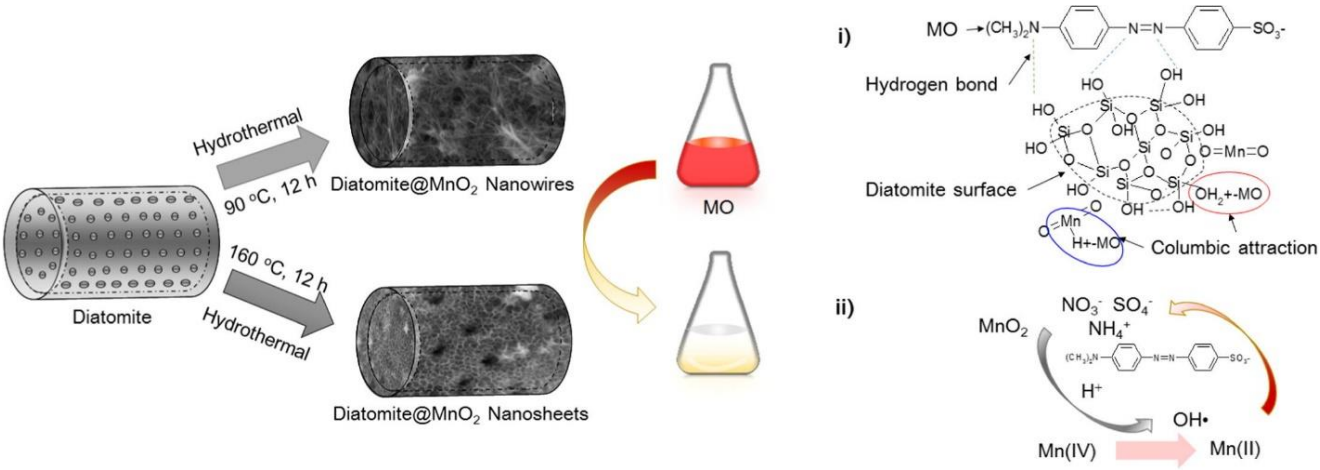
Contents lists available at ScienceDirect

Carbon

journal homepage: www.elsevier.com/locate/carbon

Scanning atmospheric plasma for ultrafast reduction of graphene oxide and fabrication of highly conductive graphene films and patterns

Faisal Alotaibi [a, b], Tran T. Tung [a, b], Md J. Nine [a, b], Shervin Kabiri [a, b], Mahmoud Moussa [a, b], Diana N.H. Tran [a, b], Dusan Losic [a, b, *]



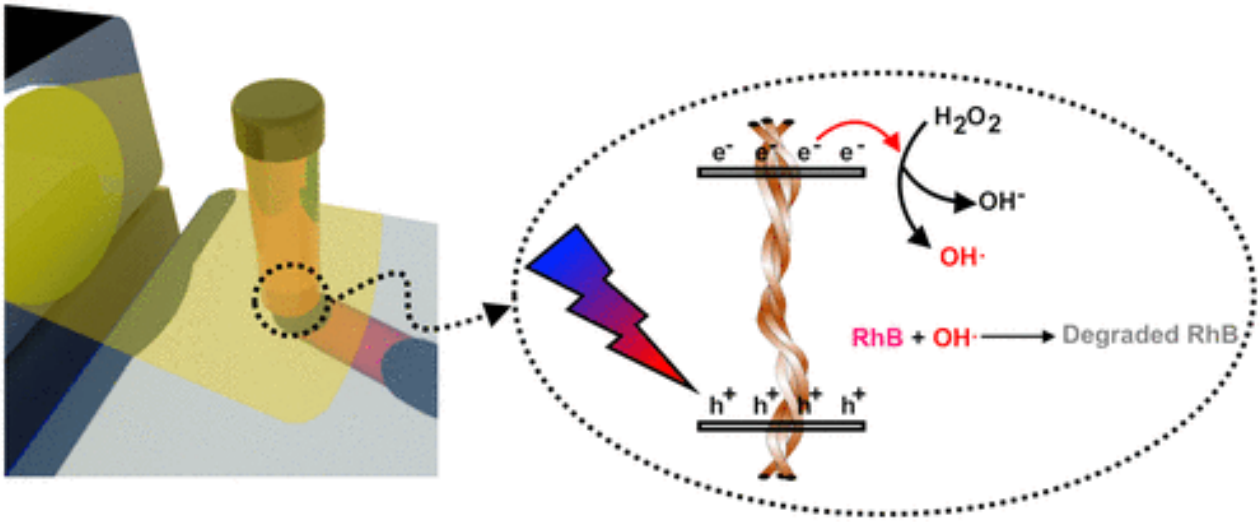
ACS APPLIED MATERIALS & INTERFACES

Research Article

www.acsami.org

Iron Oxide Nanowires from Bacteria Biofilm as an Efficient Visible-Light Magnetic Photocatalyst

Luoshan Wang,[†,⊥] Tushar Kumeria,[†,⊥] Abel Santos,[†] Peter Forward,[§] Martin F. Lambert,[*,‡] and Dusan Losic[*,†]



Carbon 110 (2016) 97–129

Contents lists available at ScienceDirect

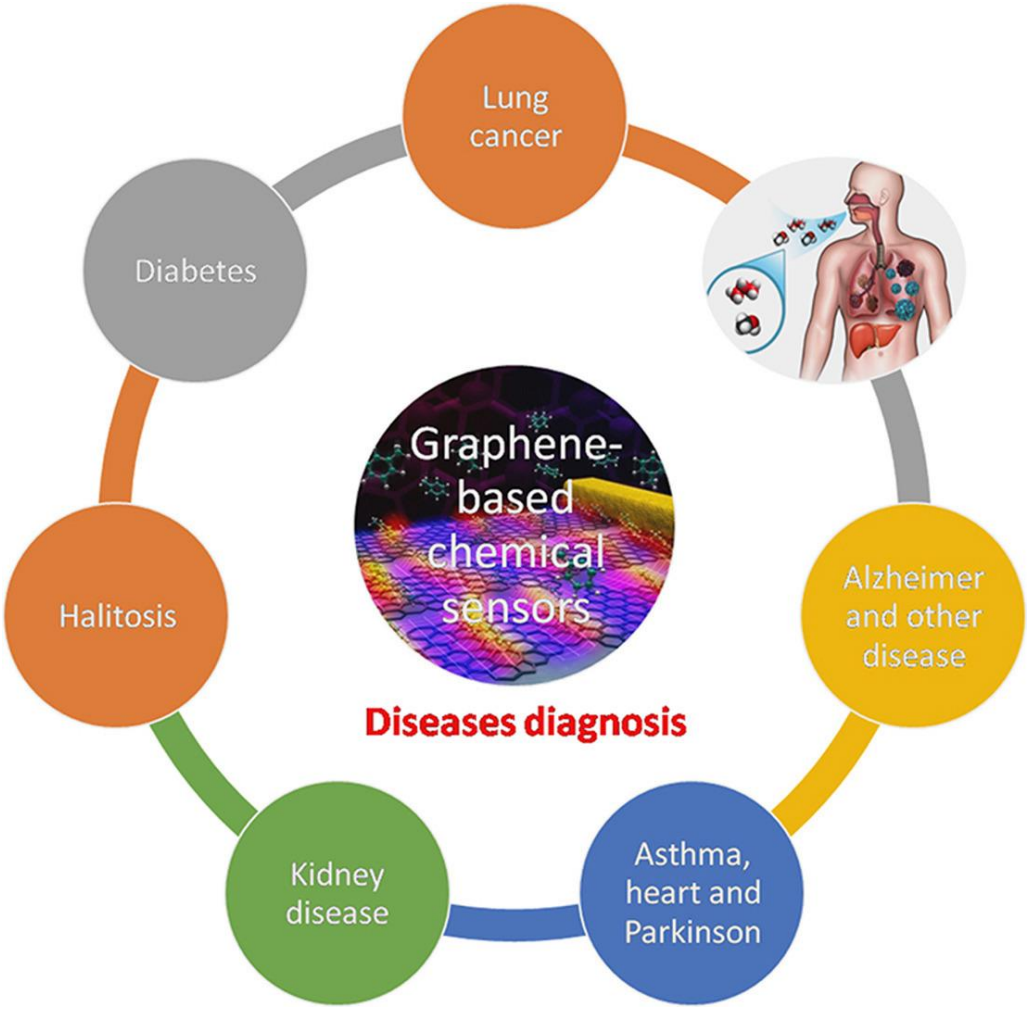
Carbon

journal homepage: www.elsevier.com/locate/carbon

Review article

Recent advances in engineered graphene and composites for detection of volatile organic compounds (VOCs) and non-invasive diseases diagnosis

Kumud Malika Tripathi [a], TaeYoung Kim [a, *], Dusan Losic [b], Tran Thanh Tung [b, **]



BioMACROMOLECULES

Article

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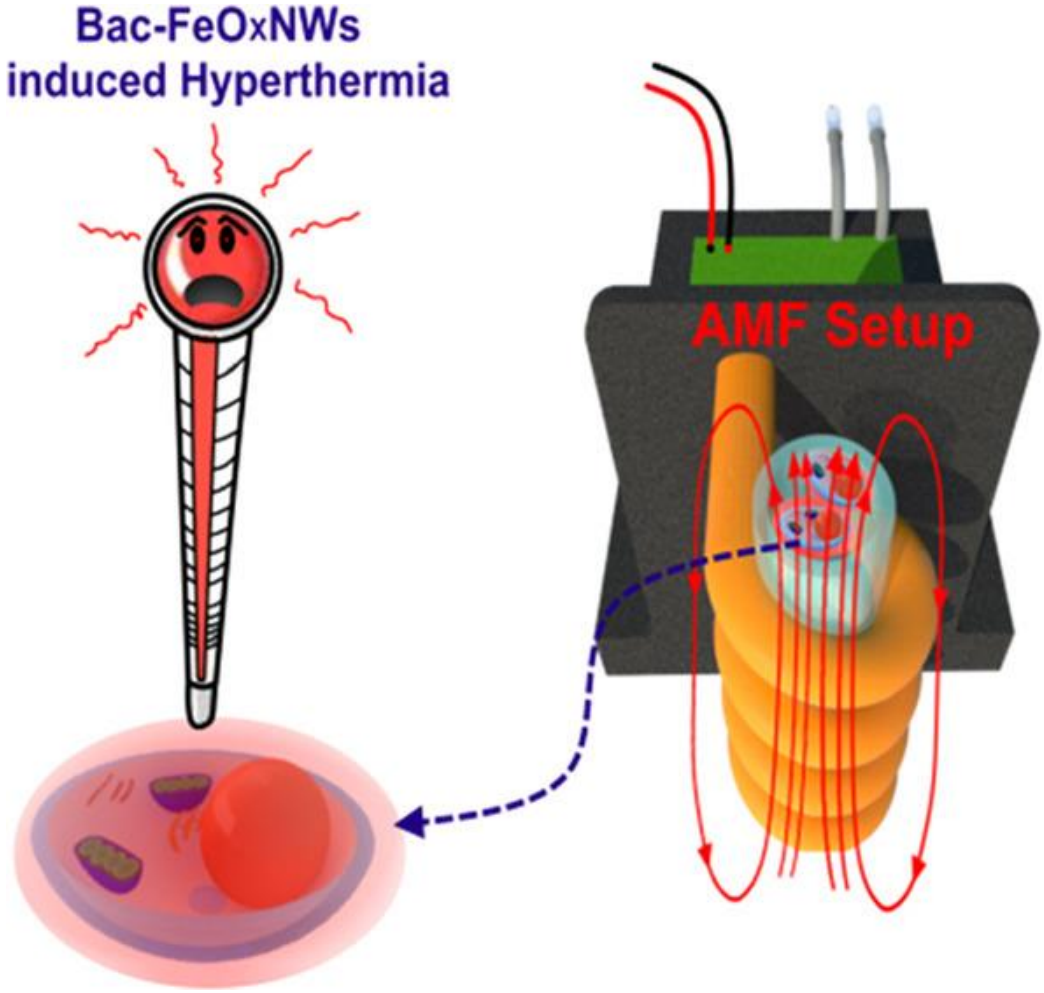
Naturally Derived Iron Oxide Nanowires from Bacteria for Magnetically Triggered Drug Release and Cancer Hyperthermia in 2D and 3D Culture Environments: Bacteria Biofilm to Potent Cancer Therapeutic

Tushar Kumeria,[†,‡] Shaheer Maher,[†,‡,§] Ye Wang,[‡,∥] Gagandeep Kaur,[‡,∥] Luoshan Wang,[‡] Mason Erkelens,[⊥] Peter Forward,[#] Martin F. Lambert,[*,⊥] Andreas Evdokiou,[*,∥] and Dusan Losic[*,‡]



Chemical Physics Letters 658 (2016) 92–96

Contents lists available at ScienceDirect

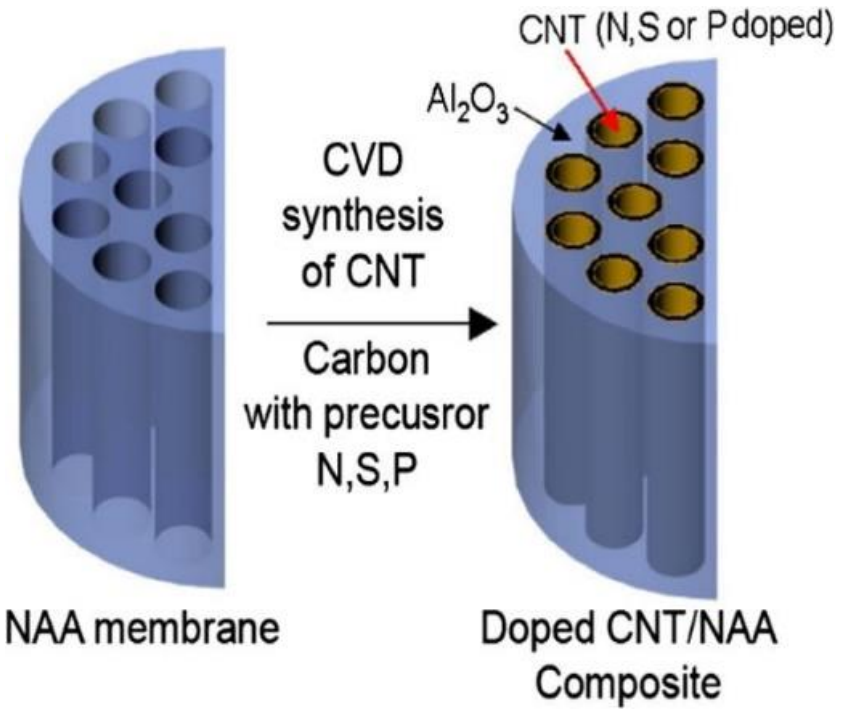
Chemical Physics Letters

journal homepage: www.elsevier.com/locate/cplett

Research paper

Fabrication and characterisation of sulfur and phosphorus (S/P) co-doped carbon nanotubes

Tariq Altalhi [a,b,*], Amine Mezni [b,c], Ali Aldalbahi [d], Arwa Alrooqi [e], Yasser Attia [f], Abel Santos [a], Dusan Losic [a]



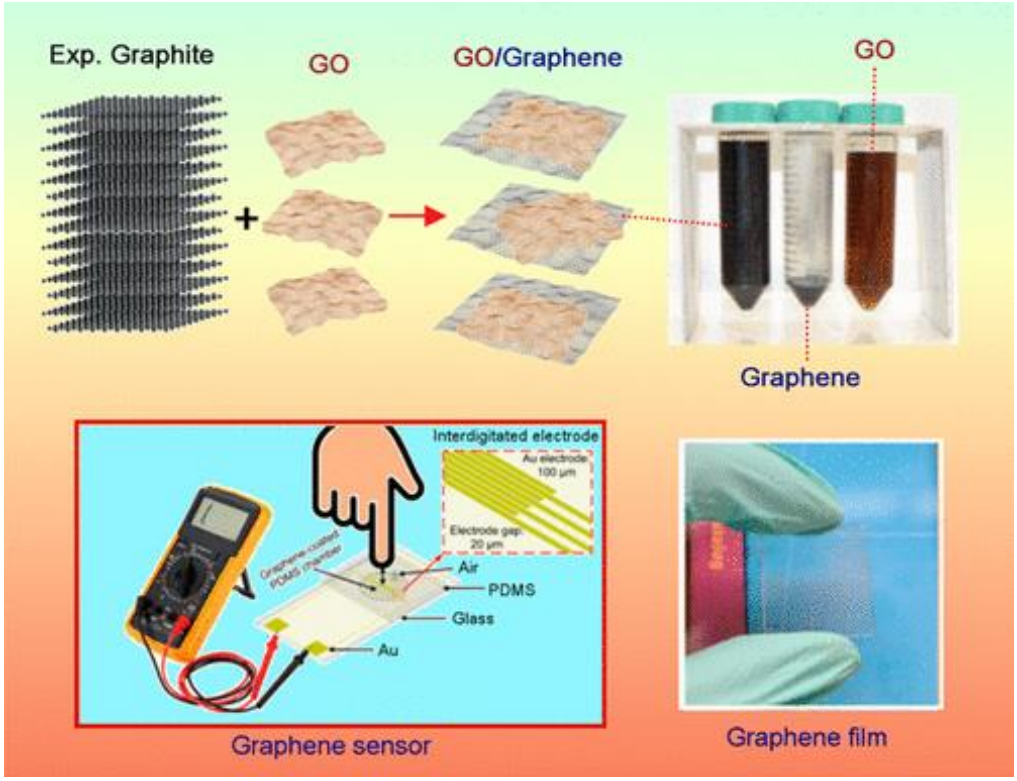
ACS APPLIED MATERIALS & INTERFACES

Research Article

www.acsami.org

Graphene Oxide-Assisted Liquid Phase Exfoliation of Graphite into Graphene for Highly Conductive Film and Electromechanical Sensors

Tran Thanh Tung,[†] Jeongha Yoo,[†] Faisal K. Alotaibi,[†] Md J. Nine,[†] Ramesh Karunagaran,[†] Melinda Krebsz,[†] Giang T. Nguyen,[†] Diana N. H. Tran,[†] Jean-Francois Feller,[‡] and Dusan Losic*,[†]



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Research Article

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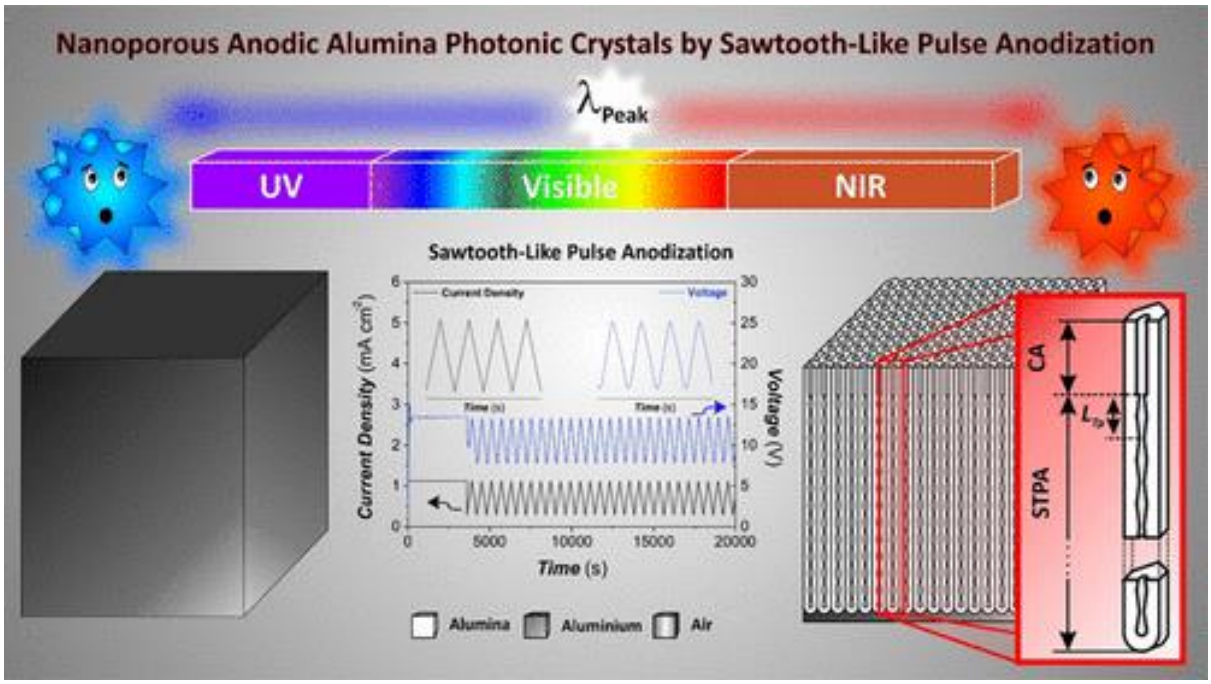
Structural Engineering of Nanoporous Anodic Alumina Photonic Crystals by Sawtooth-like Pulse Anodization

Cheryl Suwen Law,[†] Abel Santos,*[,†,‡,§] Mahdieh Nemati,[†] and Dusan Losic*[,†]



analytical chemistry

Article

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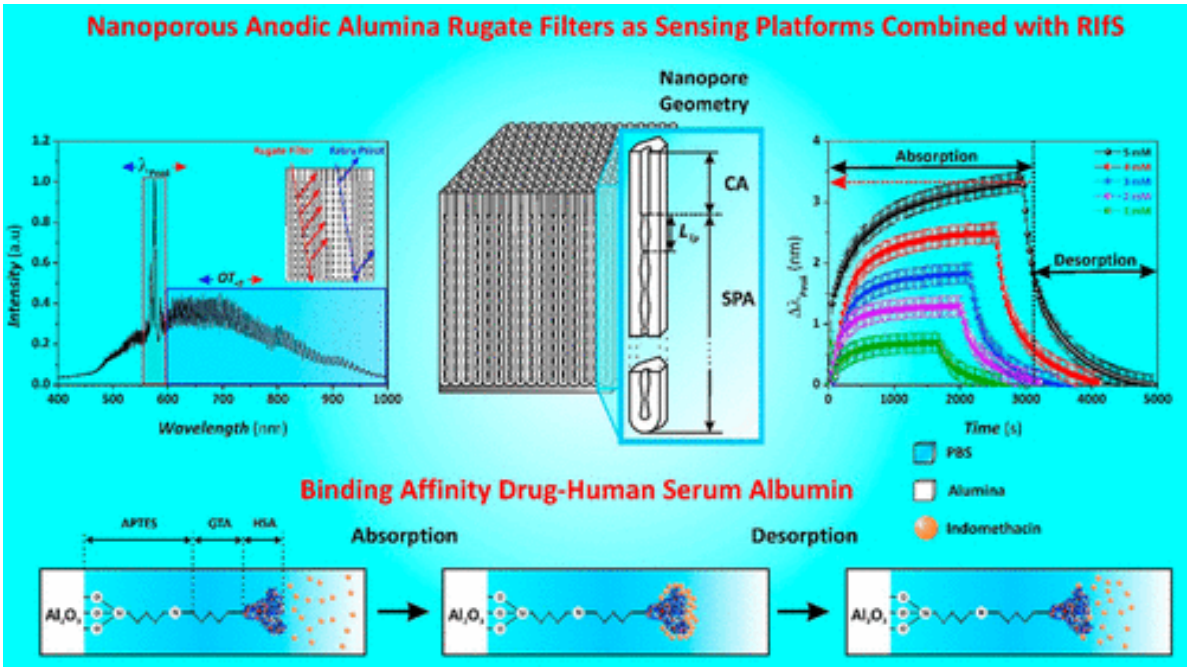
Assessment of Binding Affinity between Drugs and Human Serum Albumin Using Nanoporous Anodic Alumina Photonic Crystals

Mahdieh Nemati, Abel Santos,* Cheryl Suwen Law, and Dusan Losic*



Biomaterials 101 (2016) 176–188

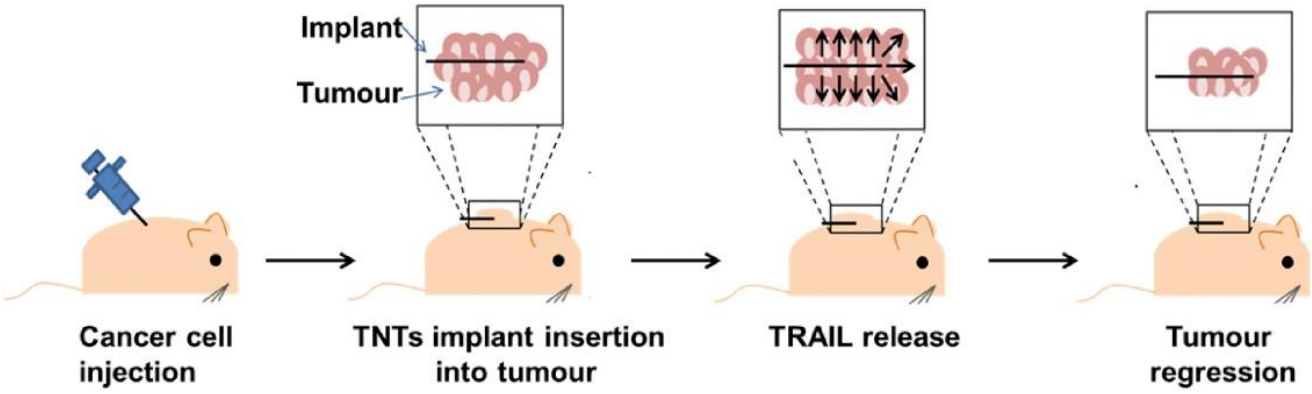
Contents lists available at ScienceDirect

Biomaterials

journal homepage: www.elsevier.com/locate/biomaterials

Titanium wire implants with nanotube arrays: A study model for localized cancer treatment

Gagandeep Kaur [a, b], Tamsyn Willsmore [b], Karan Gulati [a], Irene Zinonos [b], Ye Wang [a], Mima Kurian [a], Shelley Hay [b], Dusan Losic [a, **], Andreas Evdokiou [b, *]



Electrochimica Acta 190 (2016) 159–167

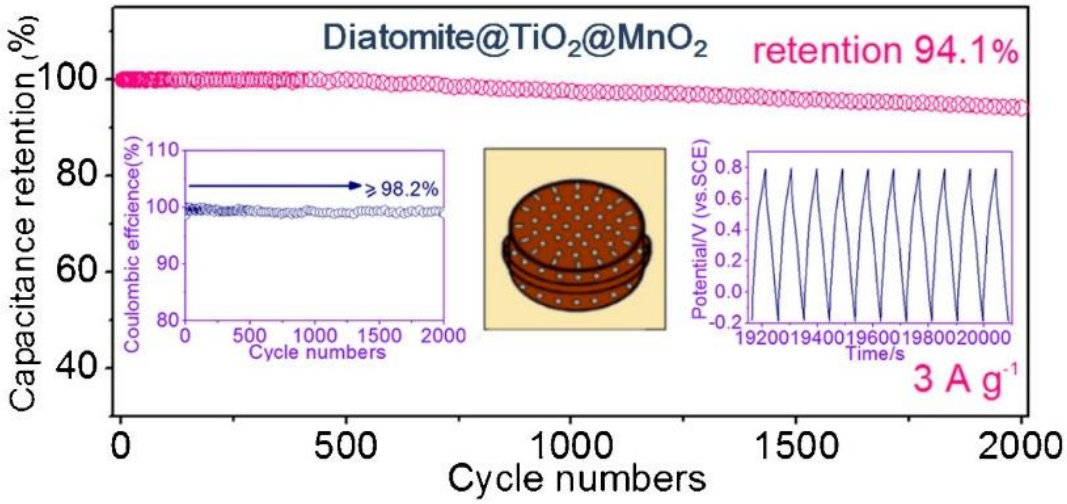
Contents lists available at ScienceDirect

Electrochimica Acta

journal homepage: www.elsevier.com/locate/electacta

Engineering of three dimensional (3-D) diatom@TiO_2@MnO_2 composites with enhanced supercapacitor performance

Xiao Long Guo[a], Min Kuang[a], Fei Li[a], Xiao Ying Liu[a], Yu Xin Zhang[a,b,*], Fan Dong[c], Dusan Losic[d,**]



BioMACROMOLECULES

Article

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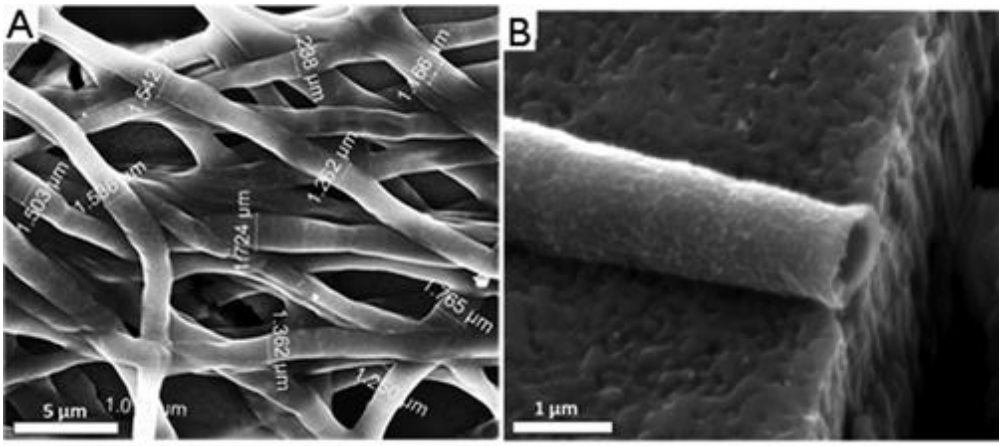
In Situ Transformation of Chitosan Films into Microtubular Structures on the Surface of Nanoengineered Titanium Implants

Karan Gulati,[†] Lucas Johnson,[†,‡] Ramesh Karunagaran,[†,‡] David Findlay,[§] and Dusan Losic*[,†]



Materials Science and Engineering C 69 (2016) 831–840

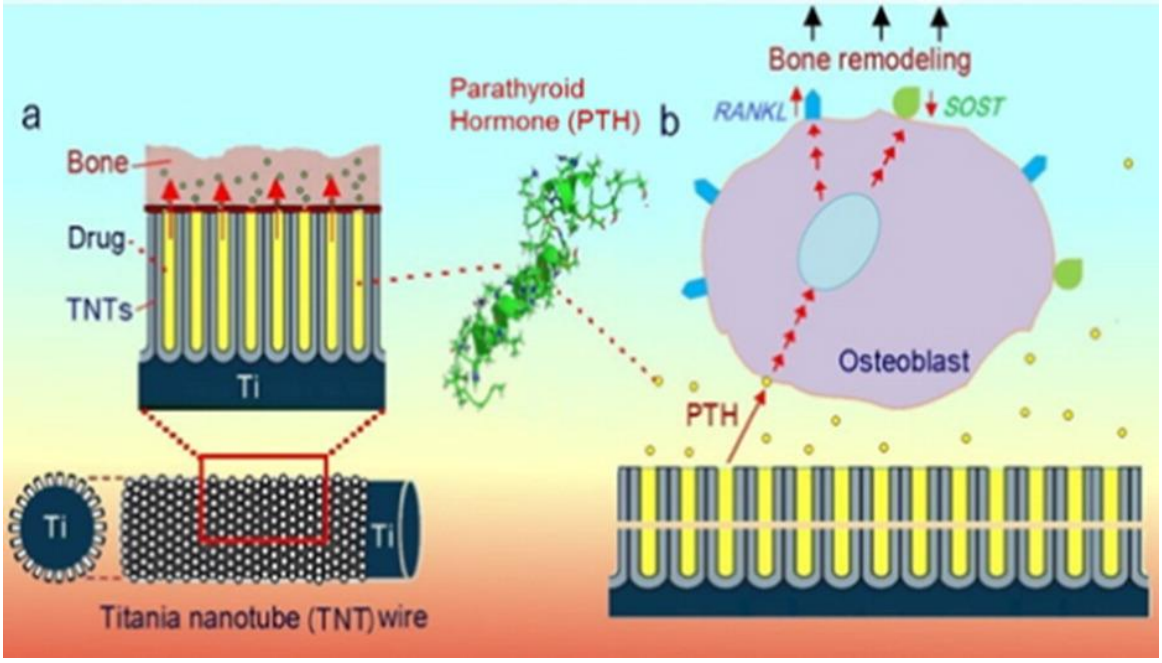
Contents lists available at ScienceDirect

Materials Science and Engineering C

journal homepage: www.elsevier.com/locate/msec

Drug-releasing nano-engineered titanium implants: therapeutic efficacy in 3D cell culture model, controlled release and stability

Karan Gulati [a], Masakazu Kogawa [b,1], Matthew Prideaux [b,1], David M. Findlay [b], Gerald J. Atkins [b,*], Dusan Losic [a,*]

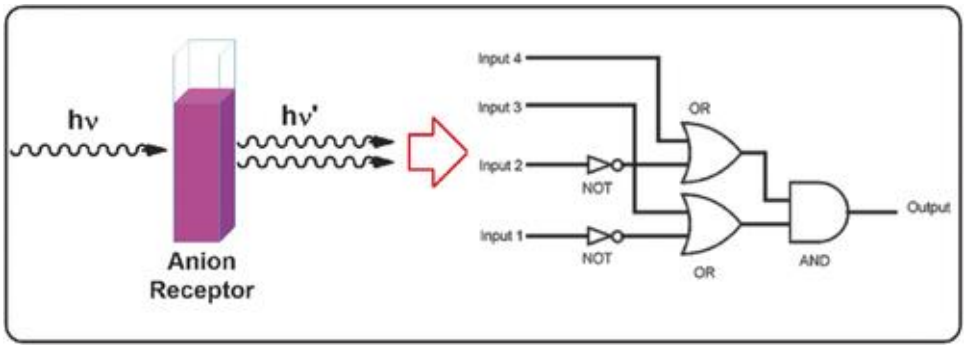


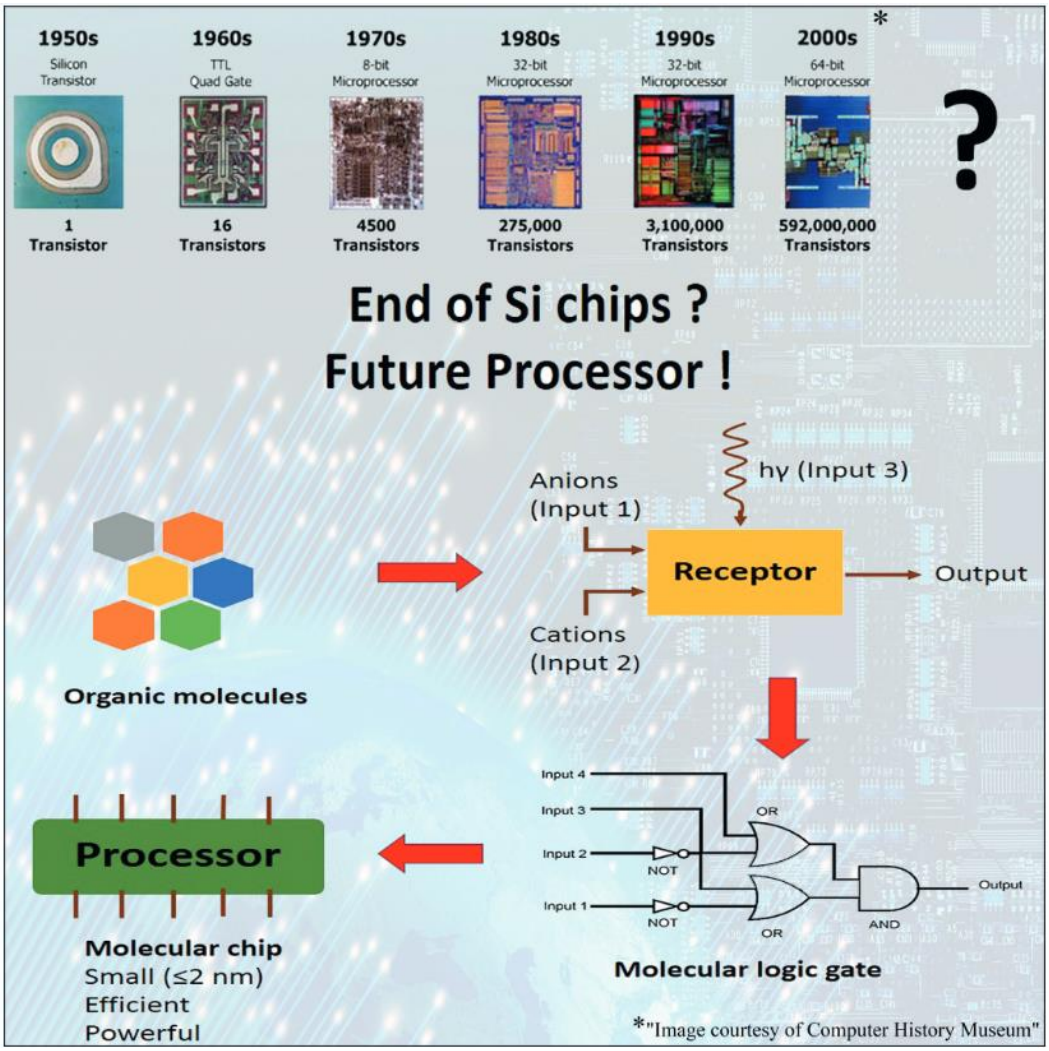
ChemPubSoc Europe
DOI: 10.1002/chem.201504396
CHEMISTRY A European Journal Review

Molecular Logic Gates

Anion Sensors as Logic Gates: A Close Encounter?

Madhuprasad,*[a] Mahesh P. Bhat,[a] Ho-Young Jung,[b] Dusan Losic,[c] and Mahaveer D. Kurkuri*[a]





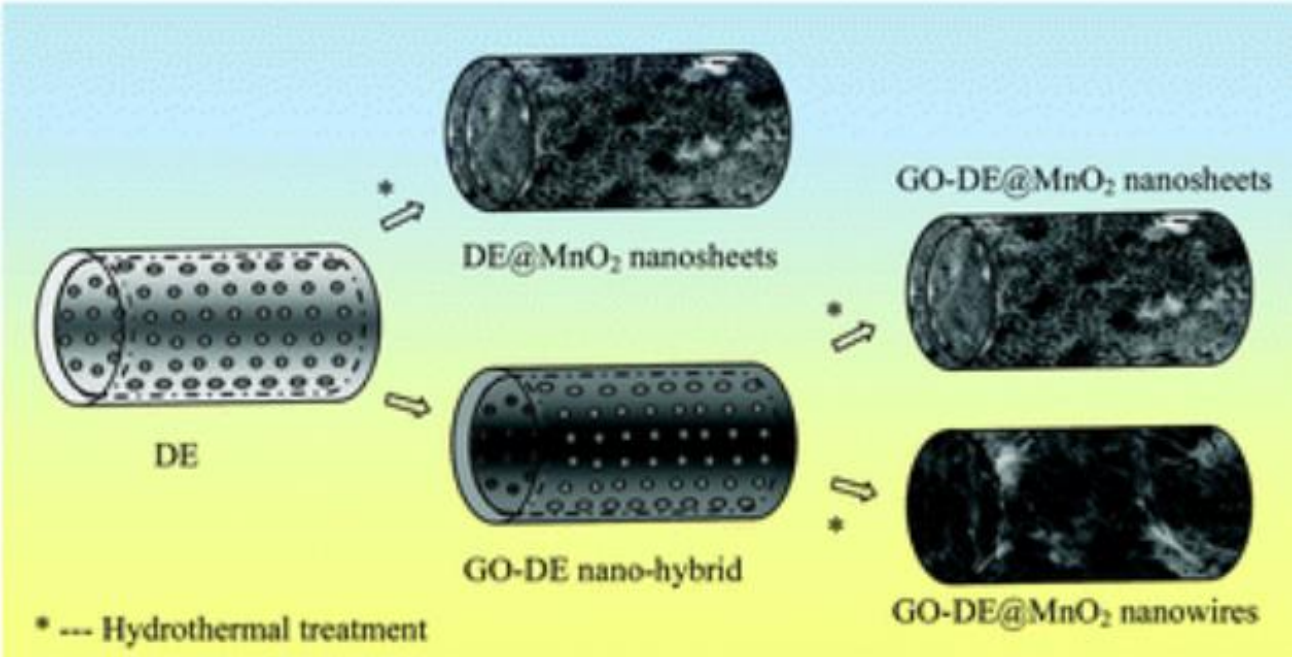
Dalton Transactions

PAPER

Cite this: *Dalton Trans.*, 2016, **45**, 936

Morphology-controlled MnO_2–graphene oxide–diatomaceous earth 3-dimensional (3D) composites for high-performance supercapacitors†

Zhong Quan Wen,*[a] Min Li,[a] Fei Li,[b] Shi Jin Zhu,[b] Xiao Ying Liu,[b] Yu Xin Zhang,*[a,b] Tushar Kumeria,[c] Dusan Losic,*[c] Yang Gao,[d] Wei Zhang[e] and Shi Xuan He[e]



Journal of
Materials Chemistry B

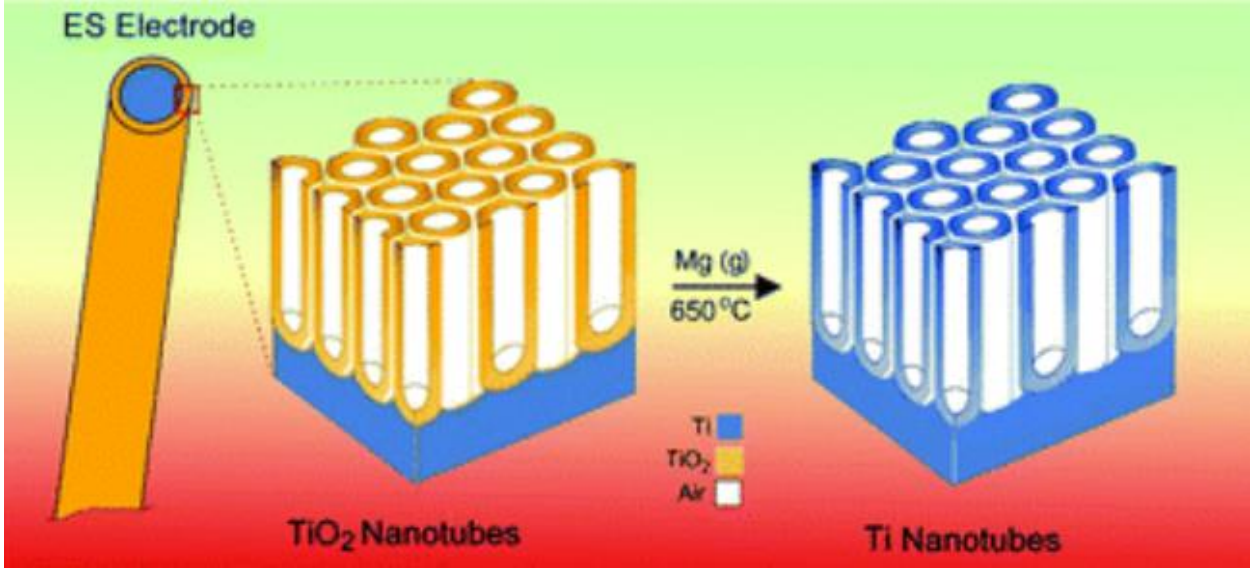
COMMUNICATION

Cite this: *J. Mater. Chem. B*, 2016, 4, 371

Received 10th October 2015,
Accepted 20th November 2015

Conversion of titania (TiO_2) into conductive titanium (Ti) nanotube arrays for combined drug-delivery and electrical stimulation therapy

Karan Gulati,[a] Shaheer Maher,[ab] Soundarrajan Chandrasekaran,[ac] David M. Findlay[d] and Dusan Losic*[a]



ACS Biomaterials SCIENCE & ENGINEERING

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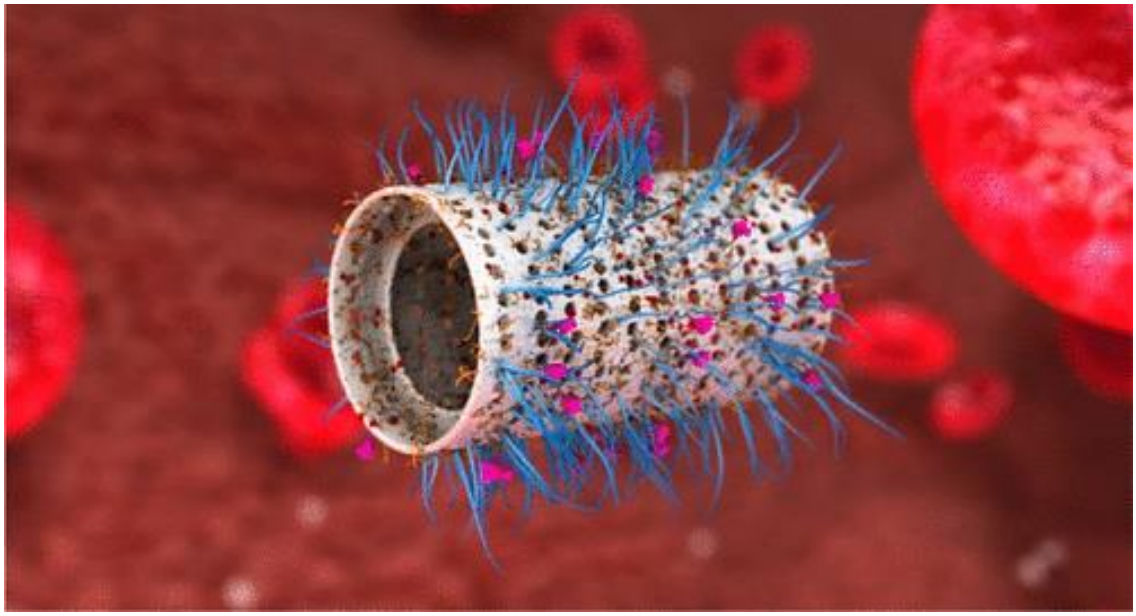
Perspective

Diatoms with Invaluable Applications in Nanotechnology, Biotechnology, and Biomedicine: Recent Advances

Navid Rabiee,* Mehrdad Khatami, Ghazaleh Jamalipour Soufi, Yousef Fatahi, Siavash Iravani,* and Rajender S. Varma



Electrochimica Acta 154 (2015) 379–386

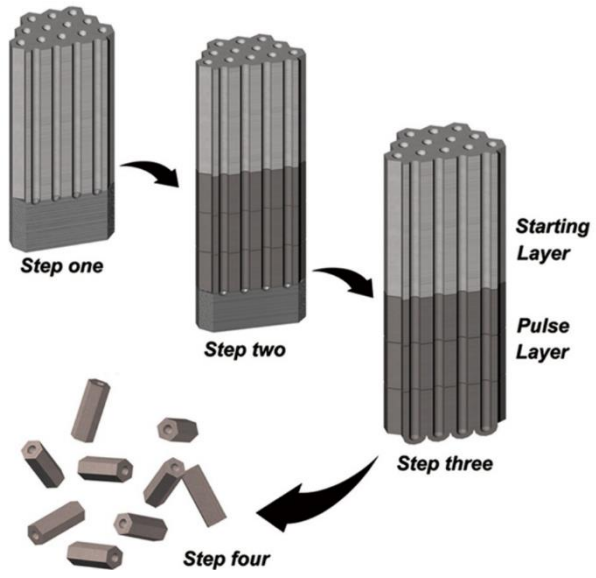
Contents lists available at ScienceDirect

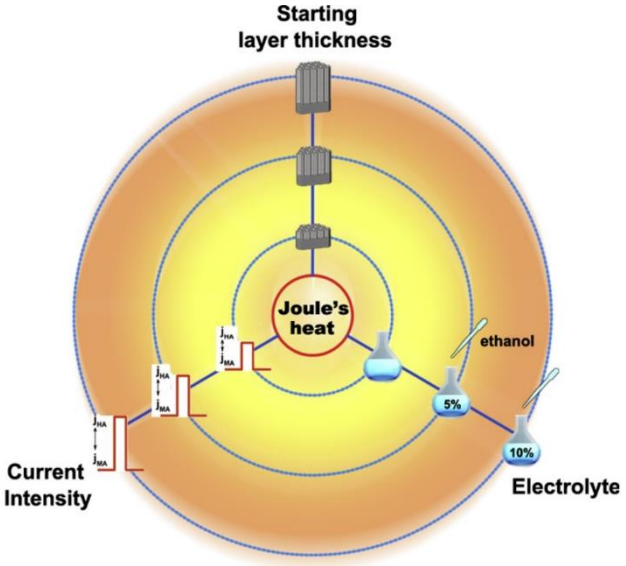
Electrochimica Acta

journal homepage: www.elsevier.com/locate/electacta

Rational Design of Ultra-Short Anodic Alumina Nanotubes by Short-Time Pulse Anodization

Ye Wang [a,b], Abel Santos [a,*], Andreas Evdokiou [b,*], Dusan Losic [a,*]





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Research Article

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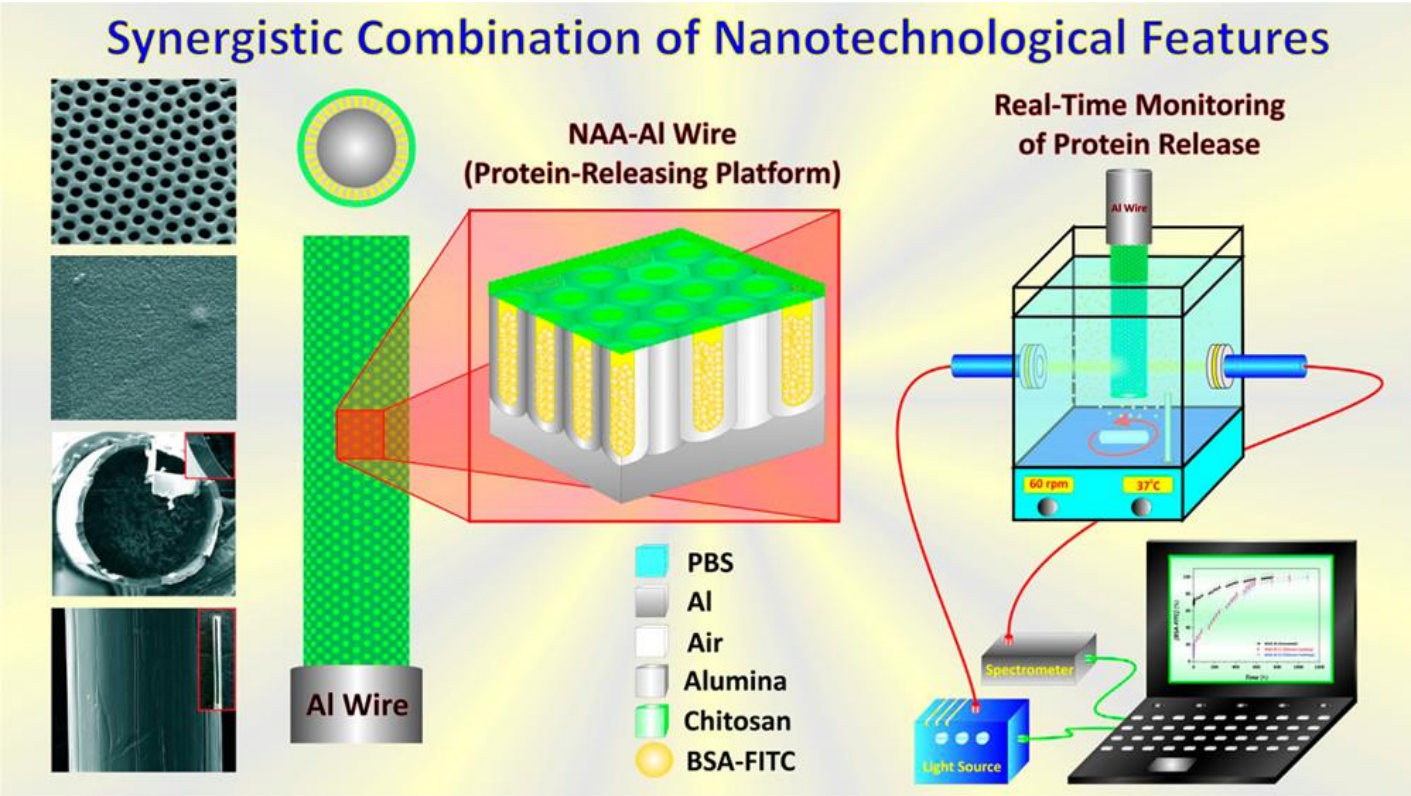
Engineered Therapeutic-Releasing Nanoporous Anodic Alumina-Aluminum Wires with Extended Release of Therapeutics

Cheryl Suwen Law,[†] Abel Santos,[*,†] Tushar Kumeria,[†] and Dusan Losic[*,†]



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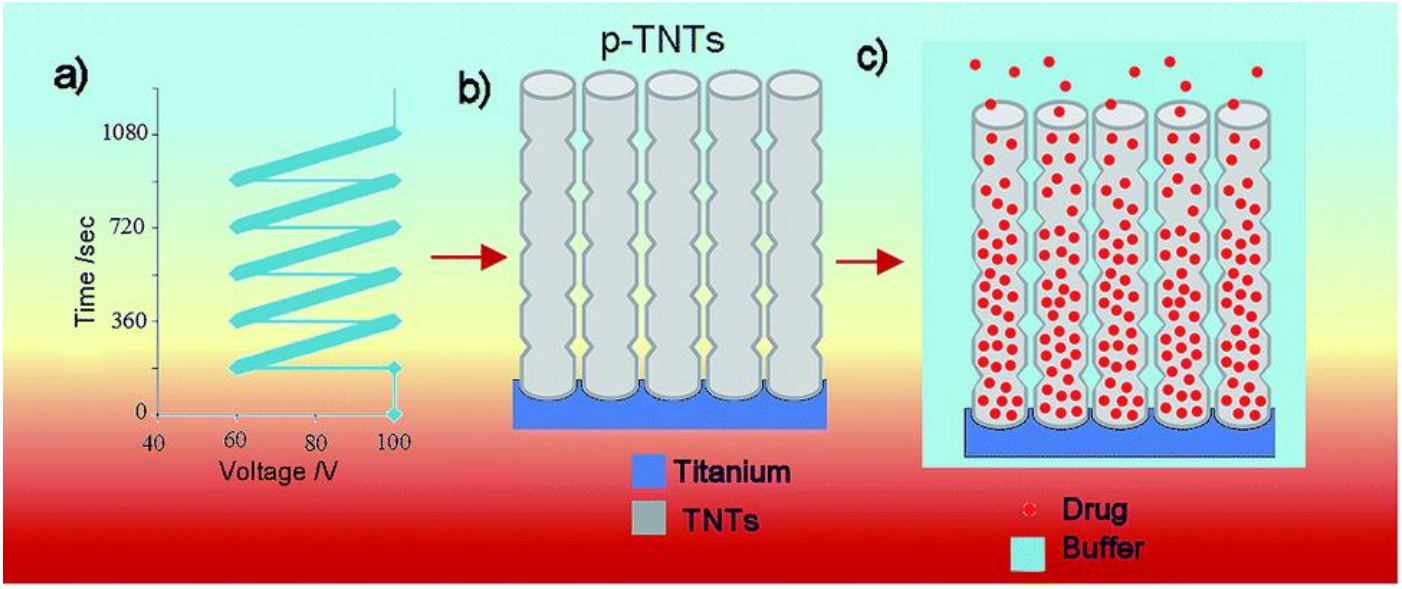
DOI: 10.1039/C4TB01882F (Paper) *J. Mater. Chem. B*, 2015, **3**, 2553-2559

Periodically tailored titania nanotubes for enhanced drug loading and releasing performances

Karan Gulati [a], **Krishna Kant** [a], **David Findlay** [b] **and Dusan Losic** *[a]



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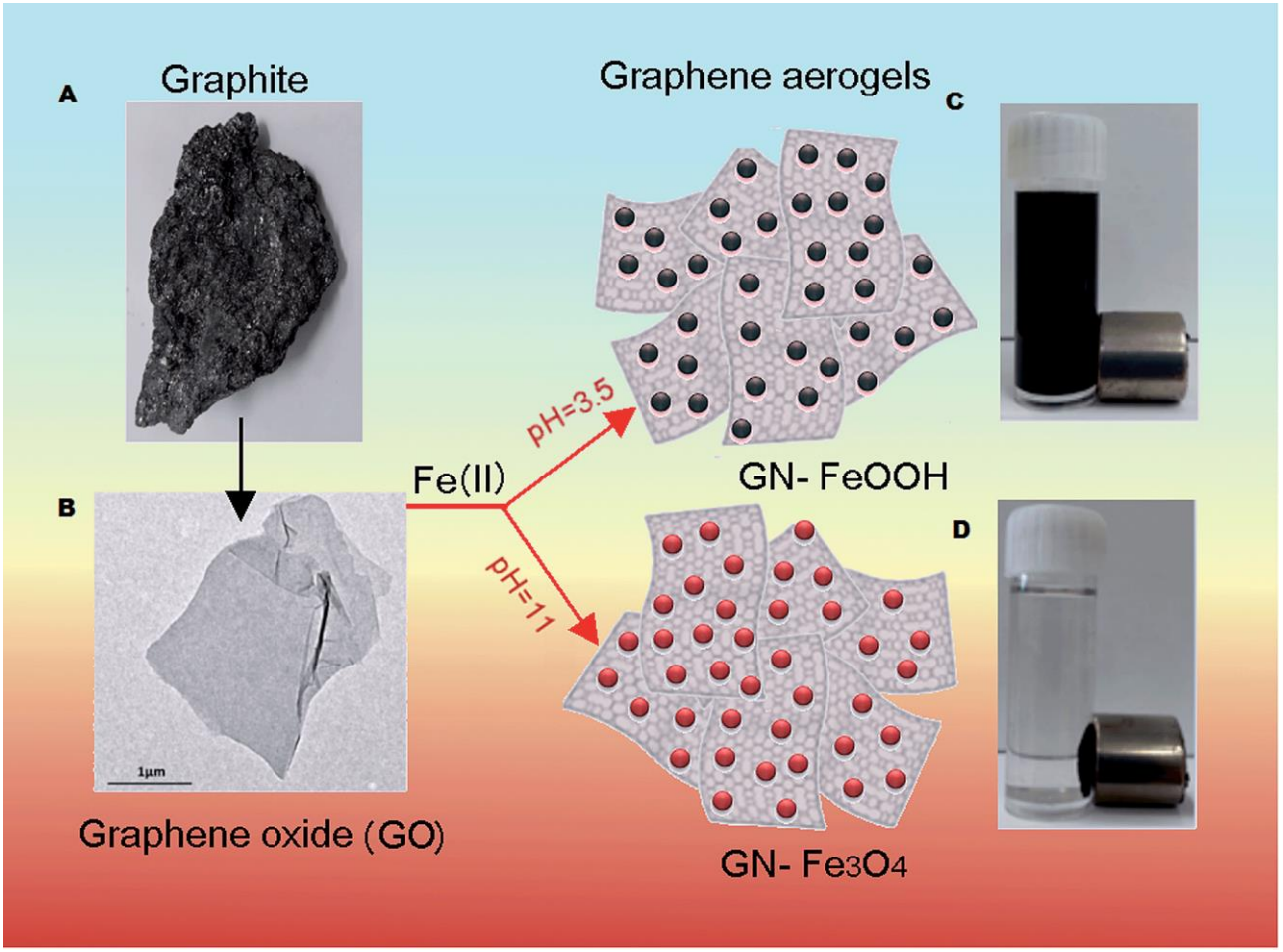
DOI: 10.1039/C4TA06308B (Paper) J. Mater. Chem. A, 2015, 3, 6844-6852

Engineered graphene–nanoparticle aerogel composites for efficient removal of phosphate from water

Diana N. H. Tran , Shervin Kabiri , Luoshan Wang and Dusan Losic *



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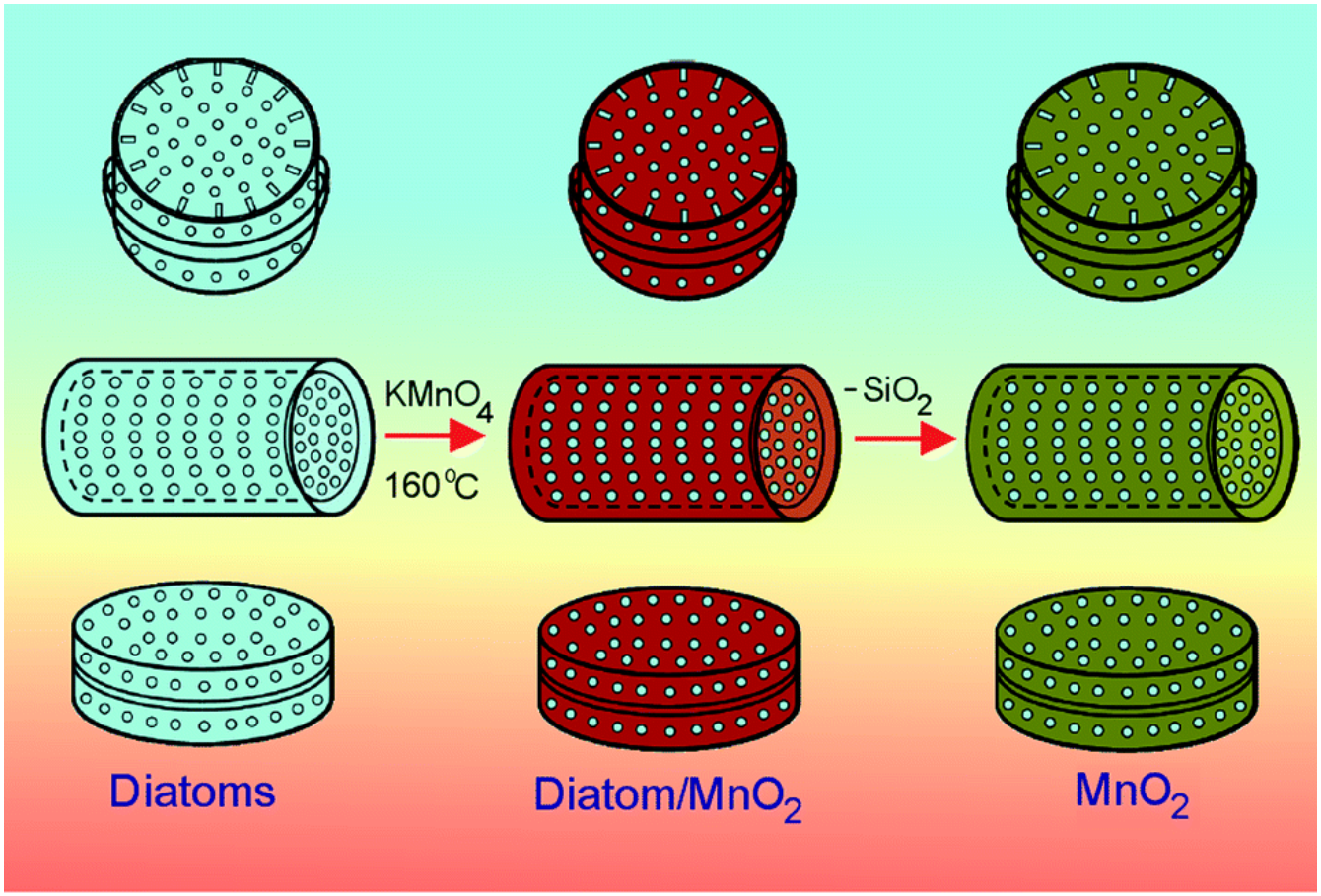
DOI: 10.1039/C5TA00634A (Paper) J. Mater. Chem. A, 2015, 3, 7855-7861

MnO_2 nanostructures with three-dimensional (3D) morphology replicated from diatoms for high-performance supercapacitors†

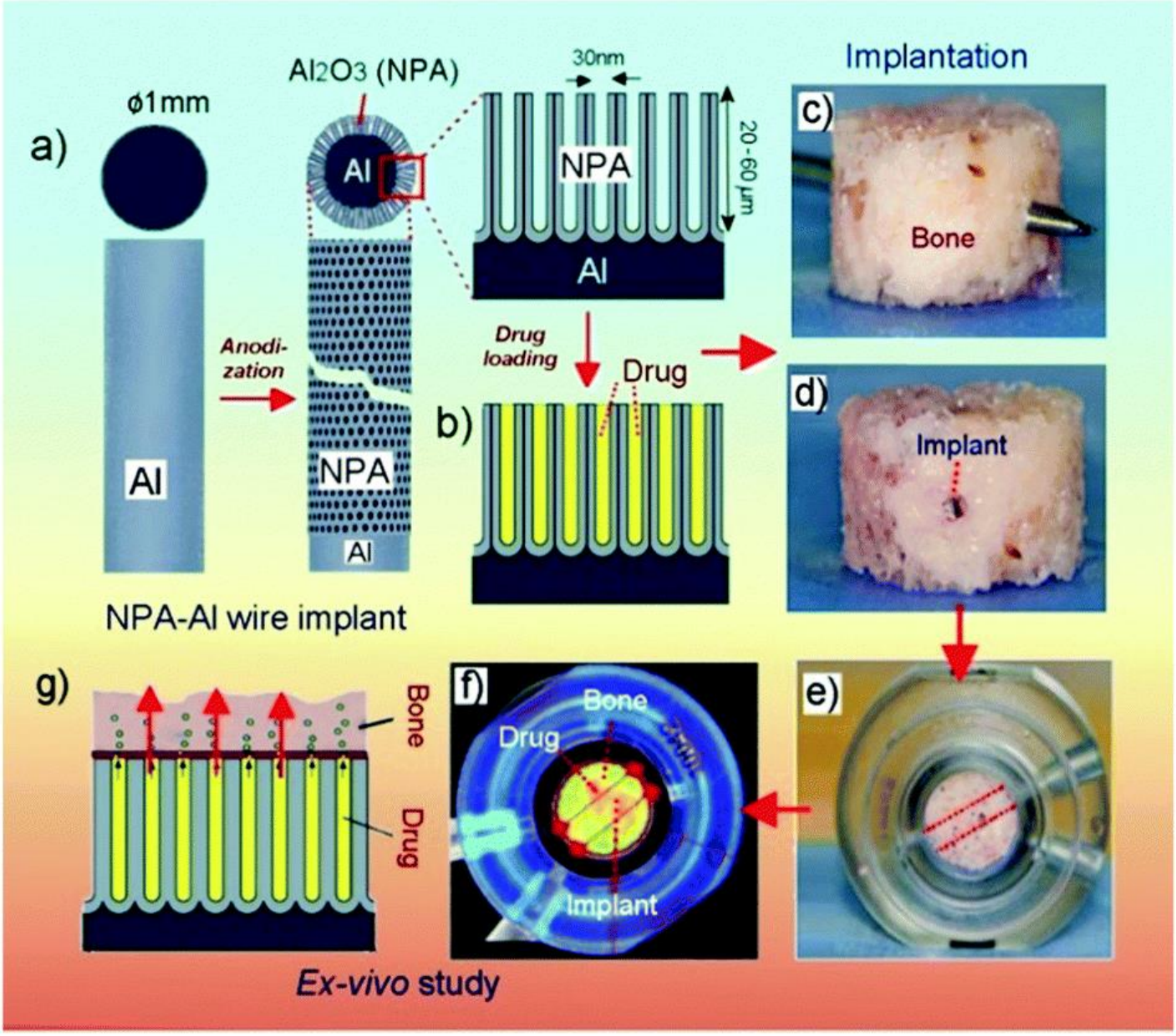
Fei Li [a], Yuan Xing [a], Ming Huang [ab], Kai Lin Li [a], Ting Ting Yu [a], Yu Xin Zhang *[ac] and Dusan Losic *[d]



DOI: 10.1039/C5TB00150A (Paper) J. Mater. Chem. B, 2015, 3, 3288-3296

Nanoengineered drug releasing aluminium wire implants: a model study for localized bone therapy

Shafiur Rahman [a], Gerald J. Atkins [b], David M. Findlay [b] and Dusan Losic *[a]



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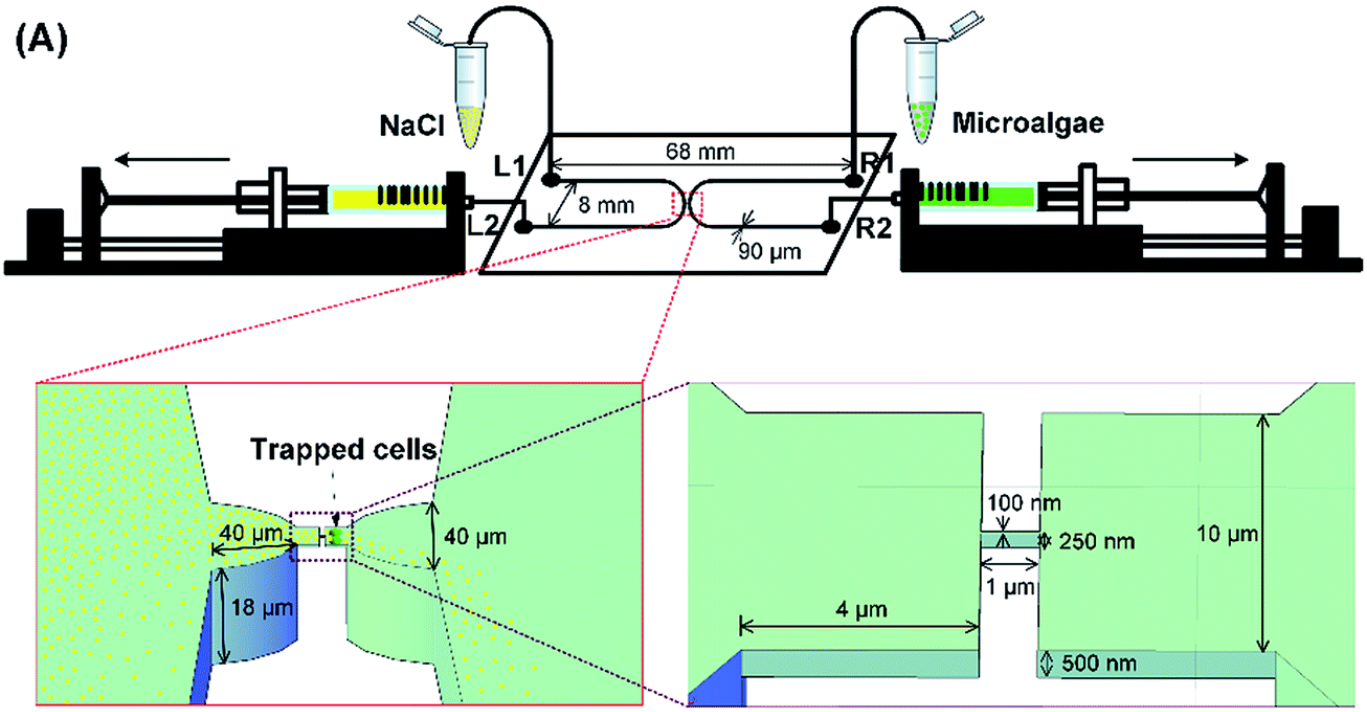
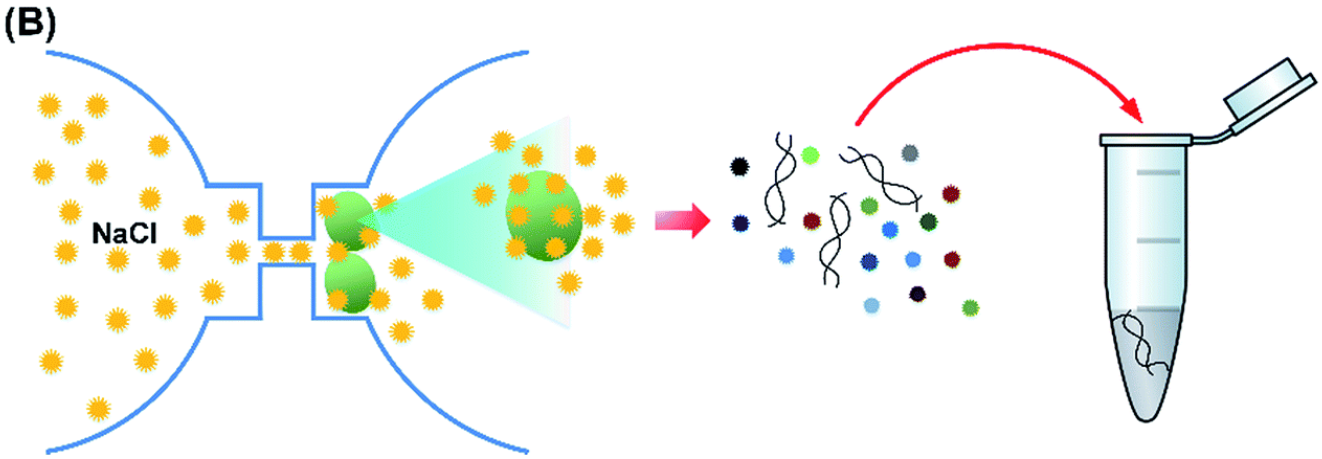
DOI: 10.1039/C5RA01336D (Paper) *RSC Adv.*, 2015, **5**, 23886-23891

Microbial cell lysis and nucleic acid extraction *via* nanofluidic channel

Krishna Kant [a], Jeongha Yoo [b], Steven Amos [b], Mason Erkelens [b], Craig Priest [c], Joe G. Shapter [a] and Dusan Losic *[b]





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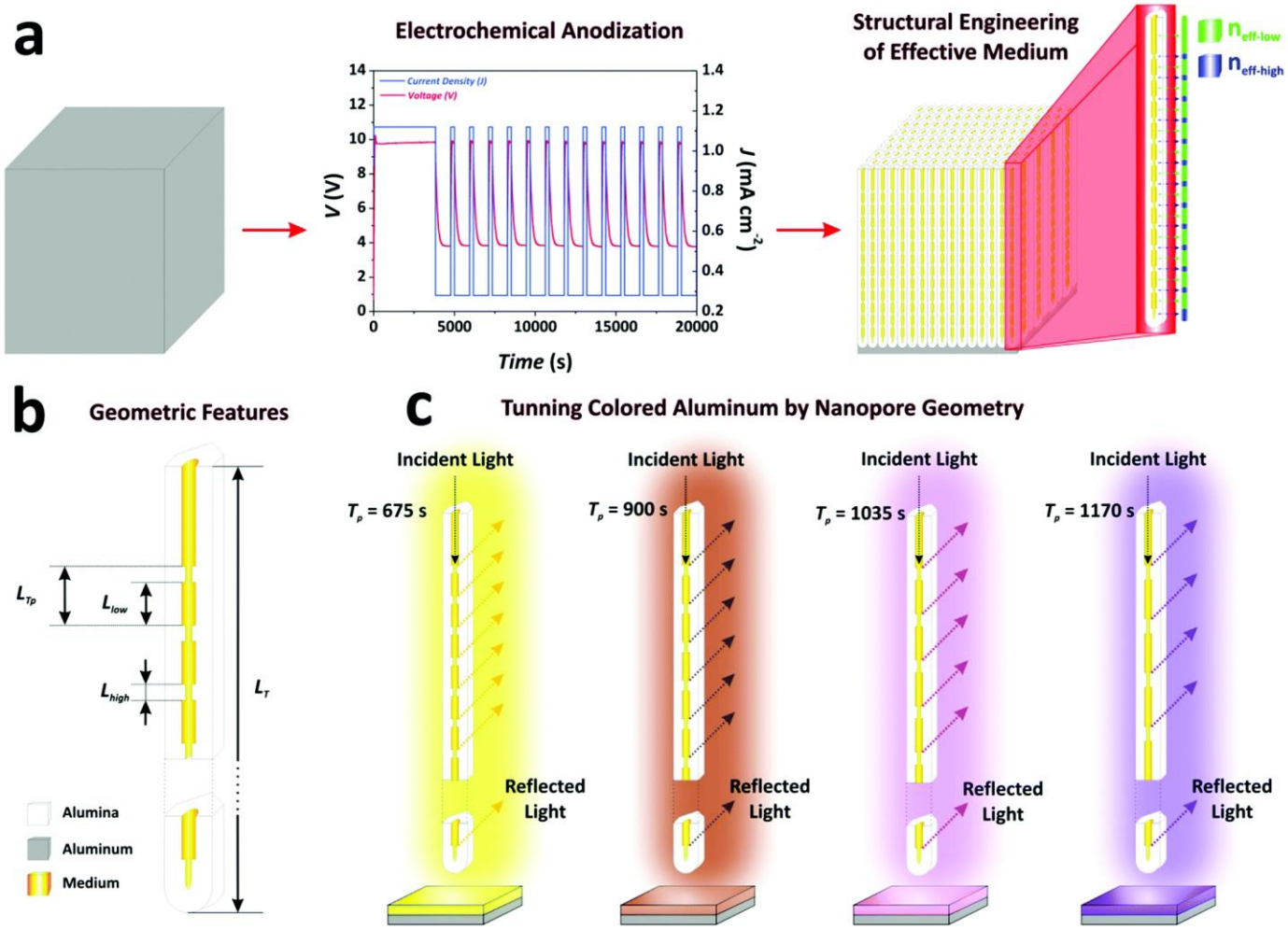
DOI: 10.1039/C5NR00369E (Paper) *Nanoscale*, 2015, **7**, 7770-7779

Interferometric nanoporous anodic alumina photonic coatings for optical sensing†

Yuting Chen [abc], Abel Santos *[a], Ye Wang [a], Tushar Kumeria [a], Changhai Wang *[b], Junsheng Li *[c] and Dusan Losic *[a]



Colloids and Surfaces B: Biointerfaces 130 (2015) 255–263

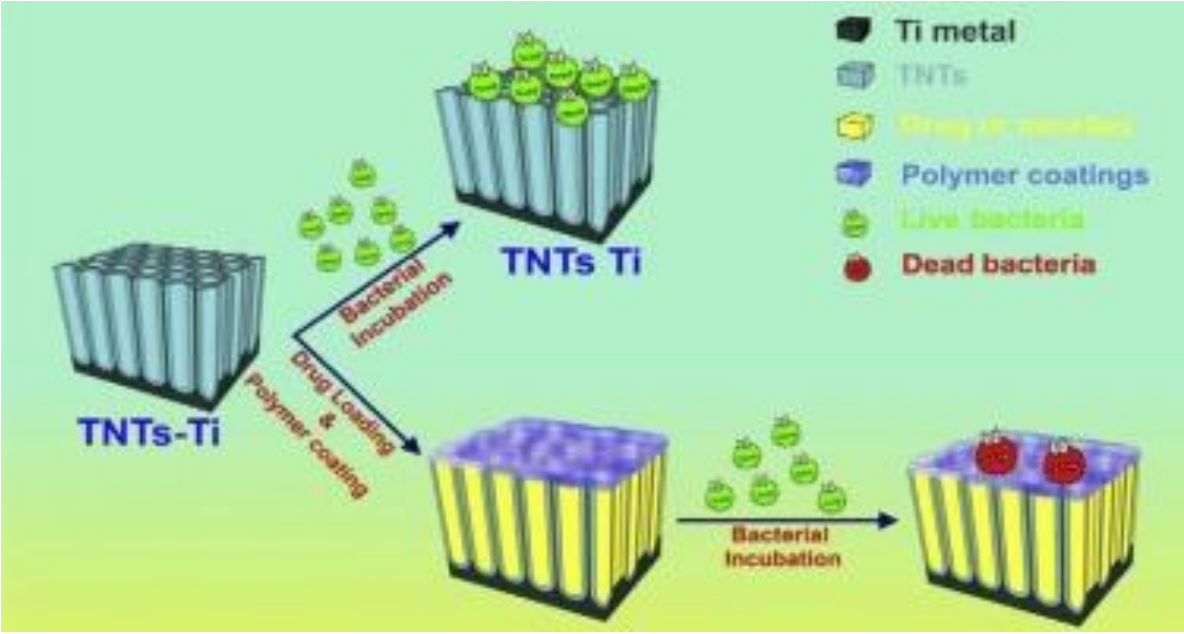
Contents lists available at ScienceDirect

Colloids and Surfaces B: Biointerfaces

journal homepage: www.elsevier.com/locate/colsurfb

Advanced biopolymer-coated drug-releasing titania nanotubes (TNTs) implants with simultaneously enhanced osteoblast adhesion and antibacterial properties

Tushar Kumeria[a,1], Htwe Mon[b,1], Moom Sinn Aw[a,1], Karan Gulati[a], Abel Santos[a], Hans J. Griesser[c,**], Dusan Losic[a,*]



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Research Article

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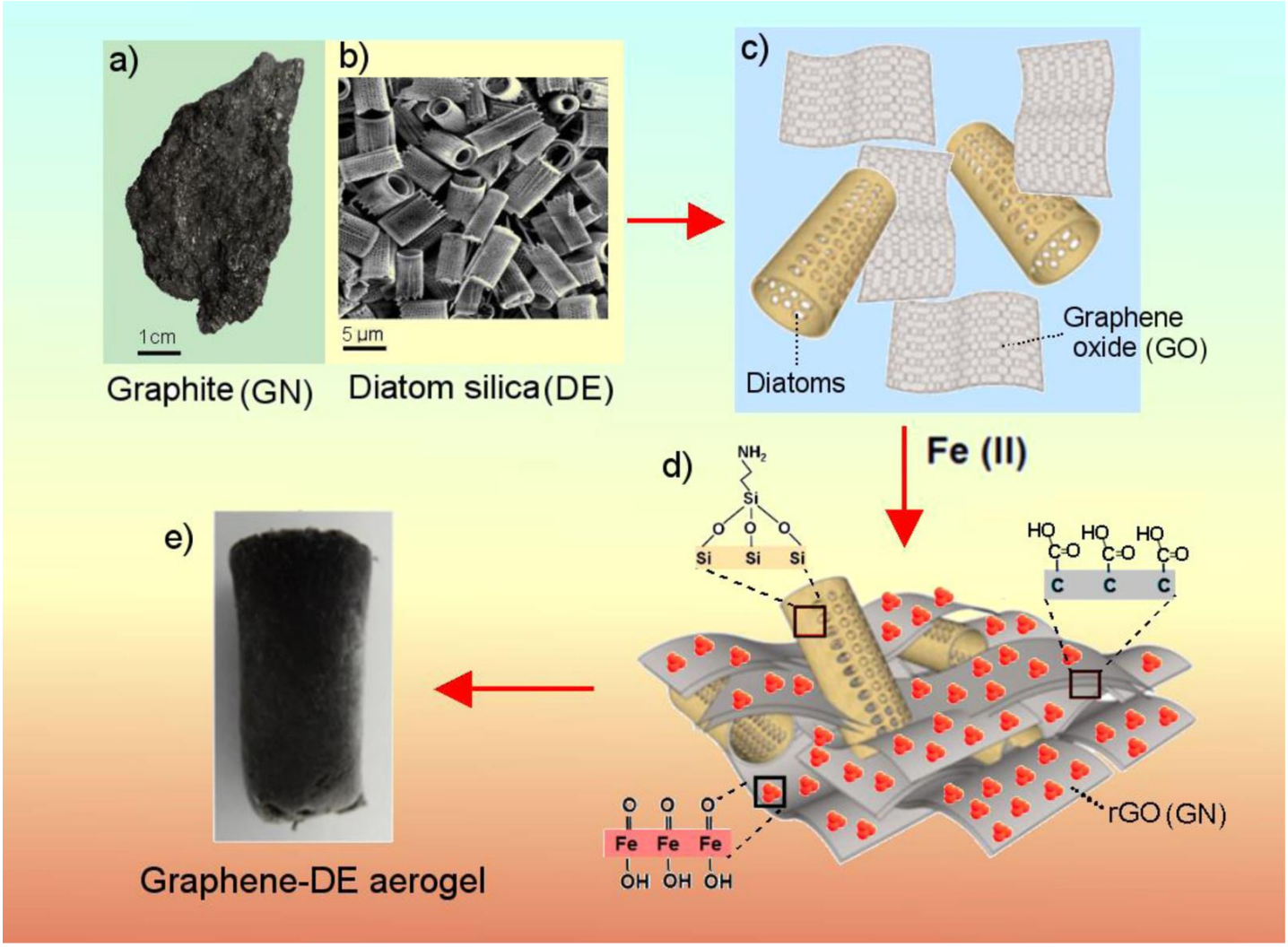
Graphene-Diatom Silica Aerogels for Efficient Removal of Mercury Ions from Water

Shervin Kabiri, Diana N. H. Tran, Sara Azari, and Dusan Losic*



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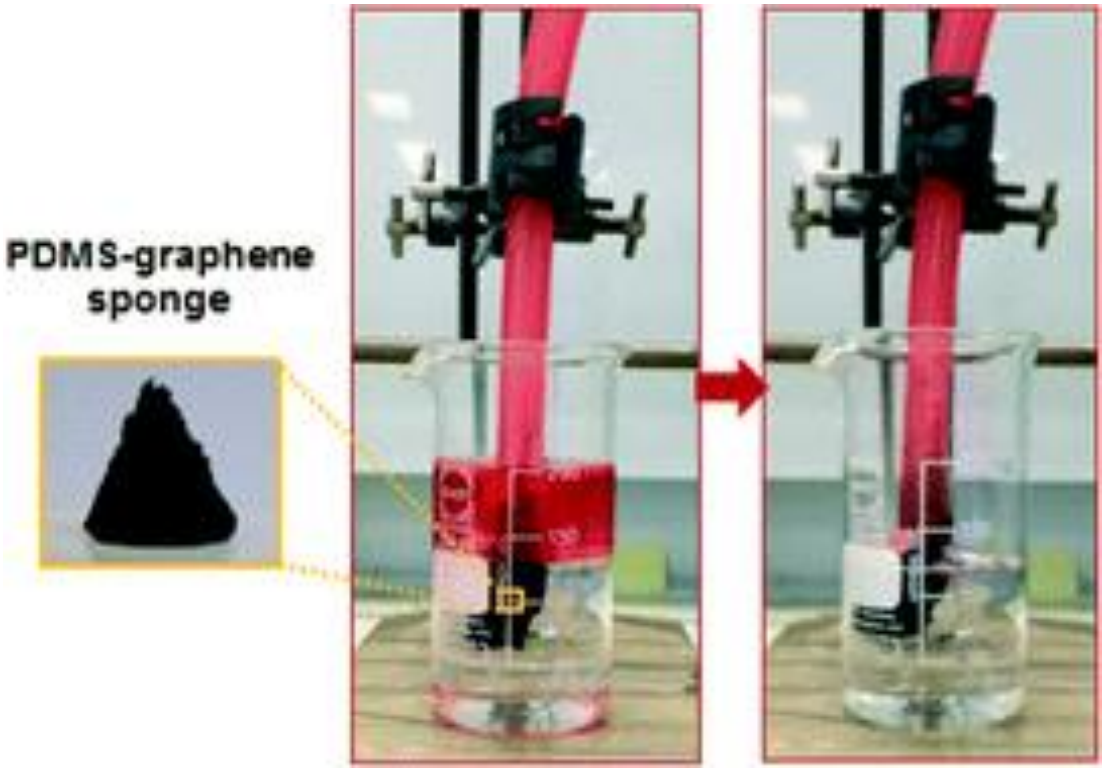
DOI: 10.1039/C5EW00035A (Paper) *Environ. Sci.: Water Res. Technol.*, 2015, **1**, 298-305

Selective adsorption of oil–water mixtures using polydimethylsiloxane (PDMS)–graphene sponges†

Diana N. H. Tran , Shervin Kabiri , Ting Rui Sim and Dusan Losic *



Materials Views
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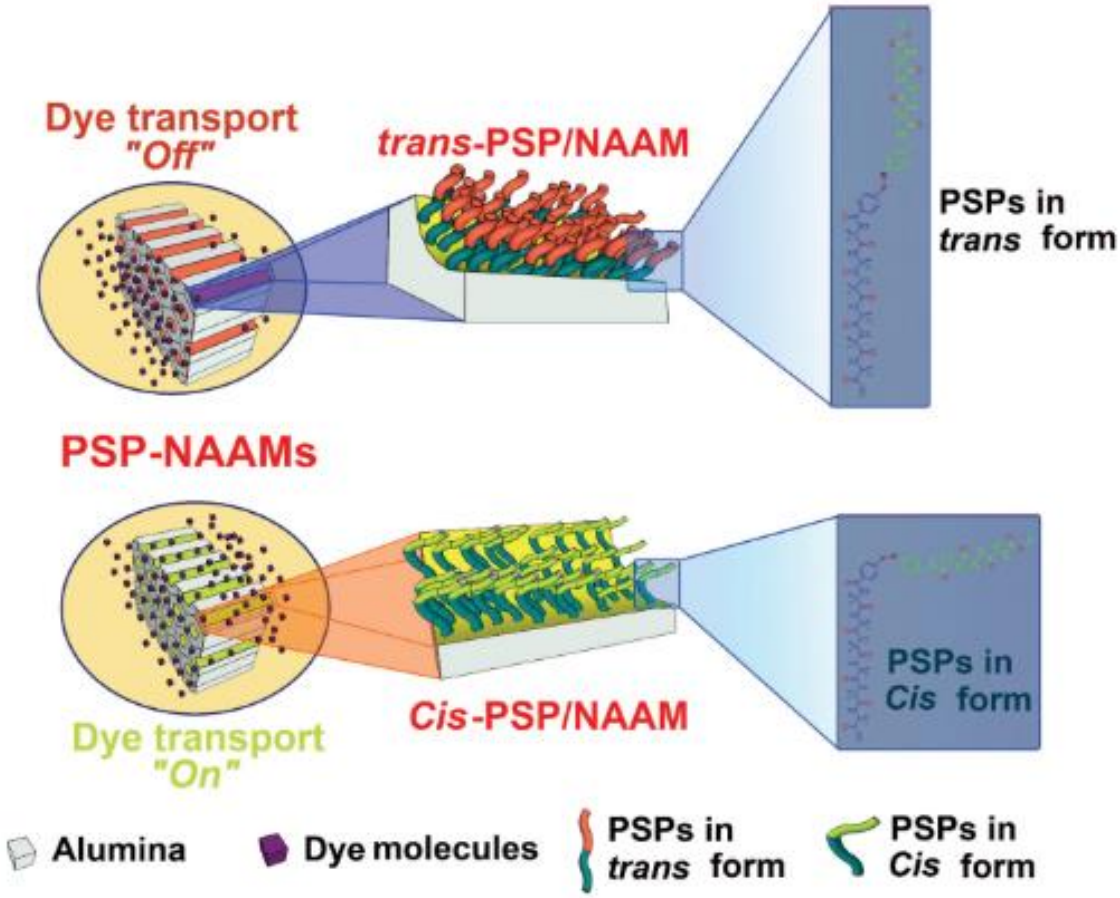
Photoswitchable Membranes Based on Peptide-Modified Nanoporous Anodic Alumina: Toward Smart Membranes for On-Demand Molecular Transport

Tushar Kumeria, Jingxian Yu, Mohammed Alsawat, Mahaveer D. Kurkuri, Abel Santos, Andrew D. Abell,* and Dusan Losic**



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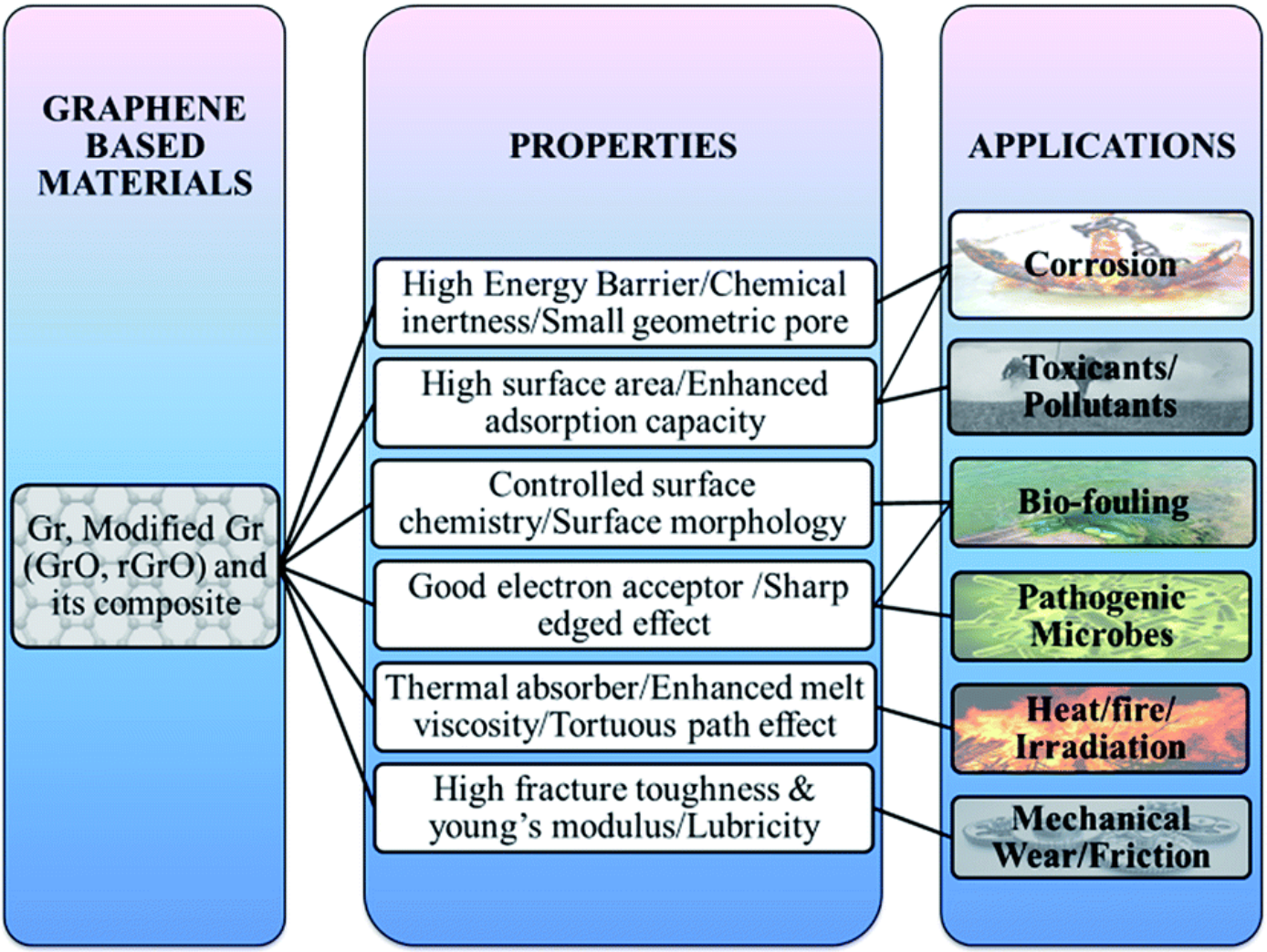
DOI: 10.1039/C5TA01010A (Review Article) *J. Mater. Chem. A*, 2015, **3**, 12580-12602

Graphene: a multipurpose material for protective coatings

Md J. Nine , Martin A. Cole , Diana N. H. Tran and Dusan Losic *



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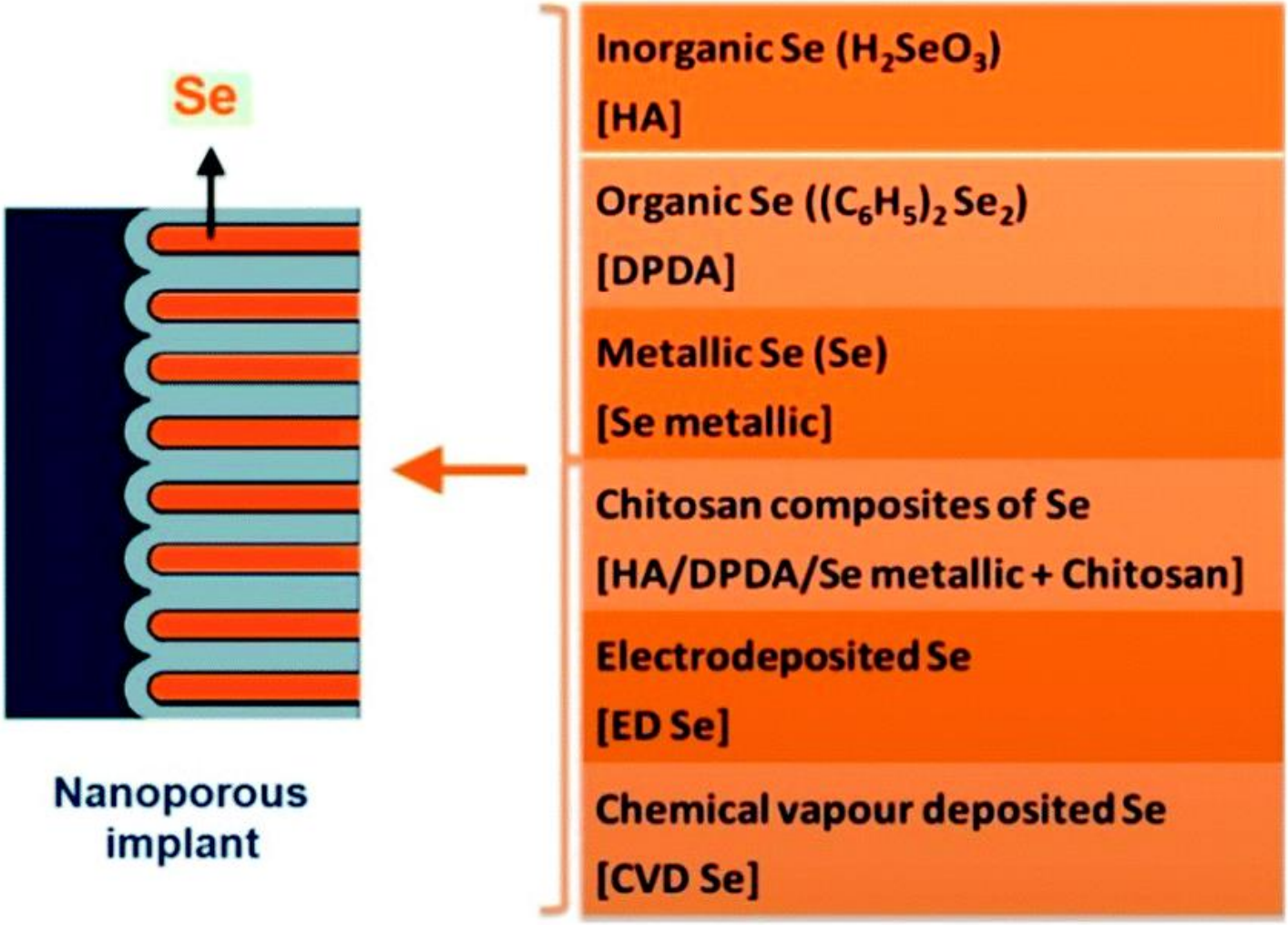
DOI: 10.1039/C5TB00125K (Paper) J. Mater. Chem. B, 2015, 3, 7090-7098

Localized drug delivery of selenium (Se) using nanoporous anodic aluminium oxide for bone implants†

Viswanathan S. Saji *[a], Tushar Kumeria [a], Karan Gulati [a], Matthew Prideaux [b], Shafiur Rahman [a], Mohammed Alsawat [a], Abel Santos [a], Gerald J. Atkins [b] and Dusan Losic *[a]



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Research Article

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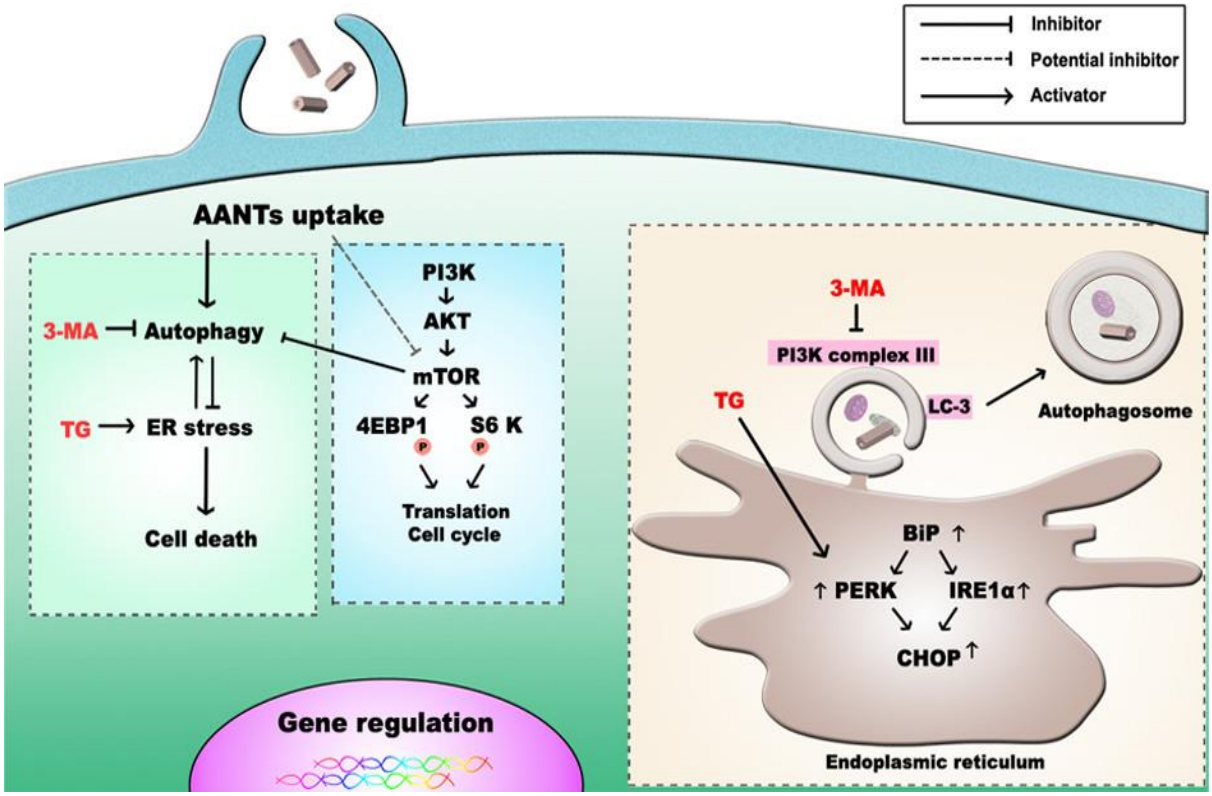
Bioinert Anodic Alumina Nanotubes for Targeting of Endoplasmic Reticulum Stress and Autophagic Signaling: A Combinatorial Nanotube-Based Drug Delivery System for Enhancing Cancer Therapy

Ye Wang,[†,‡] Gagandeep Kaur,[†,‡] Yuting Chen,[†] Abel Santos,[*,†] Dusan Losic,[*,†] and Andreas Evdokiou[*,†,‡]



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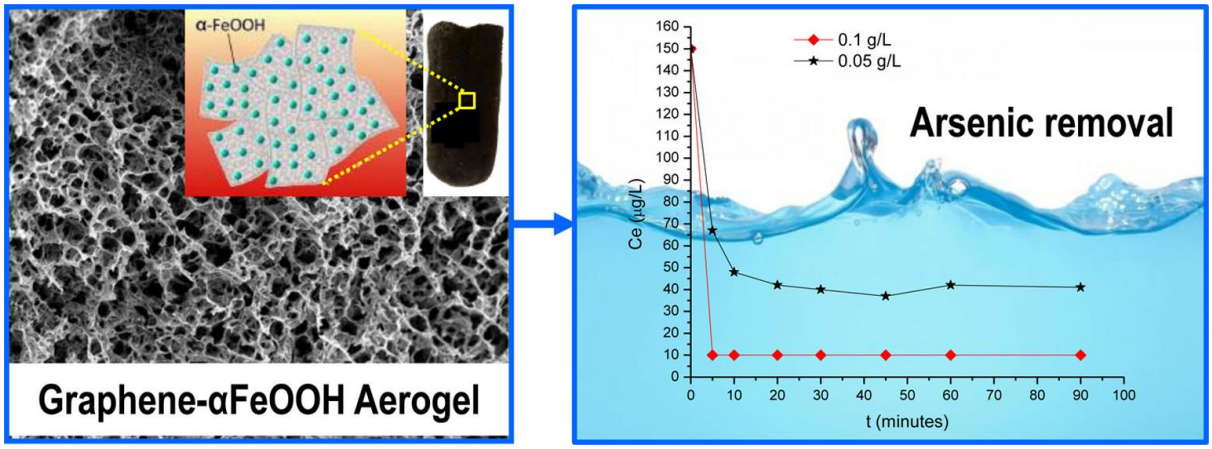
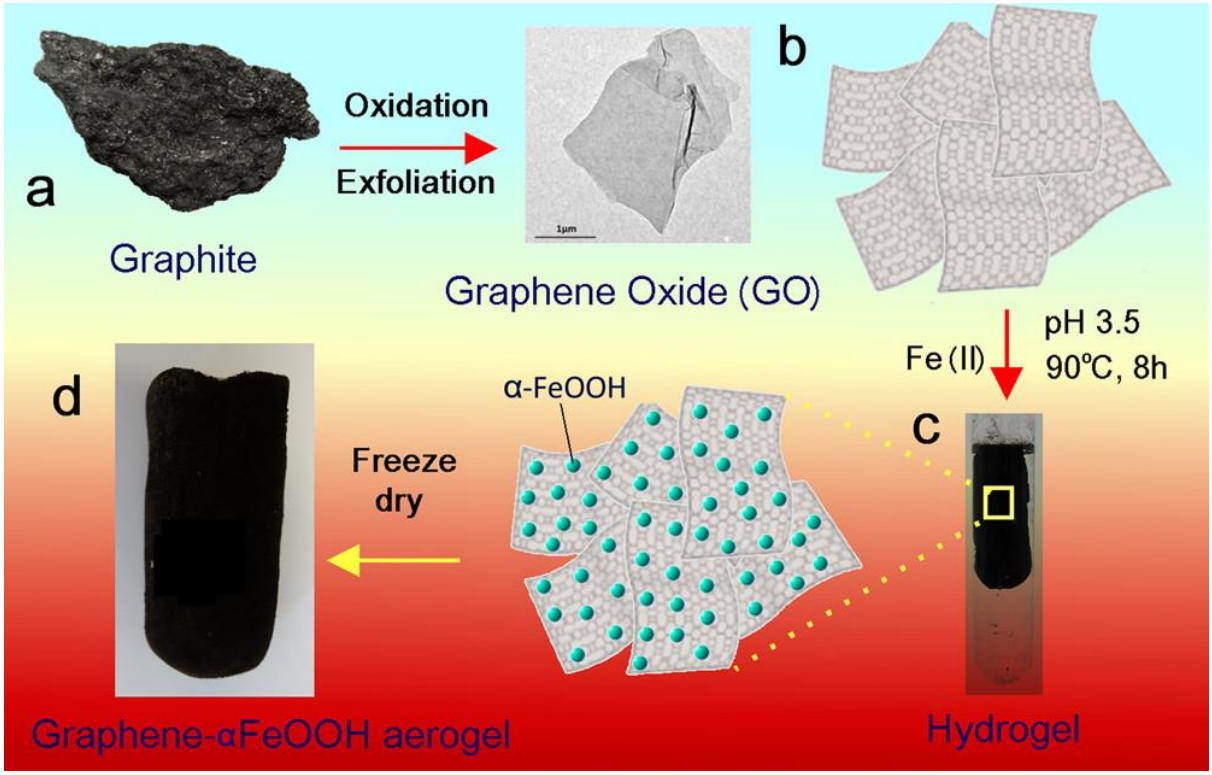
Graphene Aerogels Decorated with α-FeOOH Nanoparticles for Efficient Adsorption of Arsenic from Contaminated Waters

Ivan Andjelkovic,*[,†,‡] Diana N. H. Tran,[‡] Shervin Kabiri,[‡] Sara Azari,[‡] Marijana Markovic,[§] and Dusan Losic*[,‡]





CARBON 93 (2015) 681–692

Available at www.sciencedirect.com

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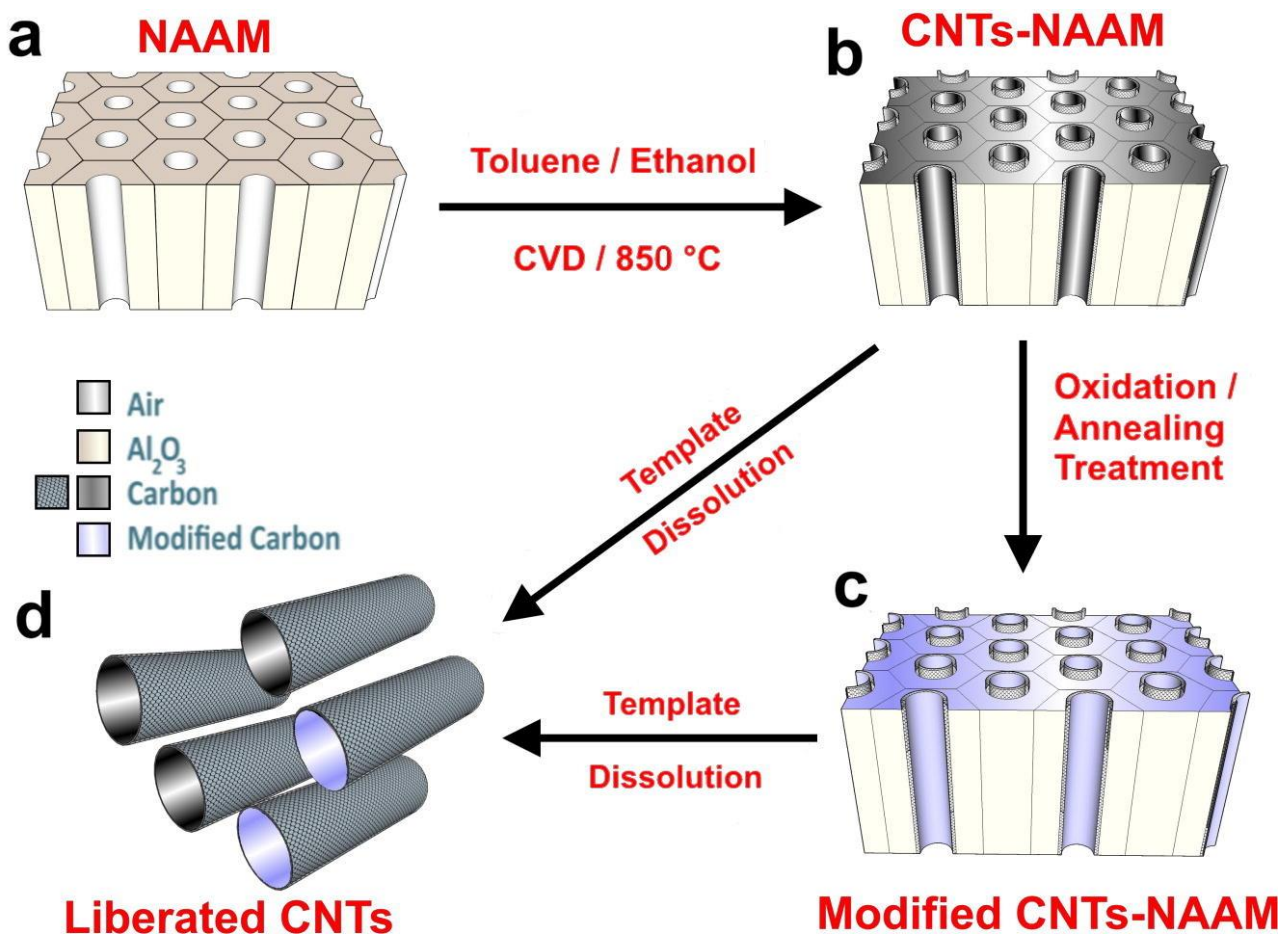
Carbon nanotube-nanoporous anodic alumina composite membranes with controllable inner diameters and surface chemistry: Influence on molecular transport and chemical selectivity

Mohammed Alsawat [a], *Tariq Altalhi* [a,b], *Tushar Kumeria* [a], *Abel Santos* [a], *Dusan Losic* [a,*]



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Research Article

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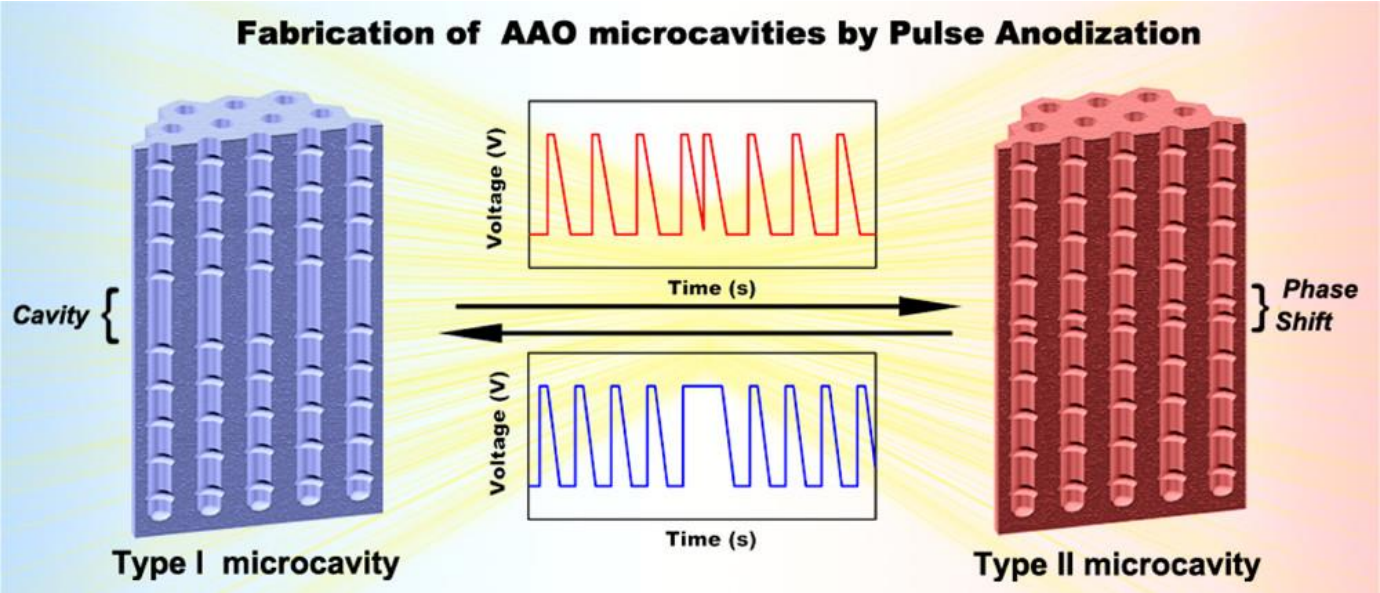
Facile Synthesis of Optical Microcavities by a Rationally Designed Anodization Approach: Tailoring Photonic Signals by Nanopore Structure

Ye Wang,[†,‡] Yuting Chen,[†] Tushar Kumeria,[†] Fuyuan Ding,[†] Andreas Evdokiou,[*,‡] Dusan Losic,[*,†] and Abel Santos[*,†]



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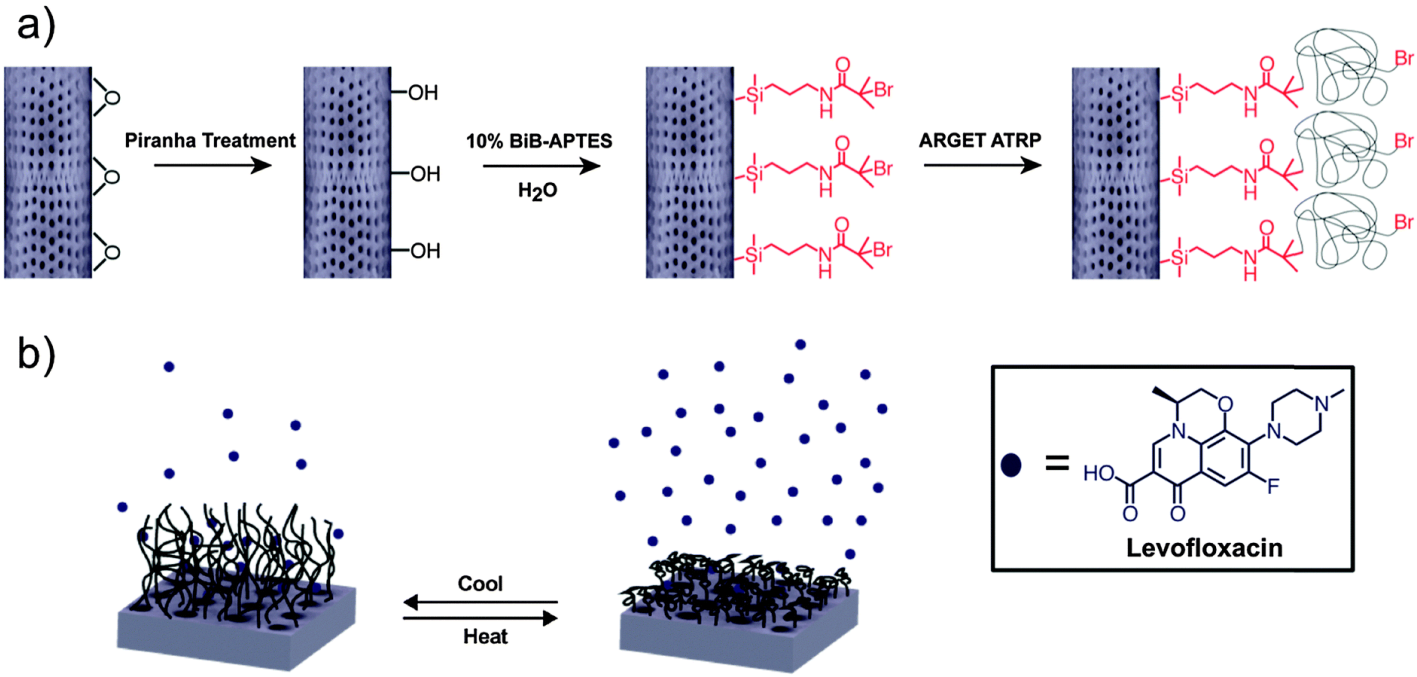
DOI: 10.1039/C5TB00648A (Communication) J. Mater. Chem. B, 2015, 3, 4325-4329

Fabrication of stimulus-responsive diatom biosilica microcapsules for antibiotic drug delivery†

R. B. Vasani [a], D. Losic [b], A. Cavallaro [a] and N. H. Voelcker *[a]



THE JOURNAL OF PHYSICAL CHEMISTRY C

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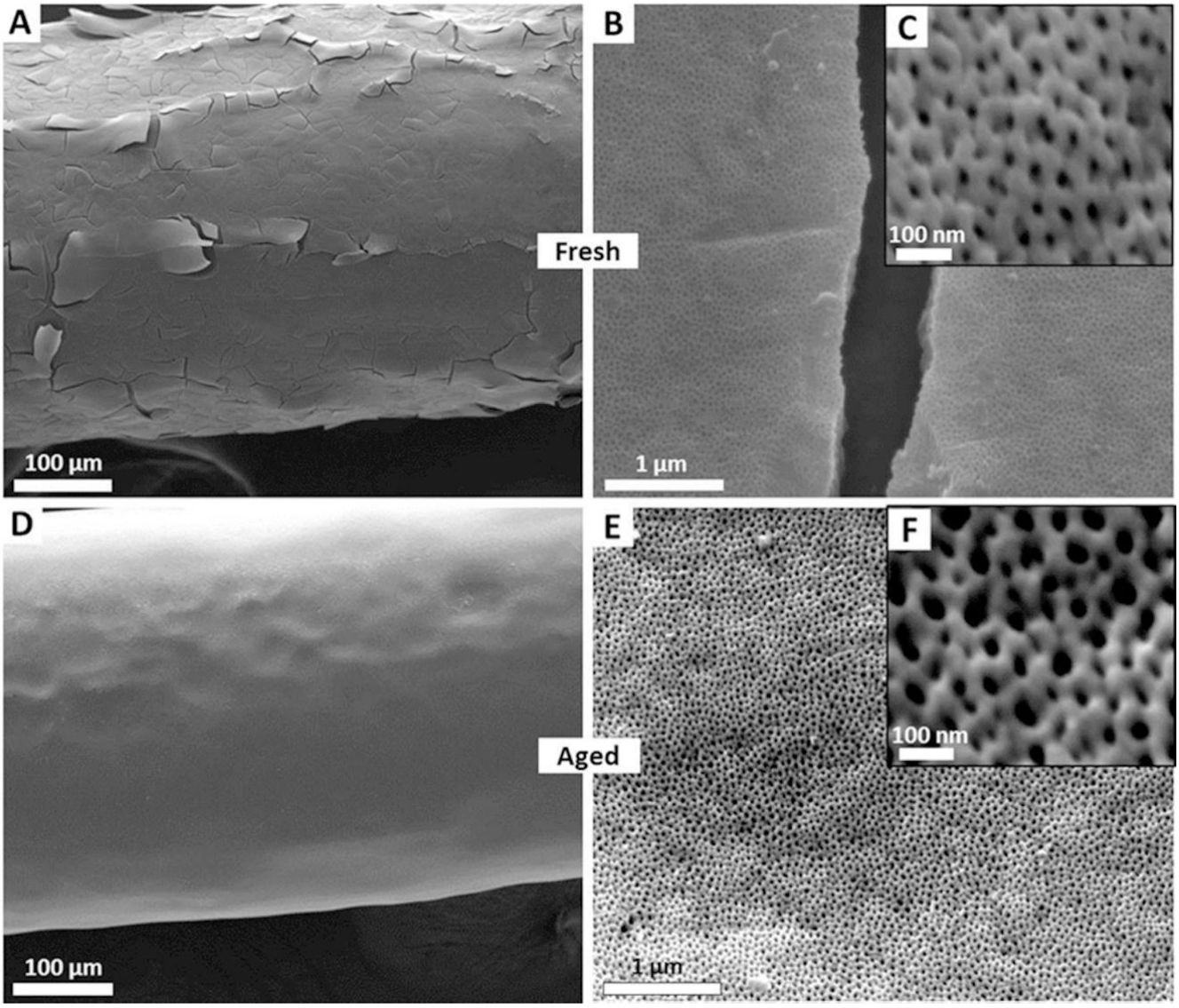
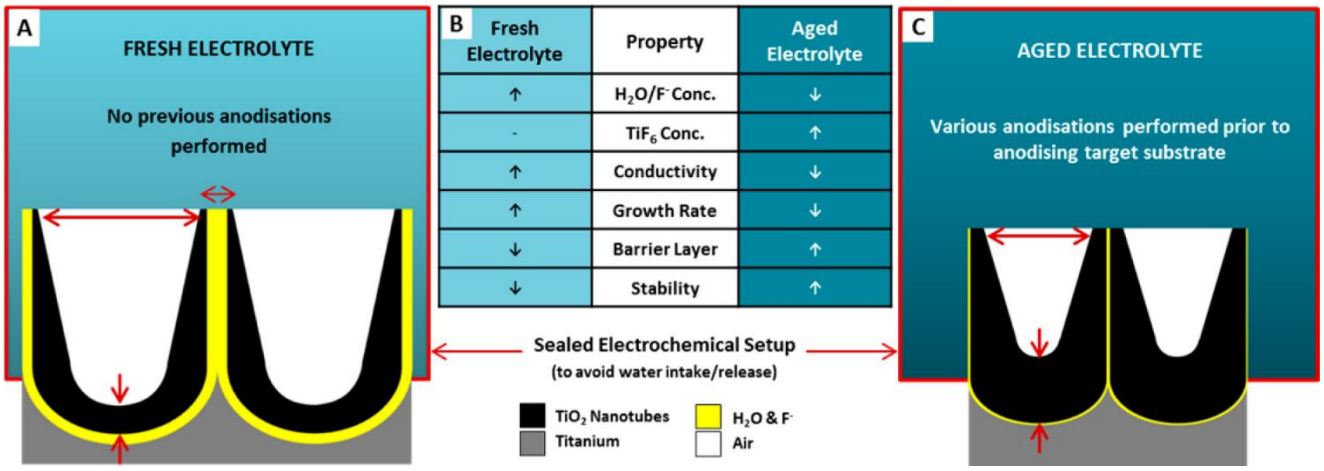
Optimizing Anodization Conditions for the Growth of Titania Nanotubes on Curved Surfaces

Karan Gulati,[†] Abel Santos,[†] David Findlay,[‡] and Dusan Losic*[,†]





Fresh Electrolyte	Property	Aged Electrolyte
↑	H_2O/F^- Conc.	↓
-	TiF_6 Conc.	↑
↑	Conductivity	↓
↑	Growth Rate	↓
↓	Barrier Layer	↑
↓	Stability	↑

Electrochimica Acta 174 (2015) 672–681

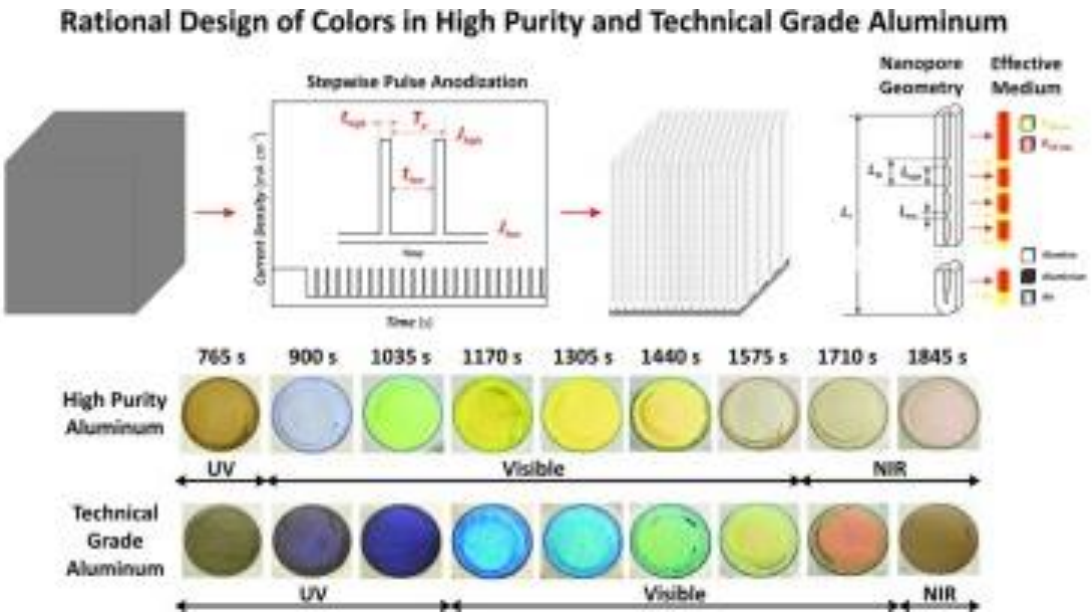
Contents lists available at ScienceDirect

Electrochimica Acta

journal homepage: www.elsevier.com/locate/electacta

On The Generation of Interferometric Colors in High Purity and Technical Grade Aluminum: An Alternative Green Process for Metal Finishing Industry

Yuting Chen[a,b,c], Abel Santos[a,*], Daena Ho[a], Ye Wang[a], Tushar Kumeria[a], Junsheng Li[b], Changhai Wang[c,**], Dusan Losic[a]



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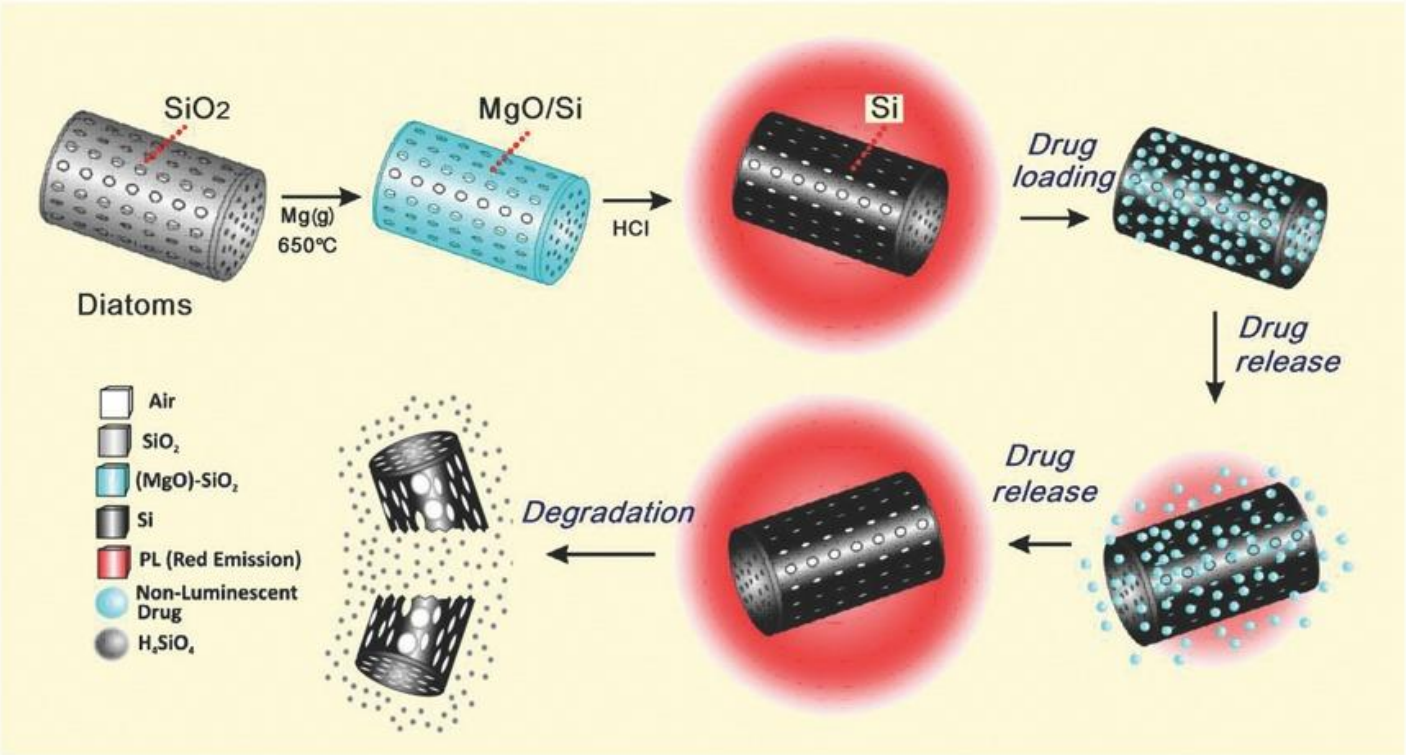
Luminescent Silicon Diatom Replicas: Self-Reporting and Degradable Drug Carriers with Biologically Derived Shape for Sustained Delivery of Therapeutics

Shaheer Maher, Mohammed Alsawat, Tushar Kumeria, Dina Fathalla, Gihan Fetih, Abel Santos, Fawzia Habib, and Dusan Losic**



International Journal of Nanomedicine

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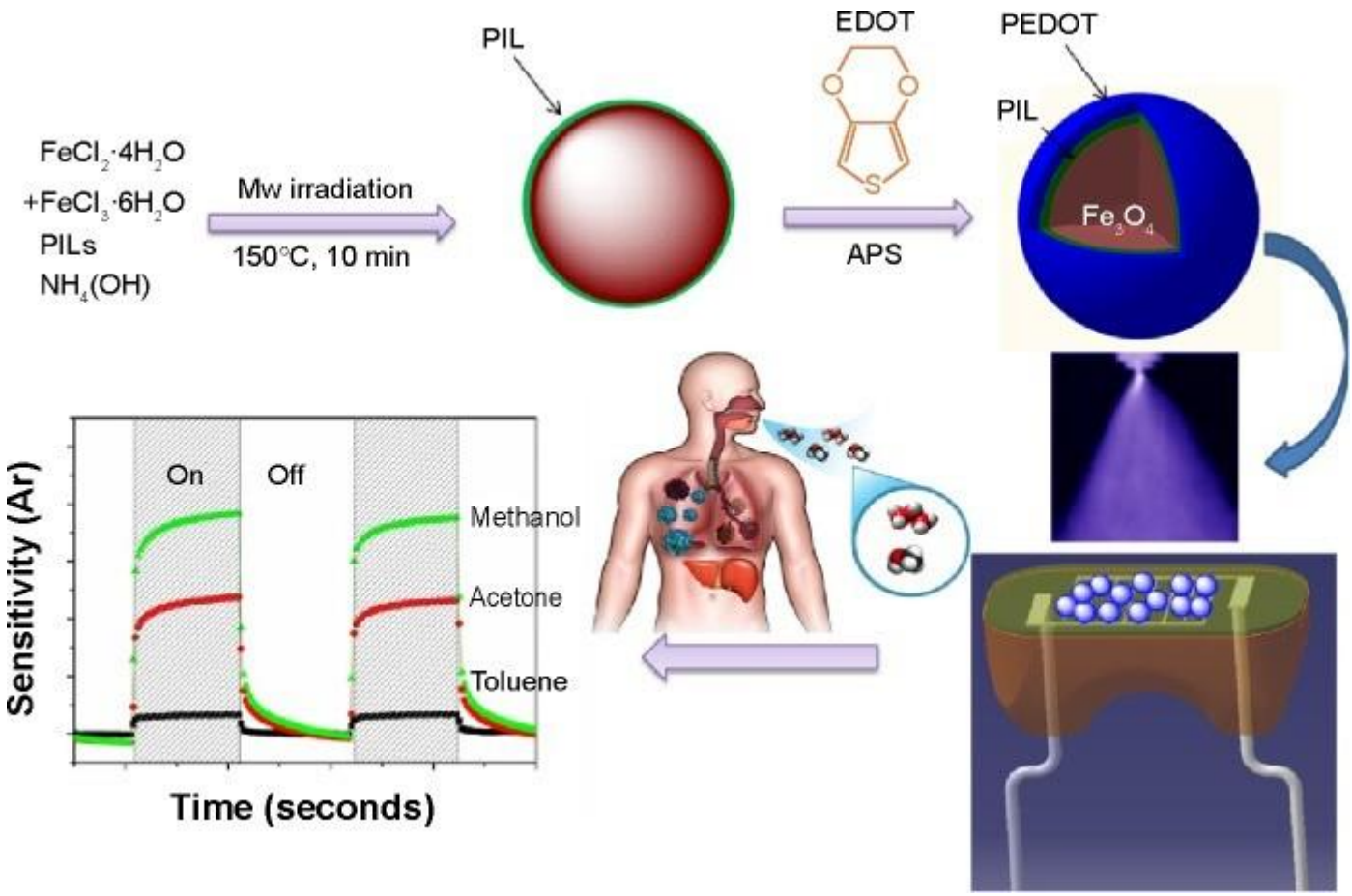
ORIGINAL RESEARCH

Core-shell nanostructured hybrid composites for volatile organic compound detection

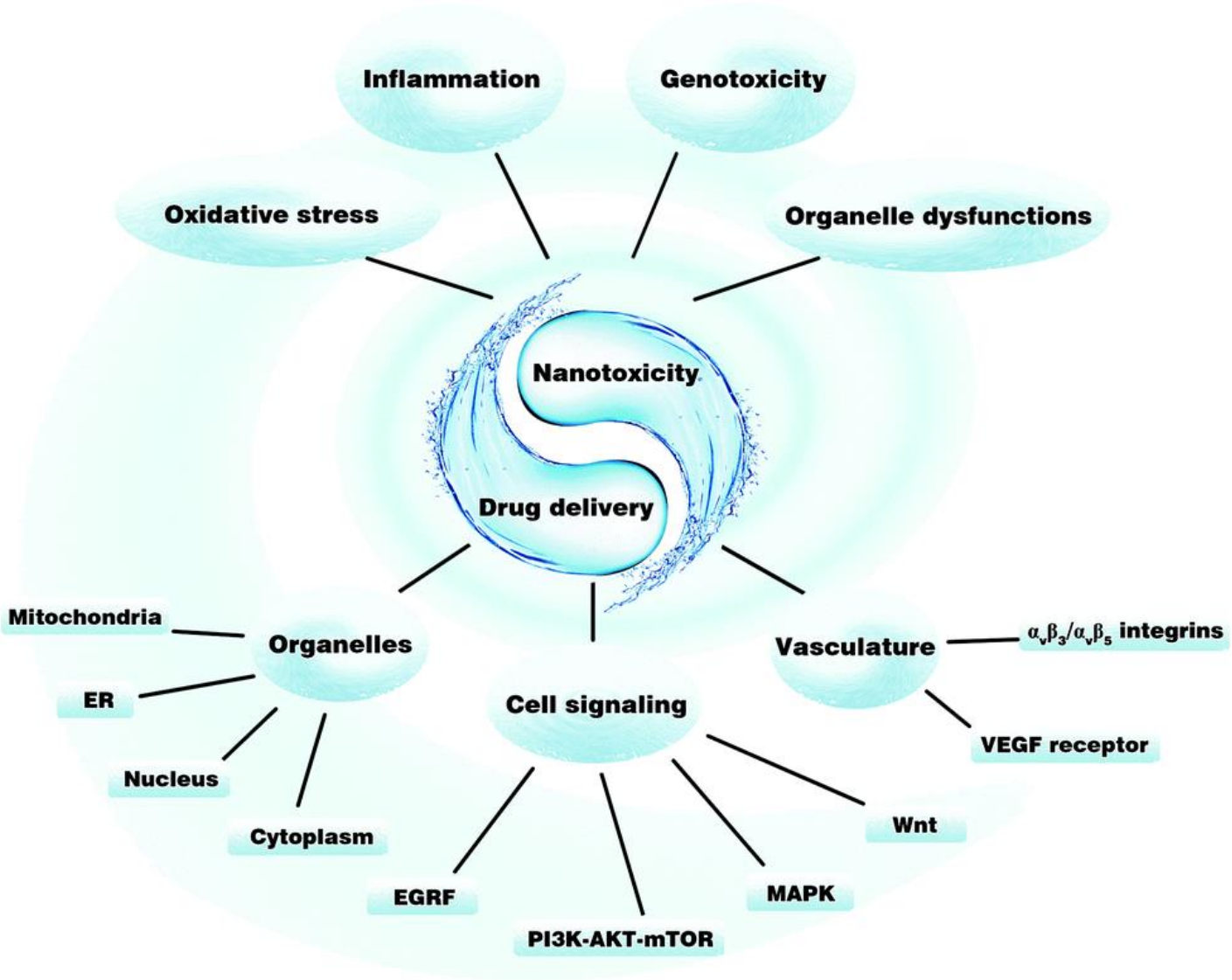
Tran Thanh Tung[1,2]
Dusan Losic[1]
Seung Jun Park[3]
Jean-Francois Feller[2]
TaeYoung Kim[3]



DOI: 10.1039/C5TB00956A (Review Article) J. Mater. Chem. B, 2015, 3, 7153-7172

An overview of nanotoxicity and nanomedicine research: principles, progress and implications for cancer therapy

Ye Wang [ab], Abel Santos *[a], Andreas Evdokiou *[b] and Dusan Losic *[a]



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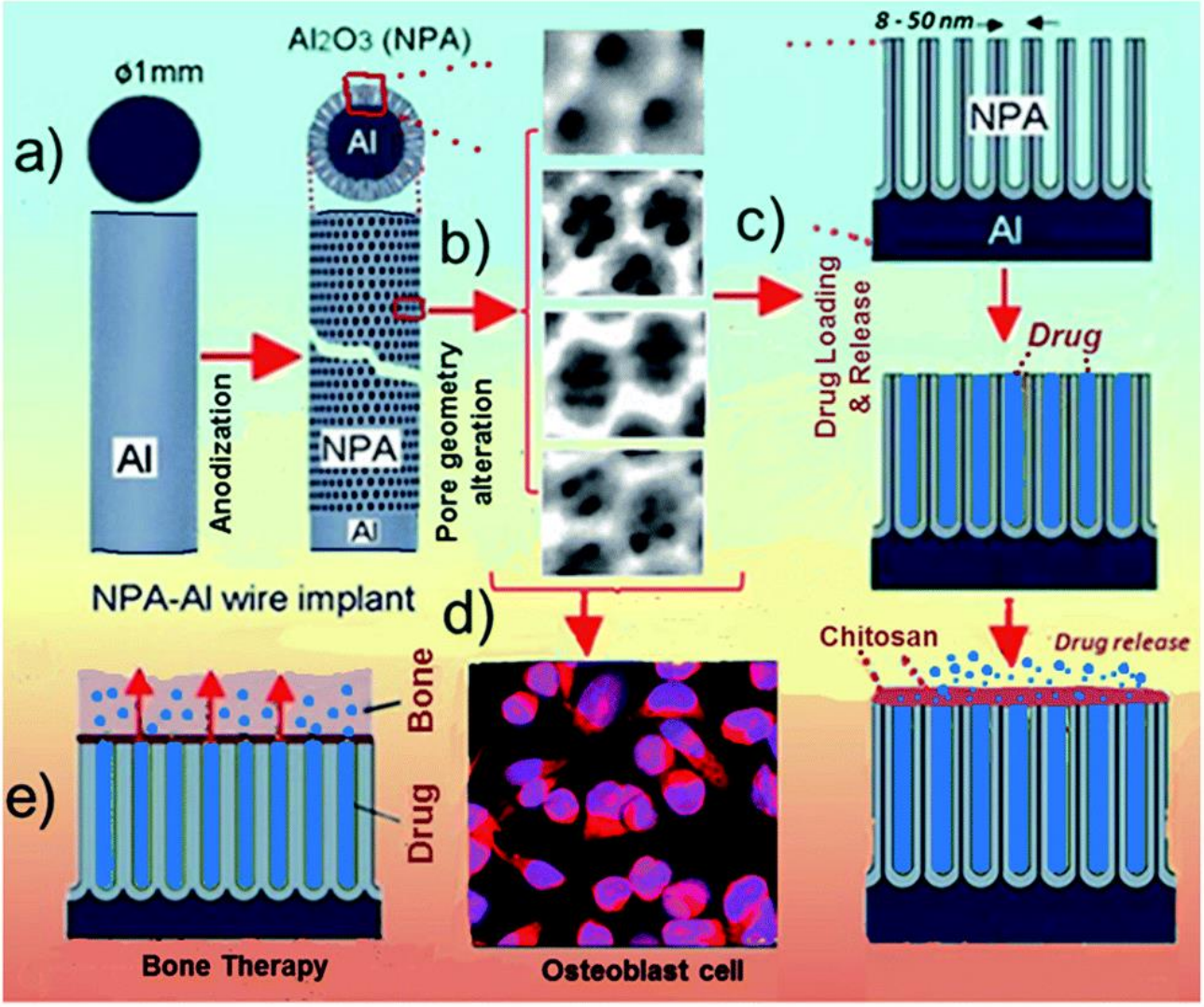
DOI: 10.1039/C5RA10418A (Paper) *RSC Adv.*, 2015, **5**, 75004-75014

Nanoengineered drug-releasing aluminium wire implants: comparative investigation of nanopore geometry, drug release and osteoblast cell adhesion

Shafiur Rahman[a], Renee Ormsby[b], Abel Santos[a], Gerald J. Atkins[b], David M. Findlay[b] and Dusan Losic*[a]



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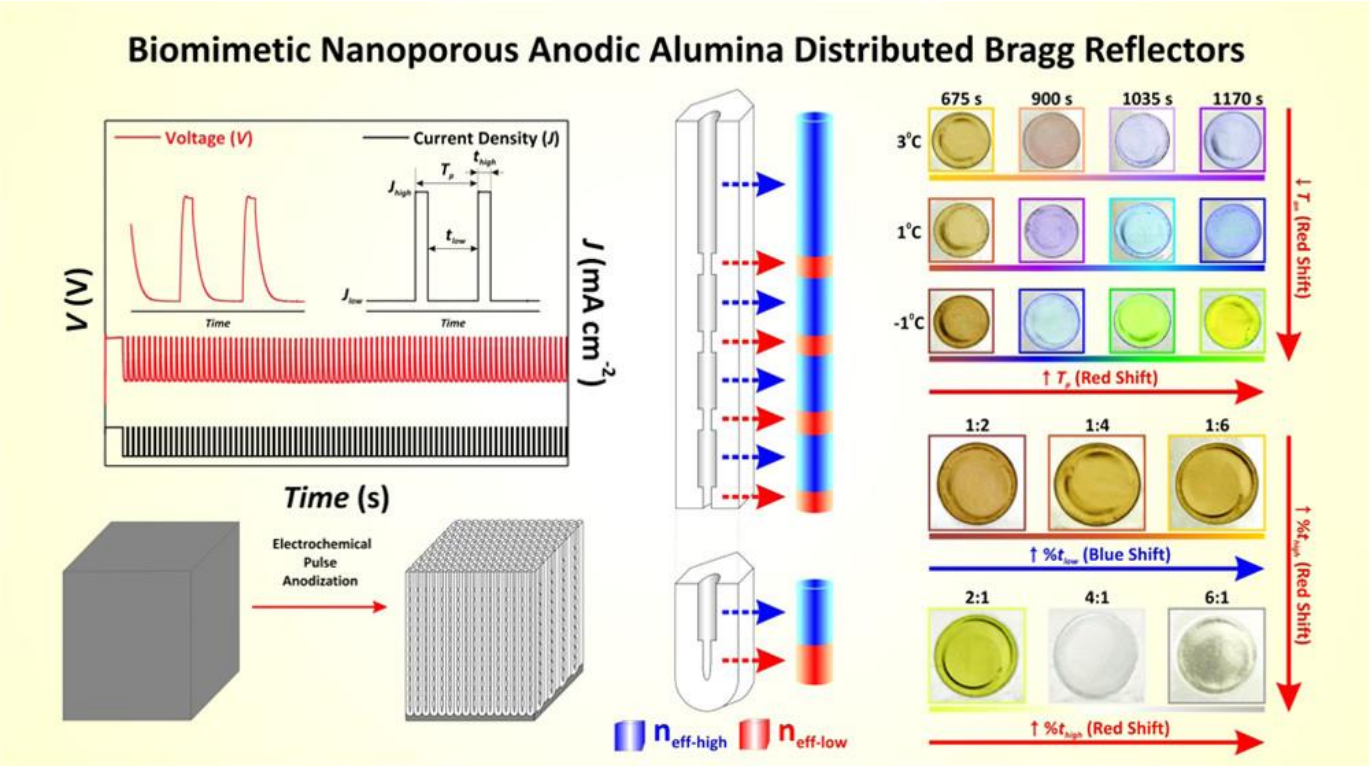
Biomimetic Nanoporous Anodic Alumina Distributed Bragg Reflectors in the Form of Films and Microsized Particles for Sensing Applications

Yuting Chen,[†,‡,§] Abel Santos,[*,†] Ye Wang,[†] Tushar Kumeria,[†] Junsheng Li,[‡] Changhai Wang,[*,§] and Dusan Losic[†]



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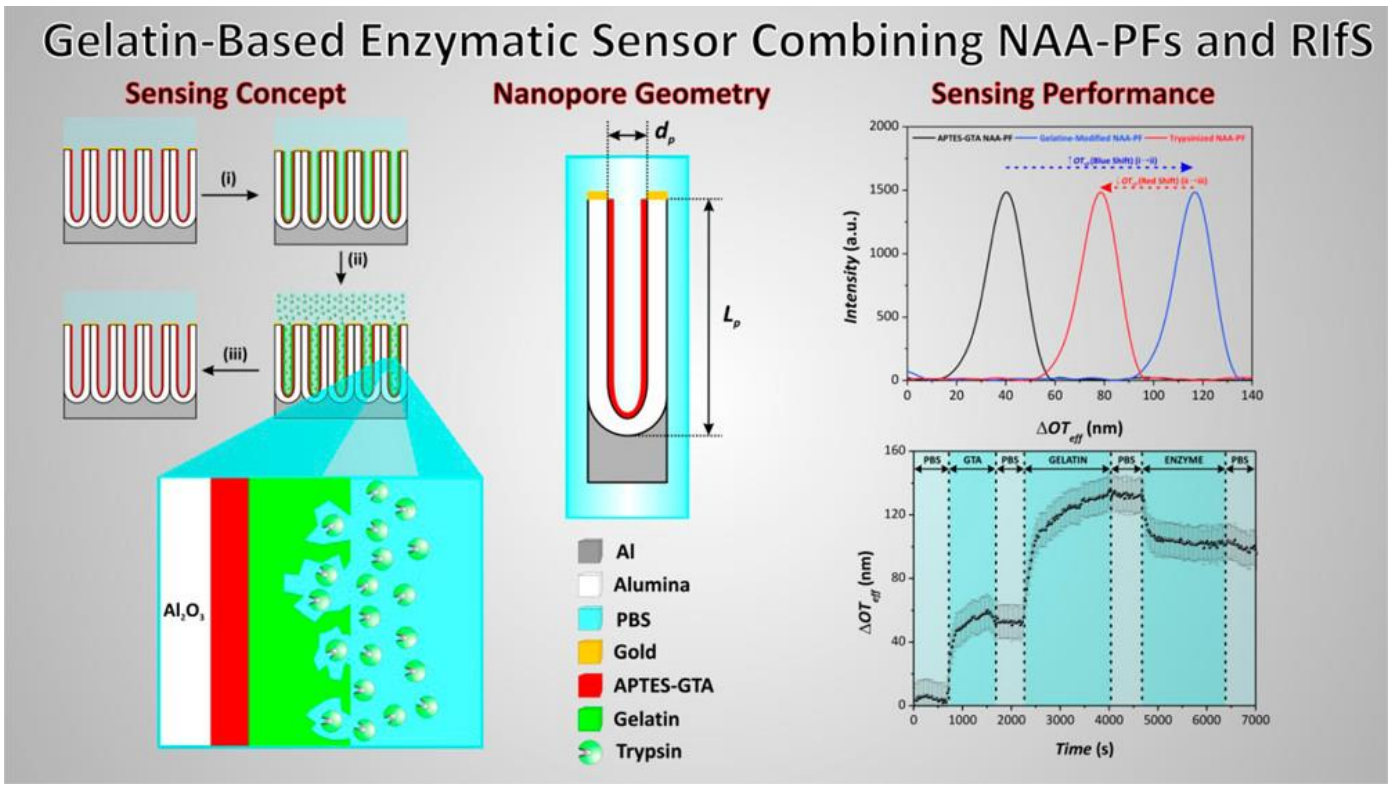
Label-Free Real-Time Quantification of Enzyme Levels by Interferometric Spectroscopy Combined with Gelatin-Modified Nanoporous Anodic Alumina Photonic Films

Mahdieh Nemati, Abel Santos,* Tushar Kumeria, and Dusan Losic*



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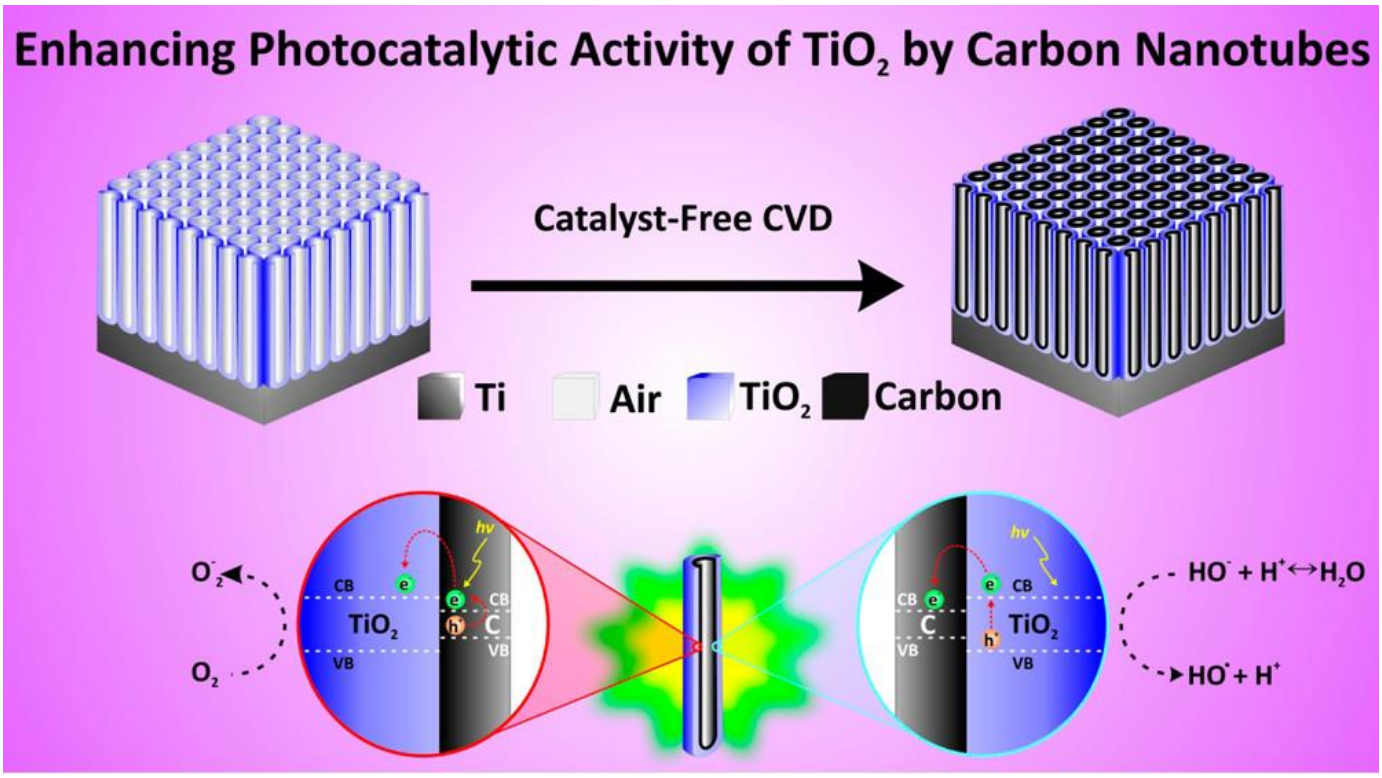
Synthesis of Carbon Nanotube–Nanotubular Titania Composites by Catalyst-Free CVD Process: Insights into the Formation Mechanism and Photocatalytic Properties

Mohammed Alsawat,[†,‡] Tariq Altalhi,[†,‡] Karan Gulati,[†] Abel Santos,[*,†] and Dusan Losic[*,†]



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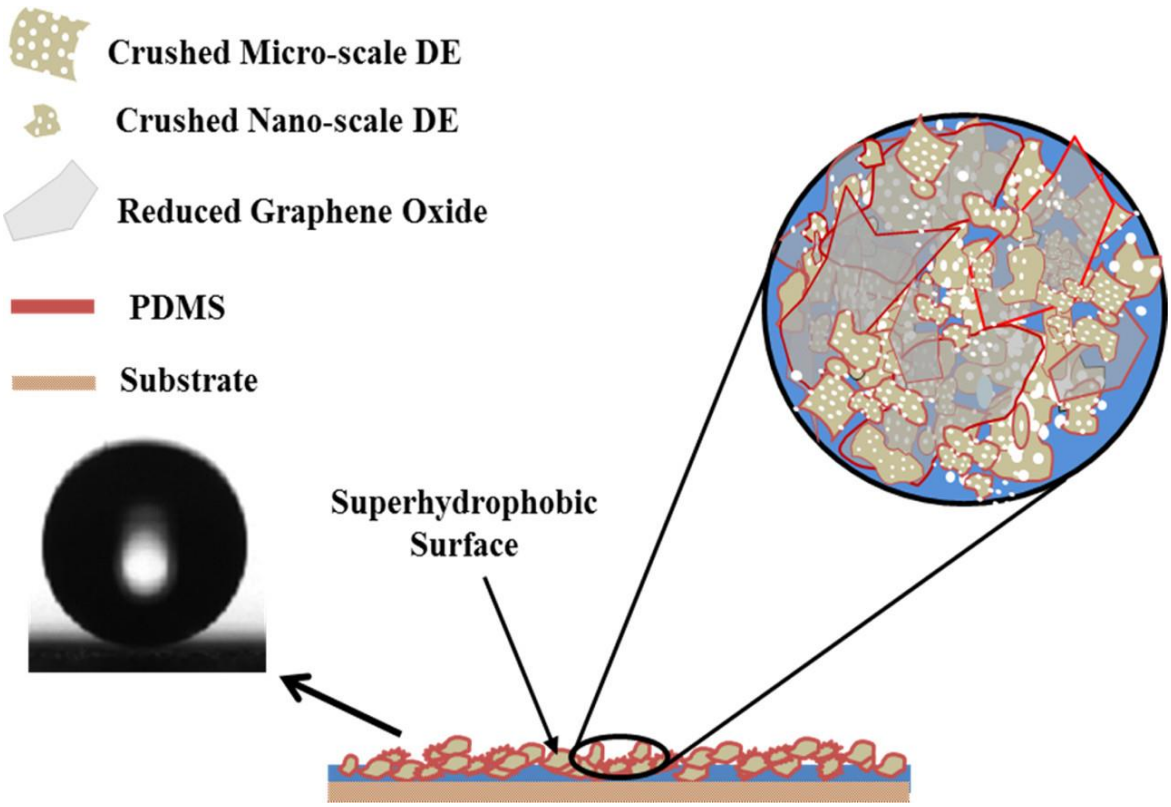
Robust Superhydrophobic Graphene-Based Composite Coatings with Self-Cleaning and Corrosion Barrier Properties

Md J. Nine, Martin A. Cole, Lucas Johnson, Diana N. H. Tran, and Dusan Losic*



ACS Photonics

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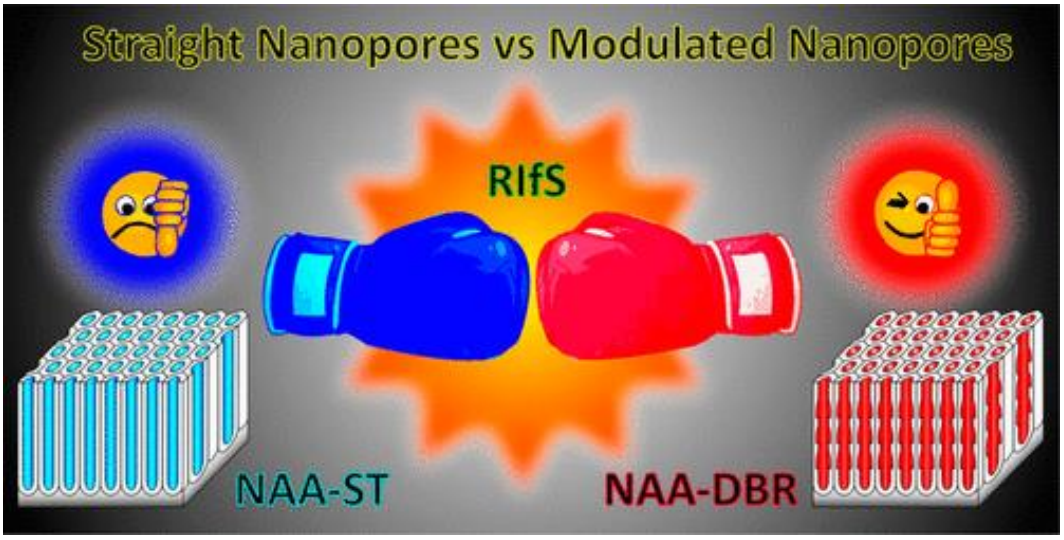
Advanced Structural Engineering of Nanoporous Photonic Structures: Tailoring Nanopore Architecture to Enhance Sensing Properties

Tushar Kumeria,[†,§] Abel Santos,*[,†,§] Mohammad Mahbubur Rahman,[†,‡] Josep Ferré-Borrull,[‡] Lluís F. Marsal,[‡] and Dusan Losic[†]



Catalysis Science & Technology

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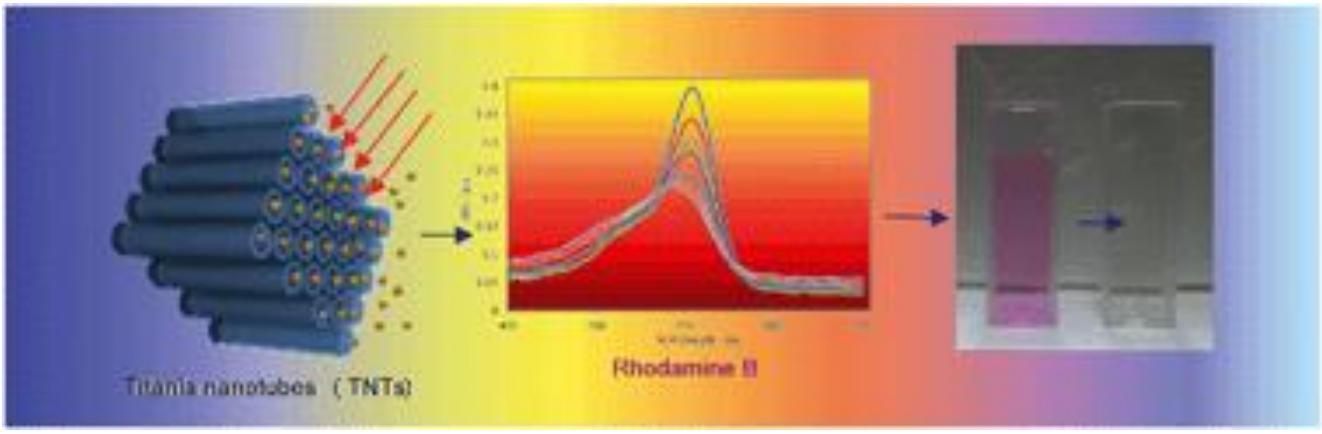
Influence of dimensions, inter-distance and crystallinity of titania nanotubes (TNTs) on their photocatalytic activity

Mohammed Alsawat,[ab] Tariq Altalhi,[a] Joe G. Shapter[b] and Dusan Losic*[a]



Journal of
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FEATURE ARTICLE

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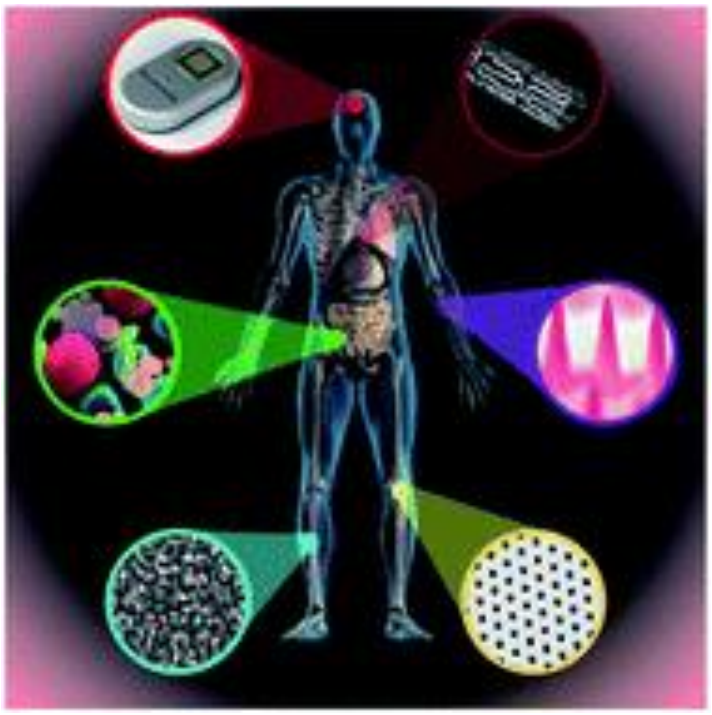
Drug-releasing implants: current progress, challenges and perspectives

Abel Santos,[a] Moom Sinn Aw,†[a] Manpreet Bariana,†[abc] Tushar Kumeria,†[a] Ye Wang†[a] and Dusan Losic*[a]



European Journal of Pharmaceutical Sciences 63 (2014) 226–232

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European Journal of Pharmaceutical Sciences

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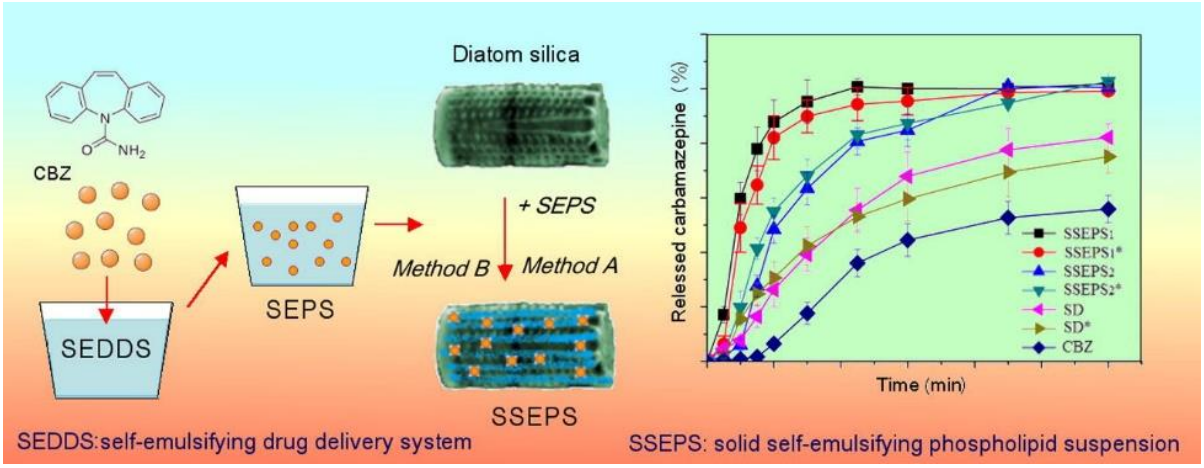
Solid self-emulsifying phospholipid suspension (SSEPS) with diatom as a drug carrier

Mladen Milović [a], Spomenka Simović [b], Dušan Lošić [c], Andriy Dashevskiy [d], Svetlana Ibrić [a,*]



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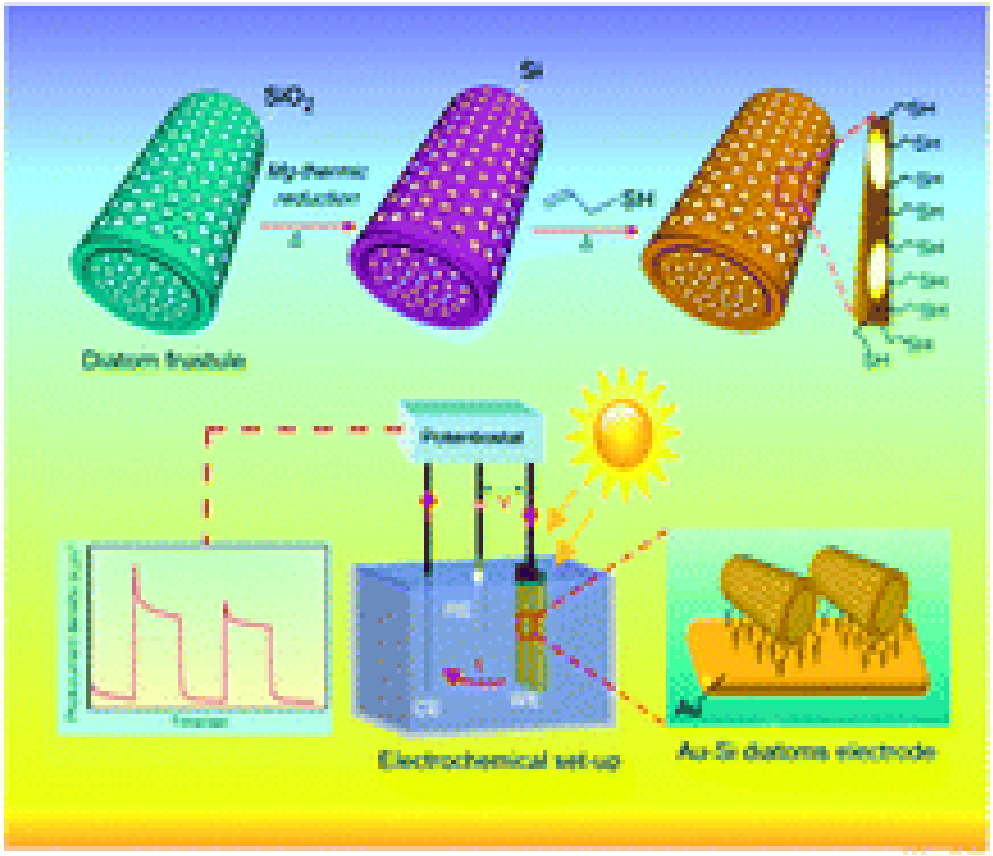
Cite this: *Chem. Commun.*, 2014, **50**, 10441

Received 12th June 2014,
Accepted 22nd July 2014

Silicon diatom frustules as nanostructured photoelectrodes†

Soundarrajan Chandrasekaran,[a] Martin J. Sweetman,[a] Krishna Kant,[b] William Skinner,[c] Dusan Losic,[b] Thomas Nann[c] and Nicolas H. Voelcker*[a]



analytical chemistry

Article

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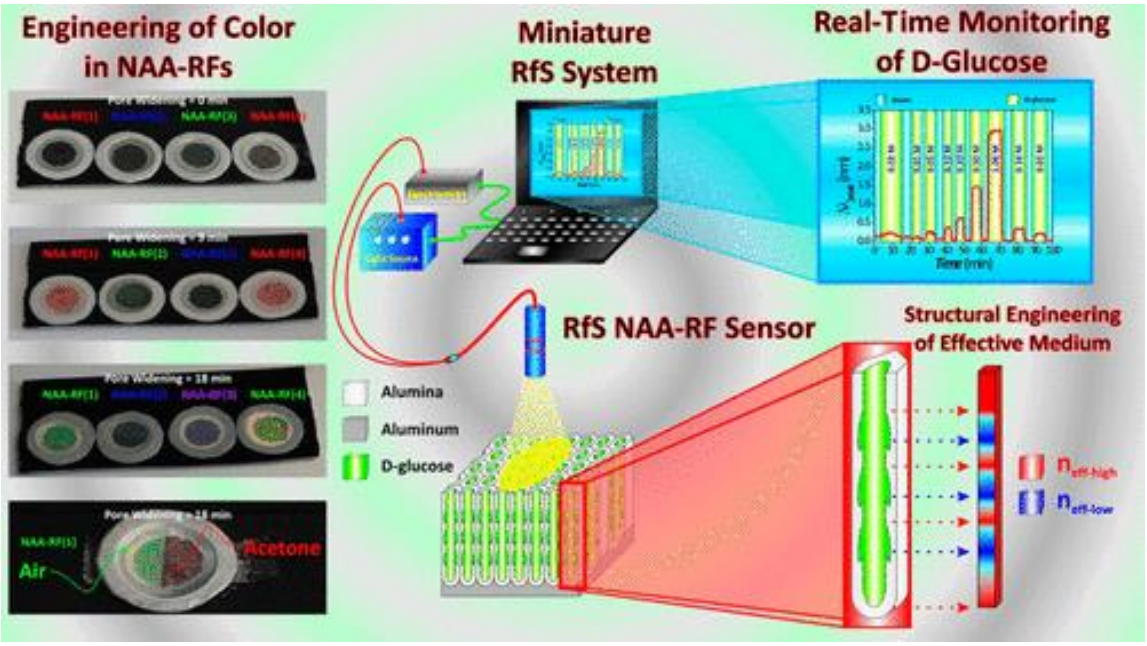
Structural and Optical Nanoengineering of Nanoporous Anodic Alumina Rugate Filters for Real-Time and Label-Free Biosensing Applications

Tushar Kumeria,[†] Mohammad Mahbubur Rahman,[†,‡] Abel Santos,*[,†] Josep Ferré-Borrull,[‡] Lluís F. Marsal,[‡] and Dusan Losic[†]



Electrochimica Acta 139 (2014) 225–231

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Electrochimica Acta

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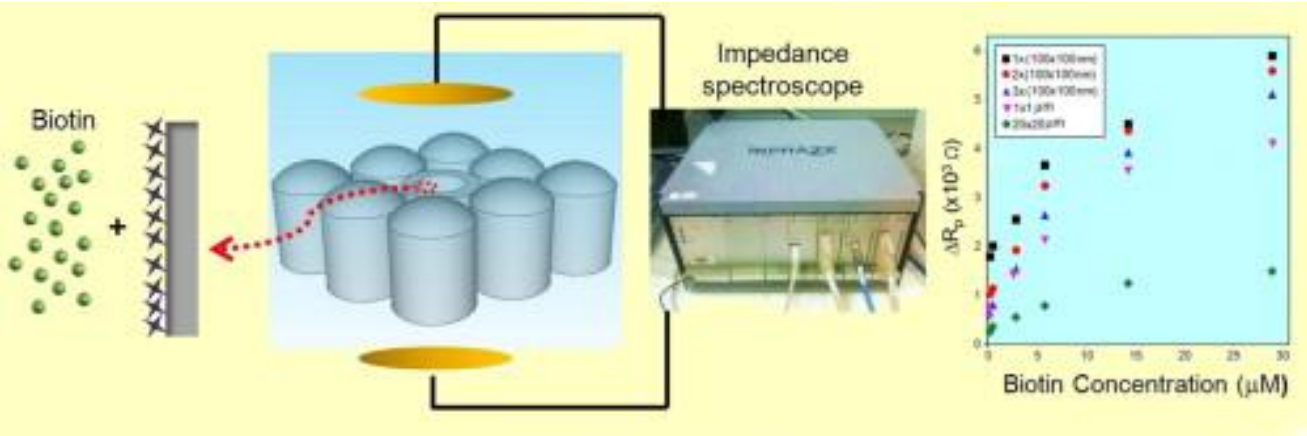
Characterization of impedance biosensing performance of single and nanopore arrays of anodic porous alumina fabricated by focused ion beam (FIB) milling

Krishna Kant[a,b], Craig Priest[c], Joe G. Shapter[a], Dusan Losic[b,*]



Nanoscale

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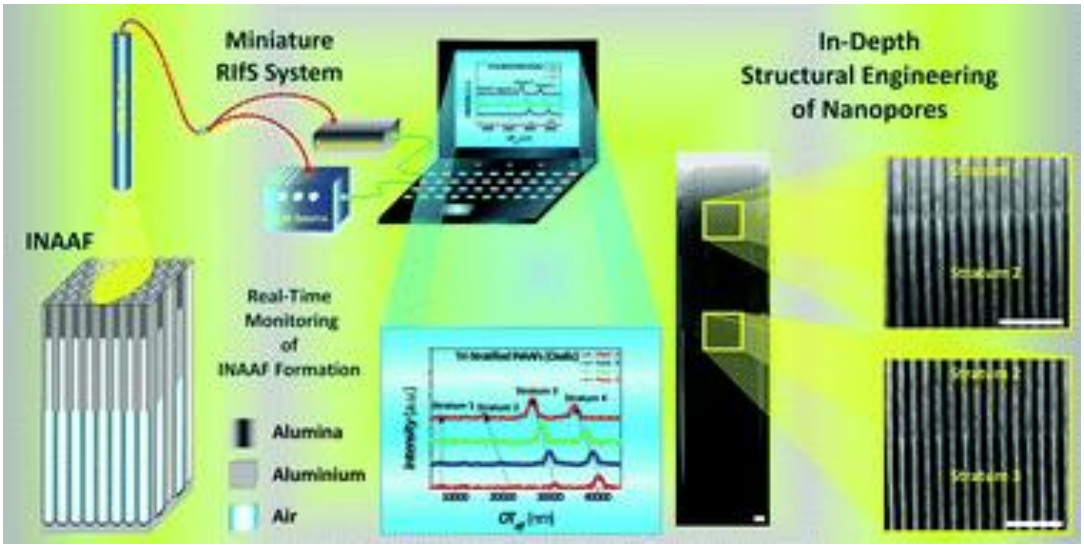
Cite this: *Nanoscale*, 2014, **6**, 9991

In situ monitored engineering of inverted nanoporous anodic alumina funnels: on the precise generation of 3D optical nanostructures†

Abel Santos,* Tushar Kumeria,‡ Ye Wang‡ and Dusan Losic*



Biomaterials Science

REVIEW

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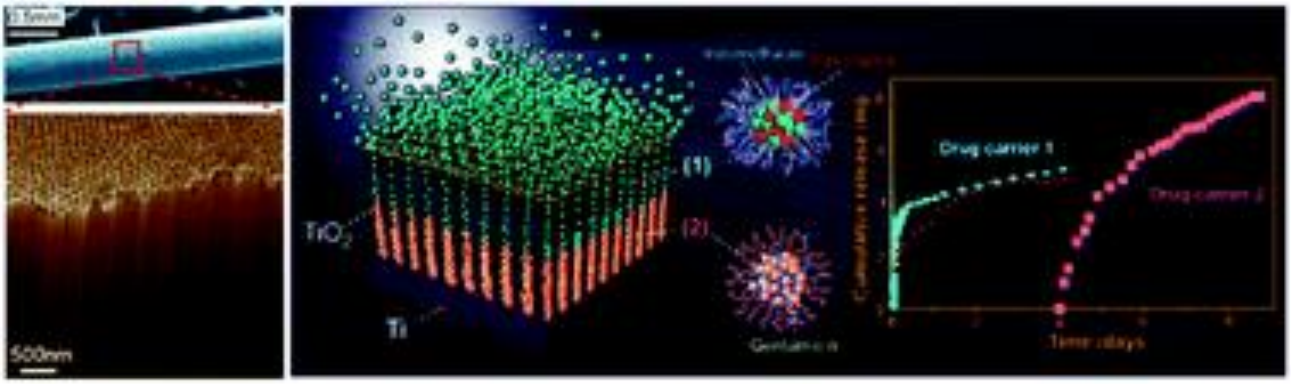
Cite this: *Biomater. Sci.*, 2014, **2**, 10

Non-eroding drug-releasing implants with ordered nanoporous and nanotubular structures: concepts for controlling drug release

Moom Sinn Aw, Mima Kurian and Dusan Losic*



Materials Letters 130 (2014) 210–214

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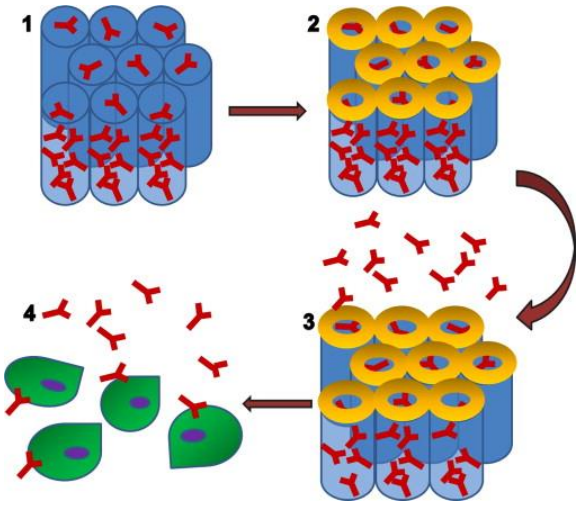
Controlled release and bioactivity of the monoclonal antibody rituximab from a porous matrix: A potential in situ therapeutic device

S. Simovic [a], K.R. Diener [b,c,d], A. Bachhuka [e], K. Kant [f], D. Losic [f], J.D. Hayball [c,d,g], M.P. Brownc [c,d,g,h], K. Vasilev [e,*]



RSC Advances

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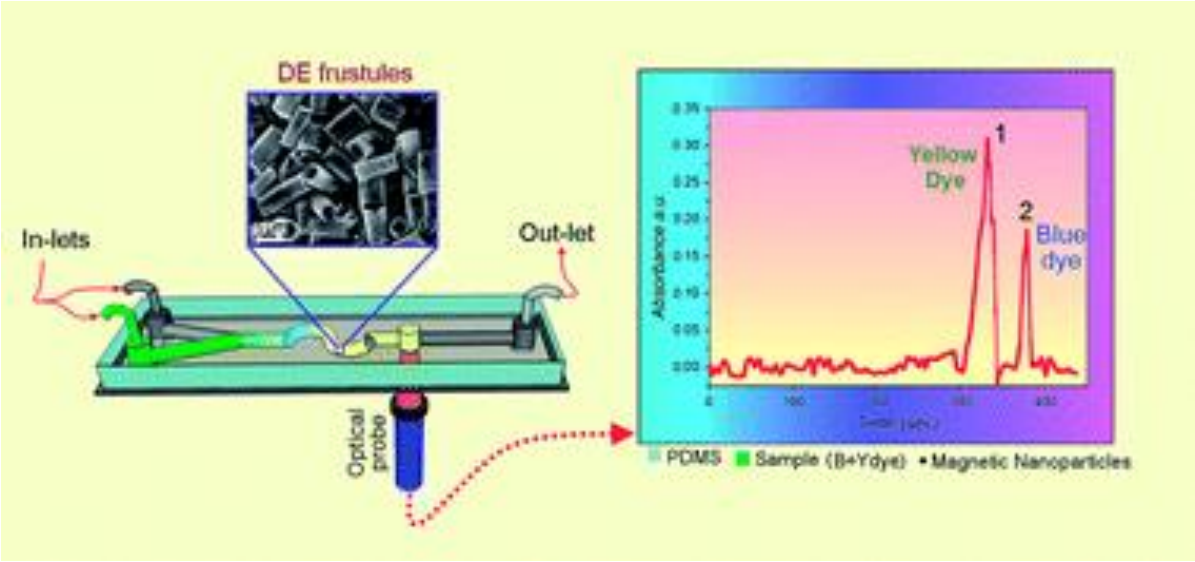
Frit-free PDMS microfluidic device for chromatographic separation and on-chip detection†

Cite this: *RSC Adv.*, 2014, **4**, 15276

Received 18th February 2014
Accepted 13th March 2014

Shervin Kabiri,‡[a] Mahaveer D. Kurkuri,‡[ab] Tushar Kumeria[a] and Dusan Losic*[a]



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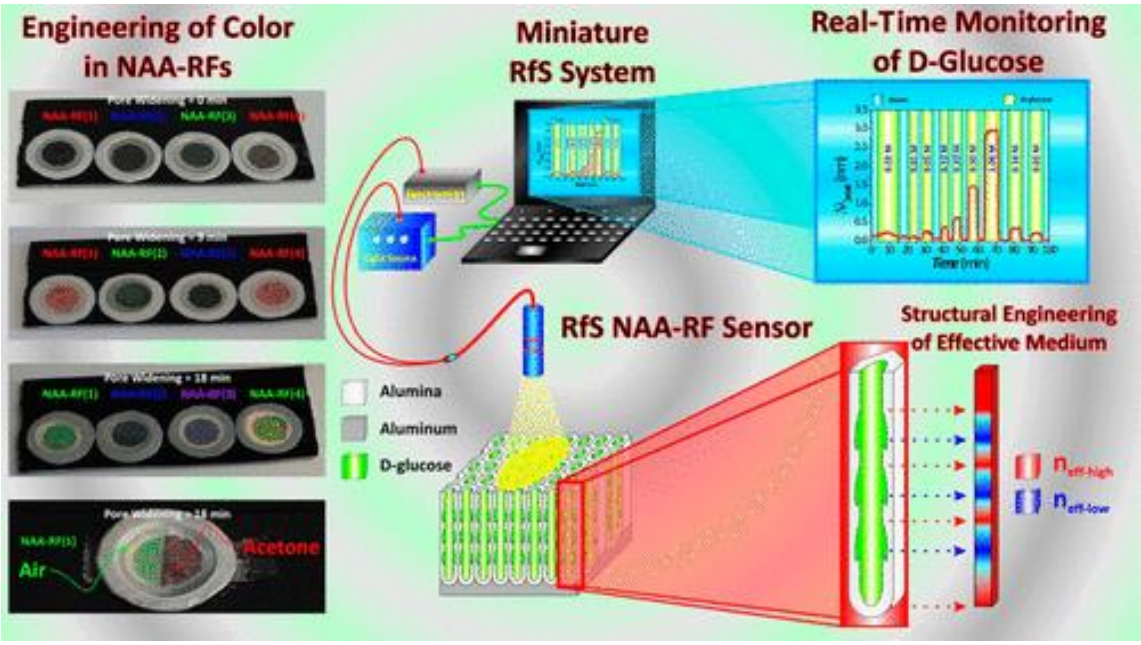
Structural and Optical Nanoengineering of Nanoporous Anodic Alumina Rugate Filters for Real-Time and Label-Free Biosensing Applications

Tushar Kumeria,[†] Mohammad Mahbubur Rahman,[†,‡] Abel Santos,*[,†] Josep Ferré-Borrull,[‡] Lluís F. Marsal,[‡] and Dusan Losic[†]



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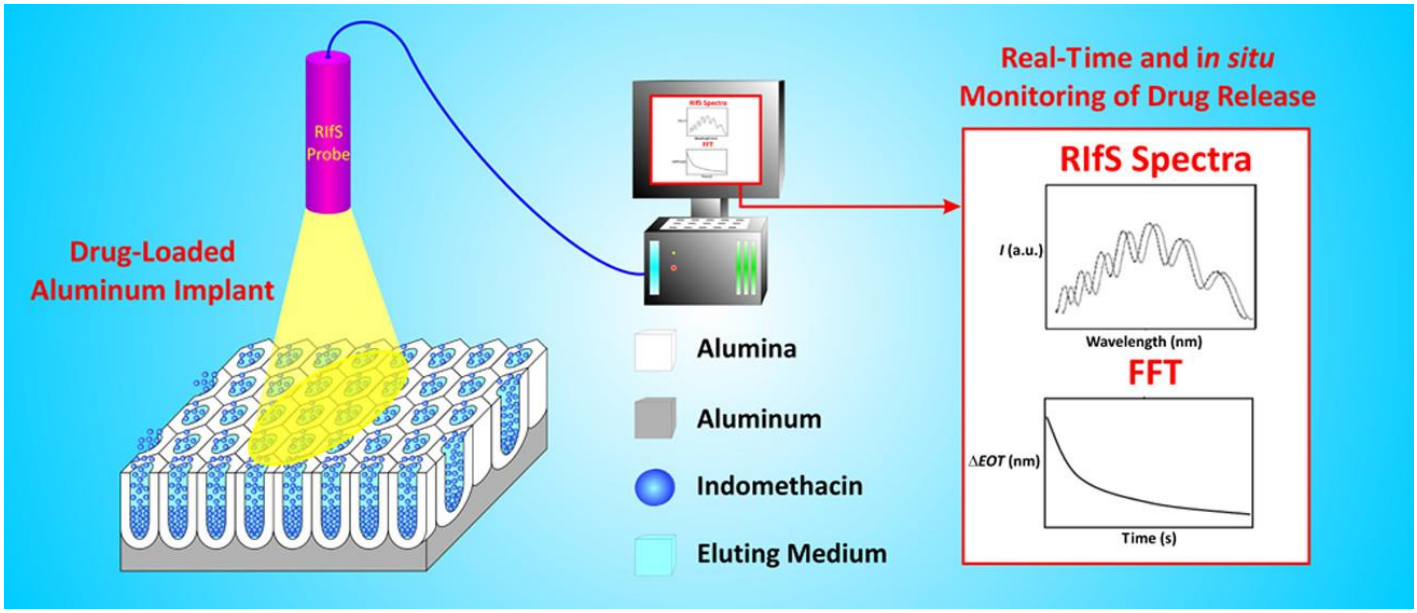
Real-time and in Situ Drug Release Monitoring from Nanoporous Implants under Dynamic Flow Conditions by Reflectometric Interference Spectroscopy

Tushar Kumeria, Karan Gulati, Abel Santos, and Dusan Losic*



CARBON 63 (2013) 423–433

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Synthesis of well-organised carbon nanotube membranes from non-degradable plastic bags with tuneable molecular transport: Towards nanotechnological recycling

Tariq Altalhi [a,b], *Tushar Kumeria* [a], *Abel Santos* [a], *Dusan Losic* [a,*]

International Journal of Pharmaceutics 443 (2013) 154–162

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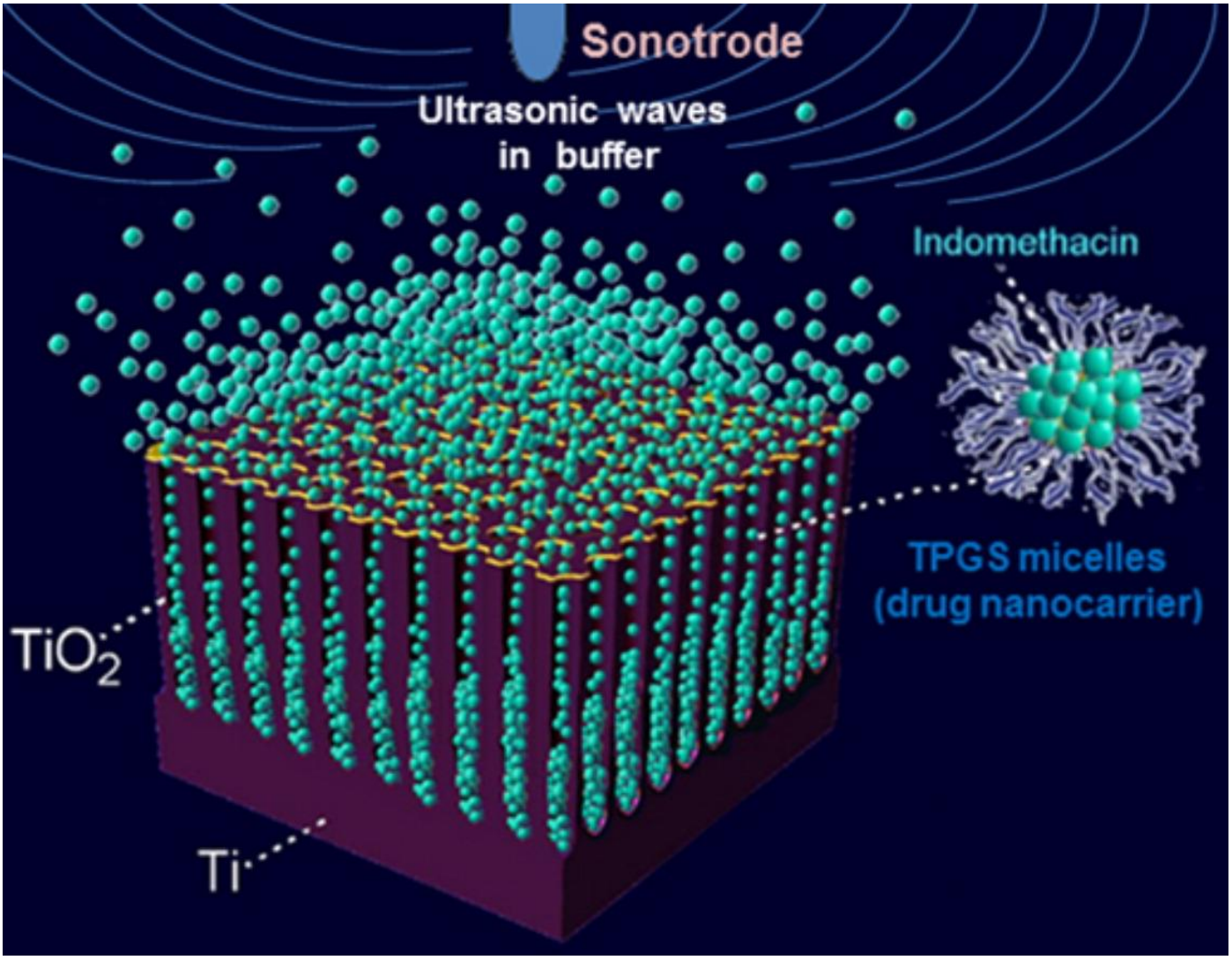
Pharmaceutical nanotechnology

Ultrasound enhanced release of therapeutics from drug-releasing implants based on titania nanotube arrays

Moom Sinn Aw*, Dusan Losic**



International Journal of Pharmaceutics 443 (2013) 230–241

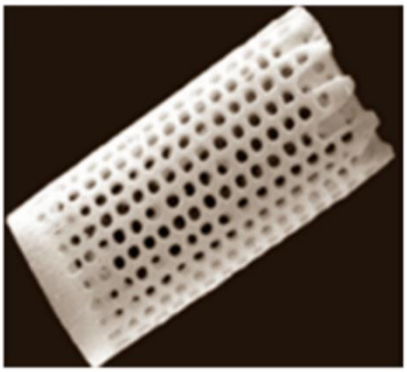
Contents lists available at SciVerse ScienceDirect

International Journal of Pharmaceutics

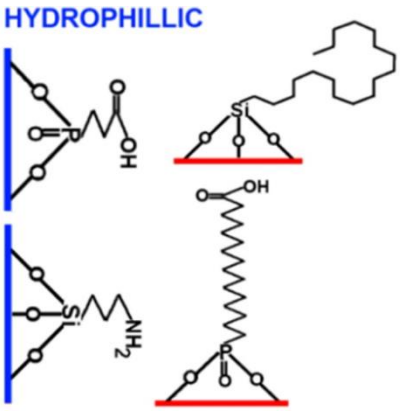
journal homepage: www.elsevier.com/locate/ijpharm

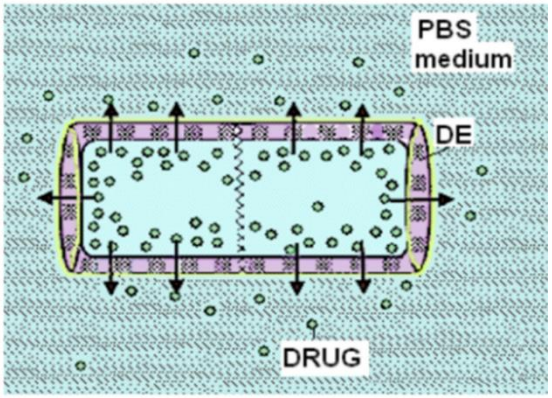
Tuning drug loading and release properties of diatom silica microparticles by surface modifications

Manpreet Bariana, Moom Sinn Aw, Mahaveer Kurkuri, Dusan Losic*



Diatom microparticle





GENTAMICIN INDOMETHACIN

Progress in Materials Science 58 (2013) 636–704

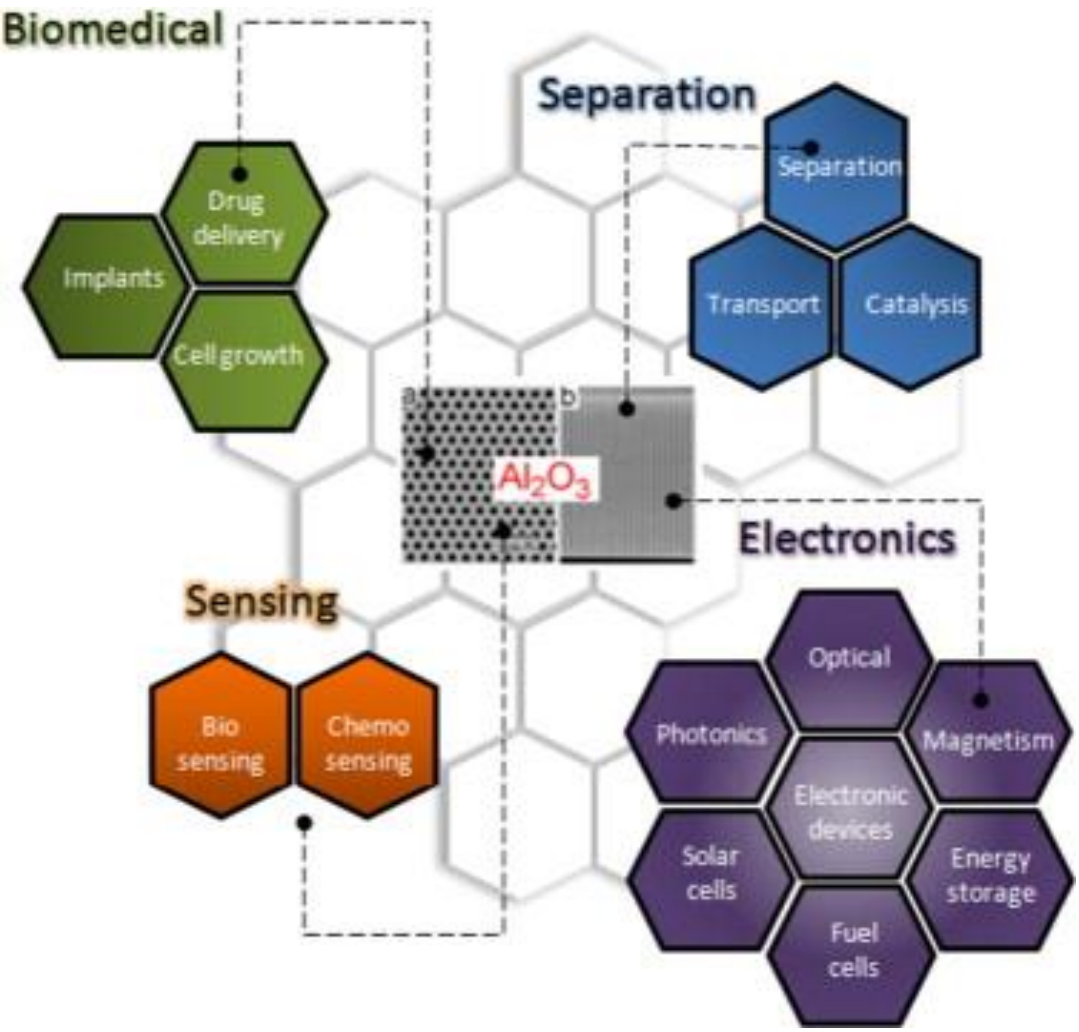
Contents lists available at SciVerse ScienceDirect

Progress in Materials Science

journal homepage: www.elsevier.com/locate/pmatsci

Nanoporous anodic aluminium oxide: Advances in surface engineering and emerging applications

Abdul Mutalib Md Jani [a,b,*], Dusan Losic [c], Nicolas H. Voelcker [d,*]



Acta Biomaterialia 9 (2013) 9243–9257

Contents lists available at ScienceDirect

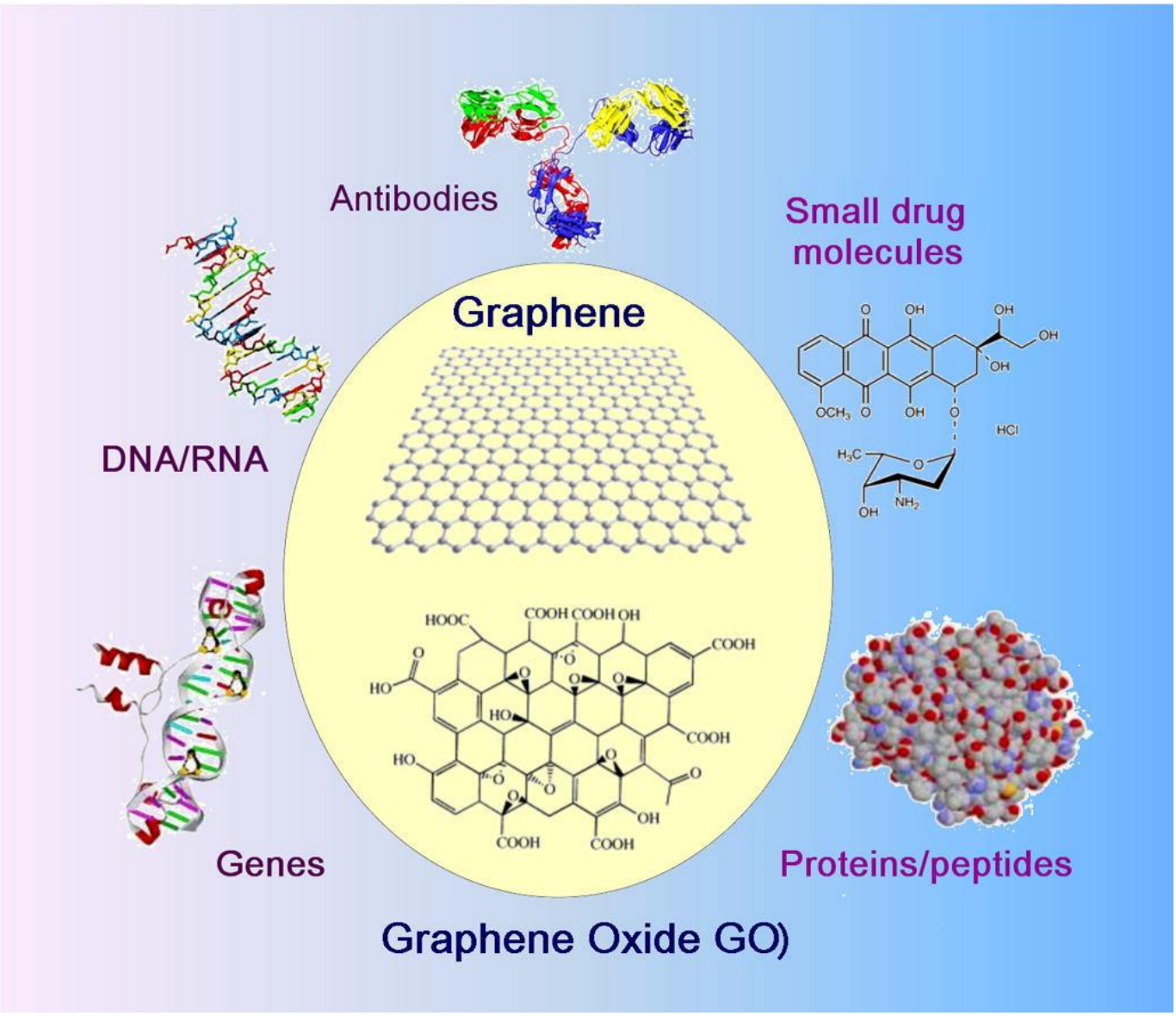
Acta Biomaterialia

journal homepage: www.elsevier.com/locate/actabiomat

Review

Graphene and graphene oxide as new nanocarriers for drug delivery applications

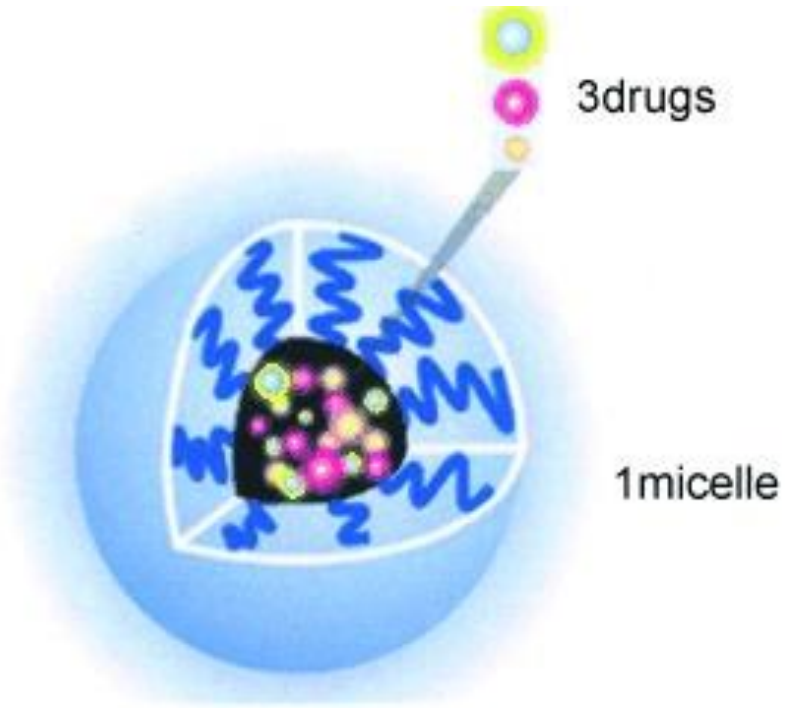
Jingquan Liu [a,*], Liang Cui [a], Dusan Losic [b,*]



CHEMISTRY
A EUROPEAN JOURNAL
ChemPubSoc Europe
DOI: 10.1002/chem.201302097

Polymeric Micelles for Multidrug Delivery and Combination Therapy

Moom Sinn Aw, Mima Kurian, and Dusan Losic*[a]



analytical chemistry

Article

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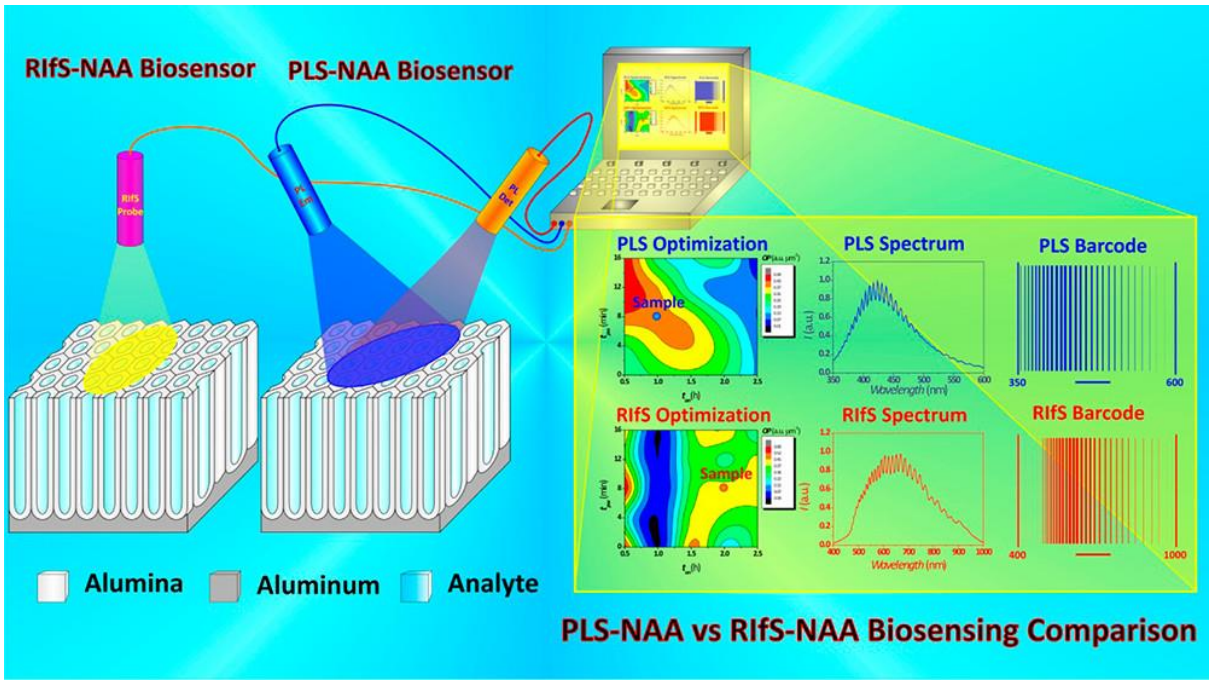
Optically Optimized Photoluminescent and Interferometric Biosensors Based on Nanoporous Anodic Alumina: A Comparison

Abel Santos, Tushar Kumeria, and Dusan Losic*



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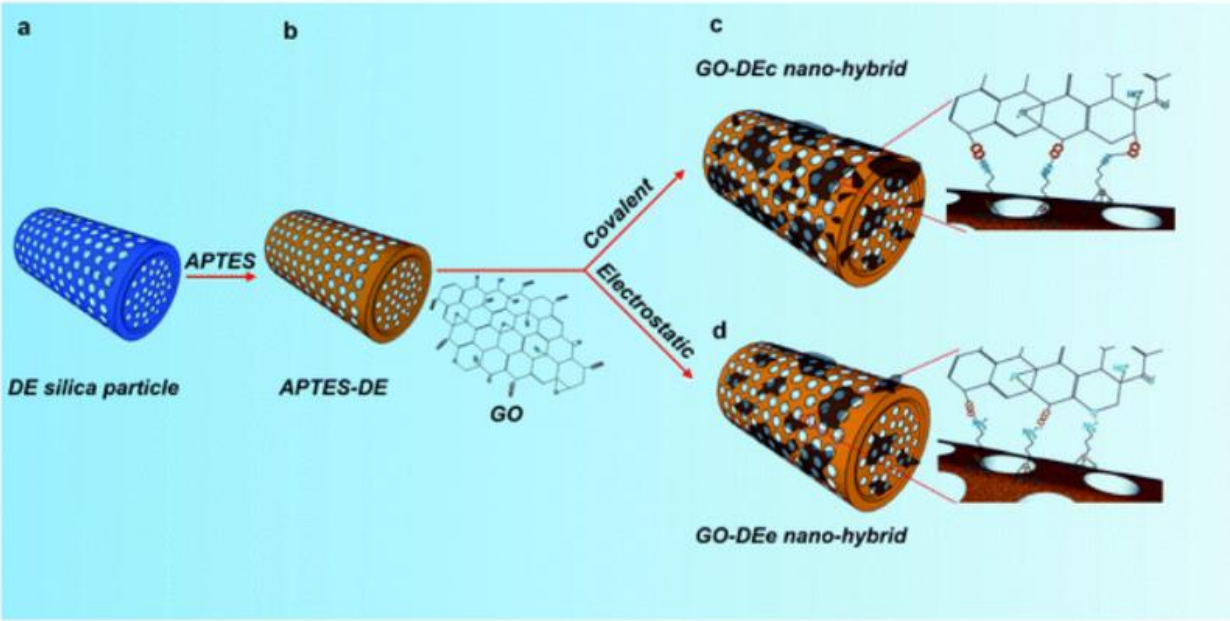
DOI: 10.1039/C3TB21051K (Paper) J. Mater. Chem. B, 2013, 1, 6302-6311

Graphene oxide decorated diatom silica particles as new nano-hybrids: towards smart natural drug microcarriers†

Tushar Kumeria‡[a], Manpreet Bariana‡[ab], Tariq Altalhi[a], Mahaveer Kurkuri[a], Christopher T. Gibson[c], Wenrong Yang[d] and Dusan Losic*[a]



ACS APPLIED MATERIALS & INTERFACES

Research Article

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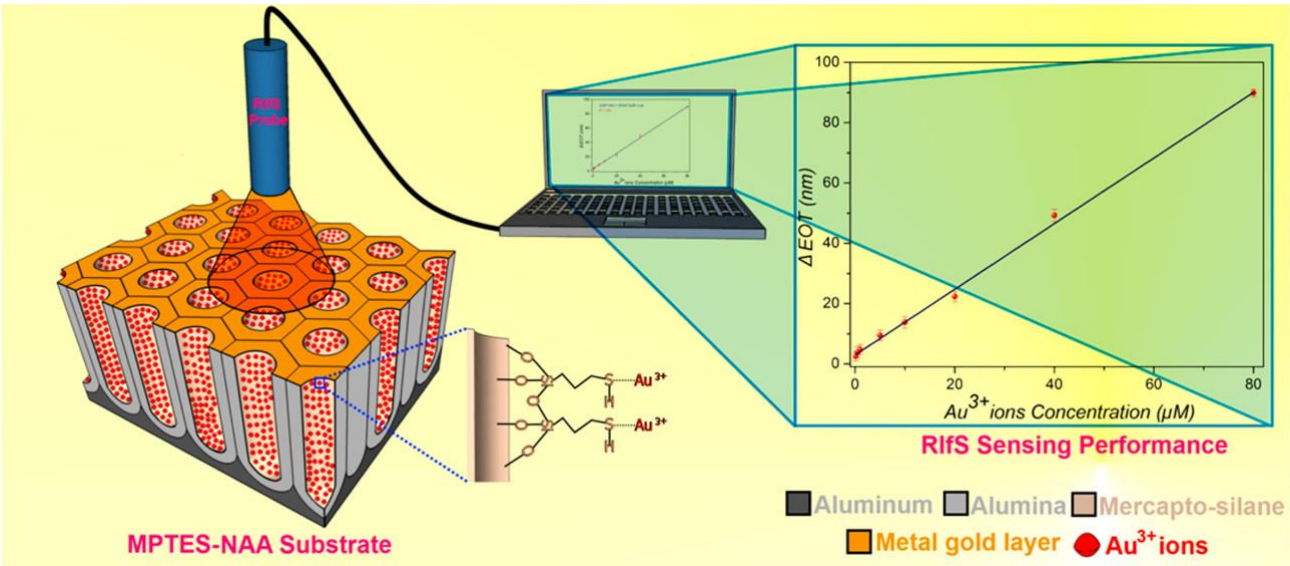
Ultrasensitive Nanoporous Interferometric Sensor for Label-Free Detection of Gold(III) Ions

Tushar Kumeria, Abel Santos, and Dusan Losic*



Journal of Membrane Science 411–412 (2012) 211–218

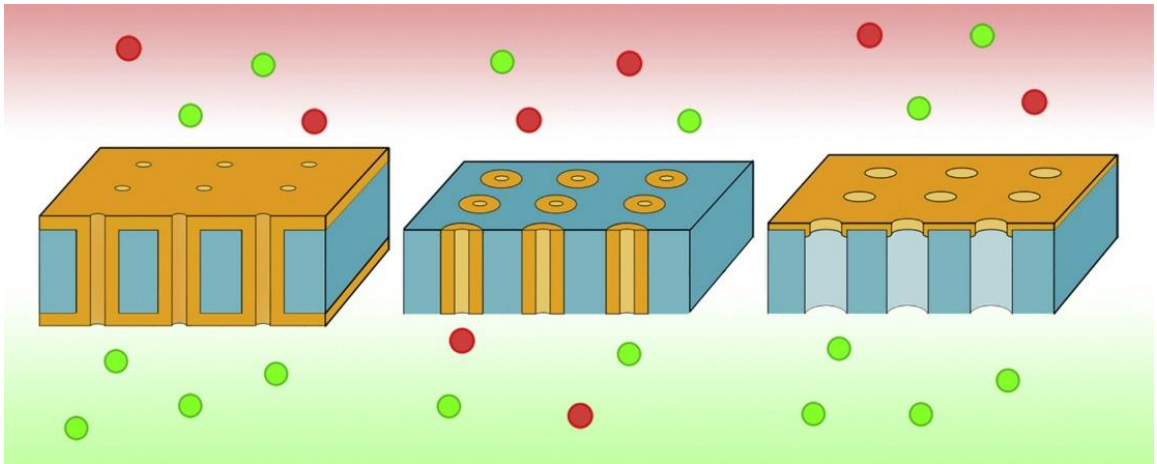
Contents lists available at SciVerse ScienceDirect

Journal of Membrane Science

journal homepage: www.elsevier.com/locate/memsci

The effects of surface functionality positioning on the transport properties of membranes

Leonora Velleman[a,*], Dusan Losic[b], Joseph G. Shapter[a]



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Cite this: *J. Mater. Chem.*, 2012, **22**, 6561

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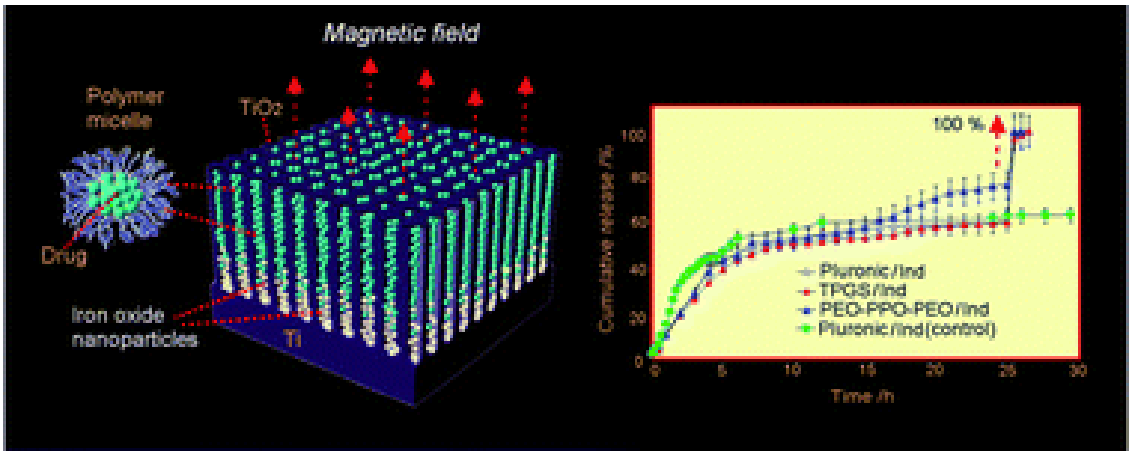
COMMUNICATION

Magnetic-responsive delivery of drug-carriers using titania nanotube arrays†

Moom Sinn Aw,[a] Jonas Addai-Mensah[a] and Dusan Losic*[ab]

Received 24th December 2011, Accepted 15th February 2012
DOI: 10.1039/c2jm16819g



Acta Biomaterialia 8 (2012) 449–456

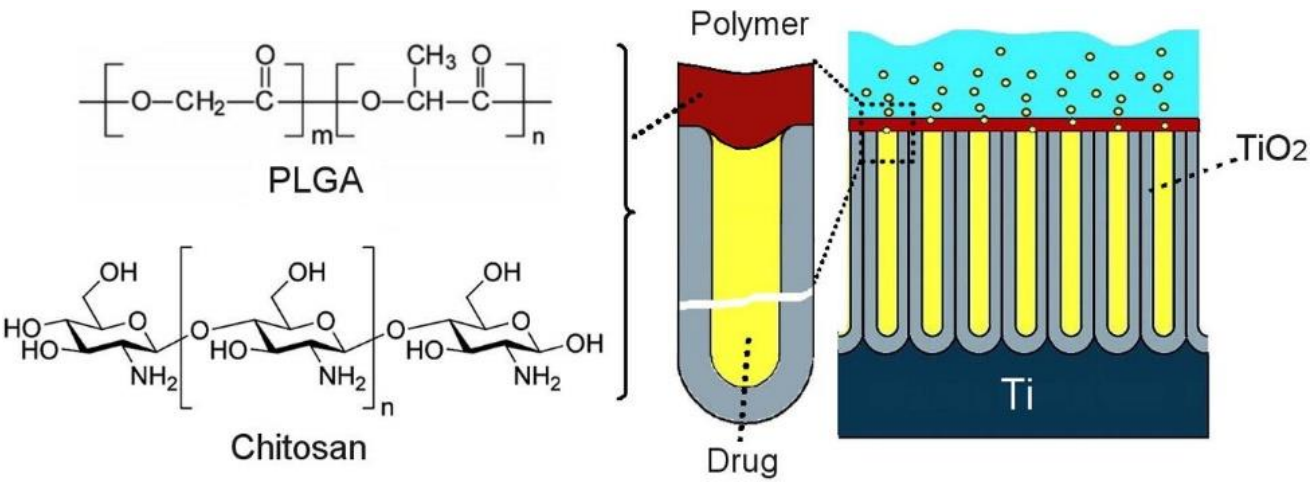
Contents lists available at SciVerse ScienceDirect

Acta Biomaterialia

journal homepage: www.elsevier.com/locate/actabiomat

Biocompatible polymer coating of titania nanotube arrays for improved drug elution and osteoblast adhesion

Karan Gulati [a], Saminathan Ramakrishnan [a], Moom Sinn Aw [a], Gerald J. Atkins [b], David M. Findlay [b], Dusan Losic [a,*]



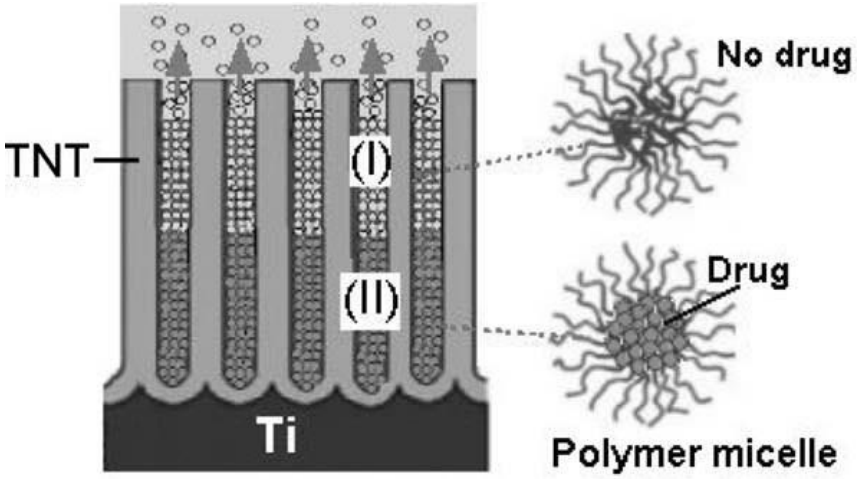
Macromolecular Bioscience

Macromolecular Journals

Communication

Polymer Micelles for Delayed Release of Therapeutics from Drug-Releasing Surfaces with Nanotubular Structures[a]

Moom Sinn Aw, Jonas Addai-Mensah, Dusan Losic*



Microporous and Mesoporous Materials 153 (2012) 131–136

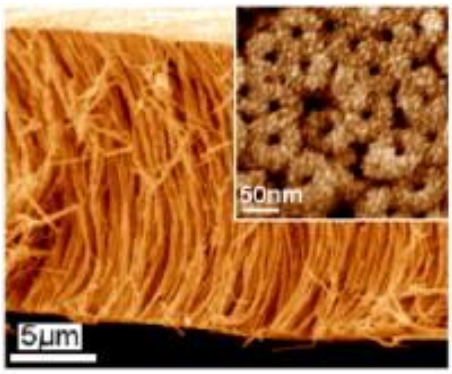
Contents lists available at SciVerse ScienceDirect

Microporous and Mesoporous Materials

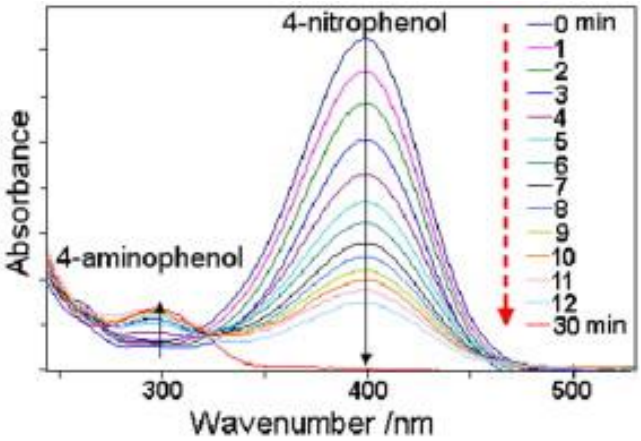
journal homepage: www.elsevier.com/locate/micromeso

Gold nanotube membranes have catalytic properties

Yang Yu [a], Krishna Kant [a,b], Joe G. Shapter [b], Jonas Addai-Mensah [a], Dusan Losic [a,*]



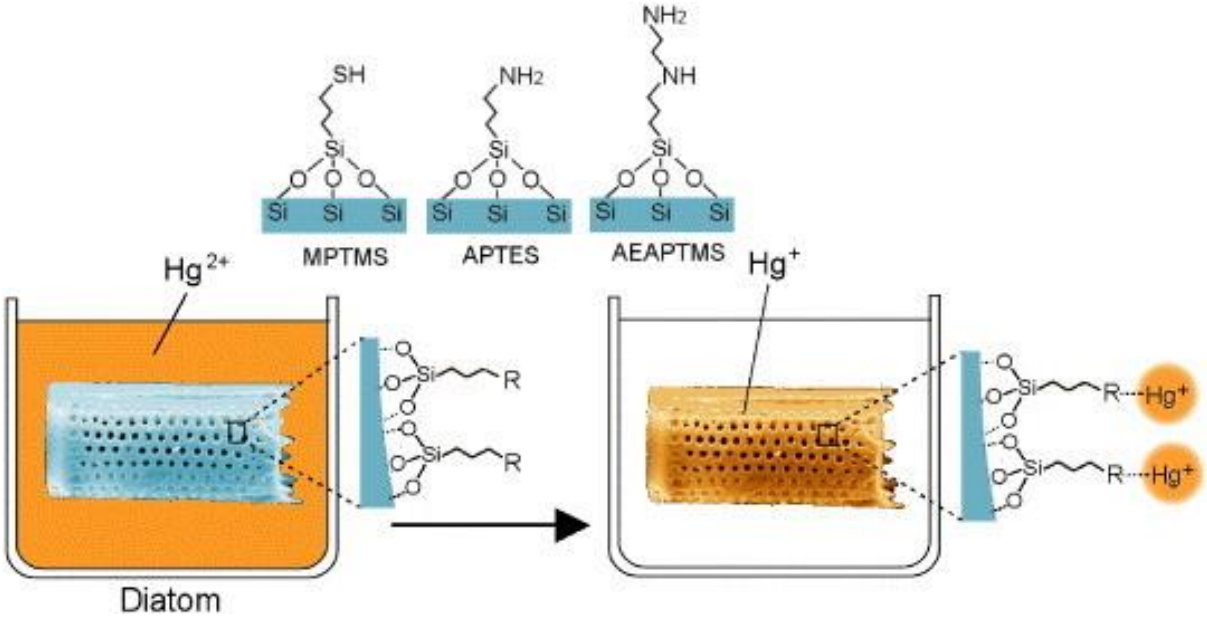
Gold nanotube membrane



IOP Publishing
Science and Technology of Advanced Materials
Sci. Technol. Adv. Mater. 13 (2012) 015008 (11pp)
doi:10.1088/1468-6996/13/1/015008

Functionalized diatom silica microparticles for removal of mercury ions

Yang Yu[1], Jonas Addai-Mensah[1] and Dusan Losic[1,2]



Powder Technology 223 (2012) 52–58

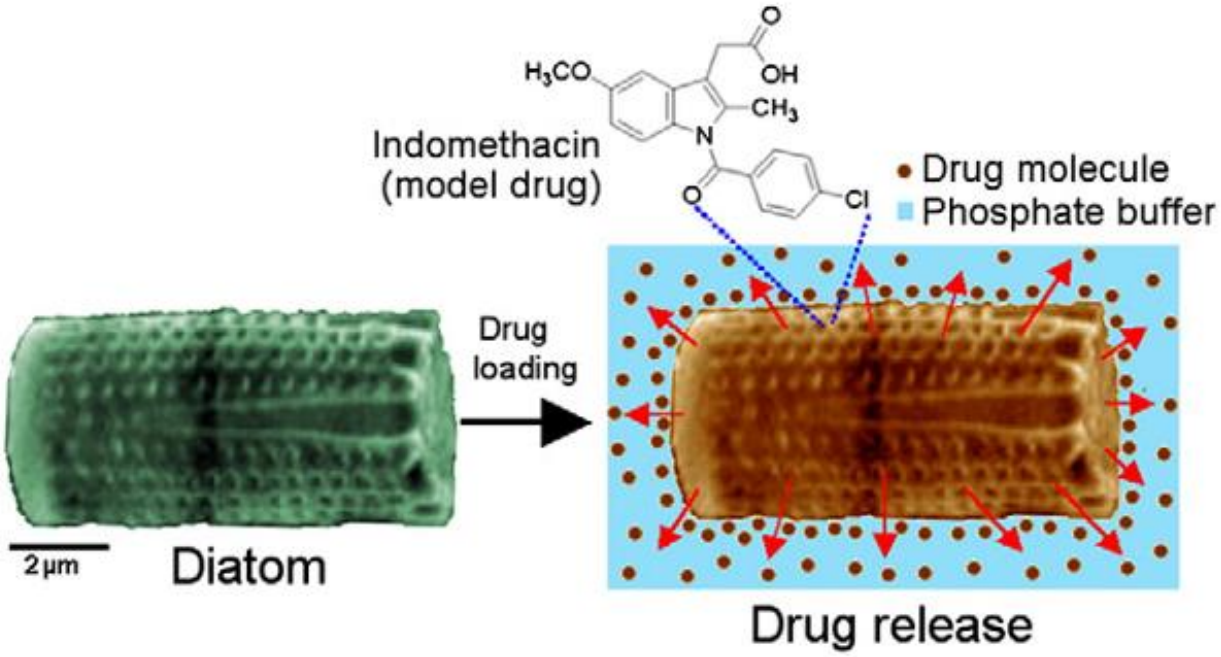
Contents lists available at ScienceDirect

Powder Technology

journal homepage: www.elsevier.com/locate/powtec

Porous silica microshells from diatoms as biocarrier for drug delivery applications

Moom Sinn Aw, Spomenka Simovic, Yang Yu, Jonas Addai-Mensah, Dusan Losic *



Membranes **2011**, *1*, 37-47; doi:10.3390/membranes1010037

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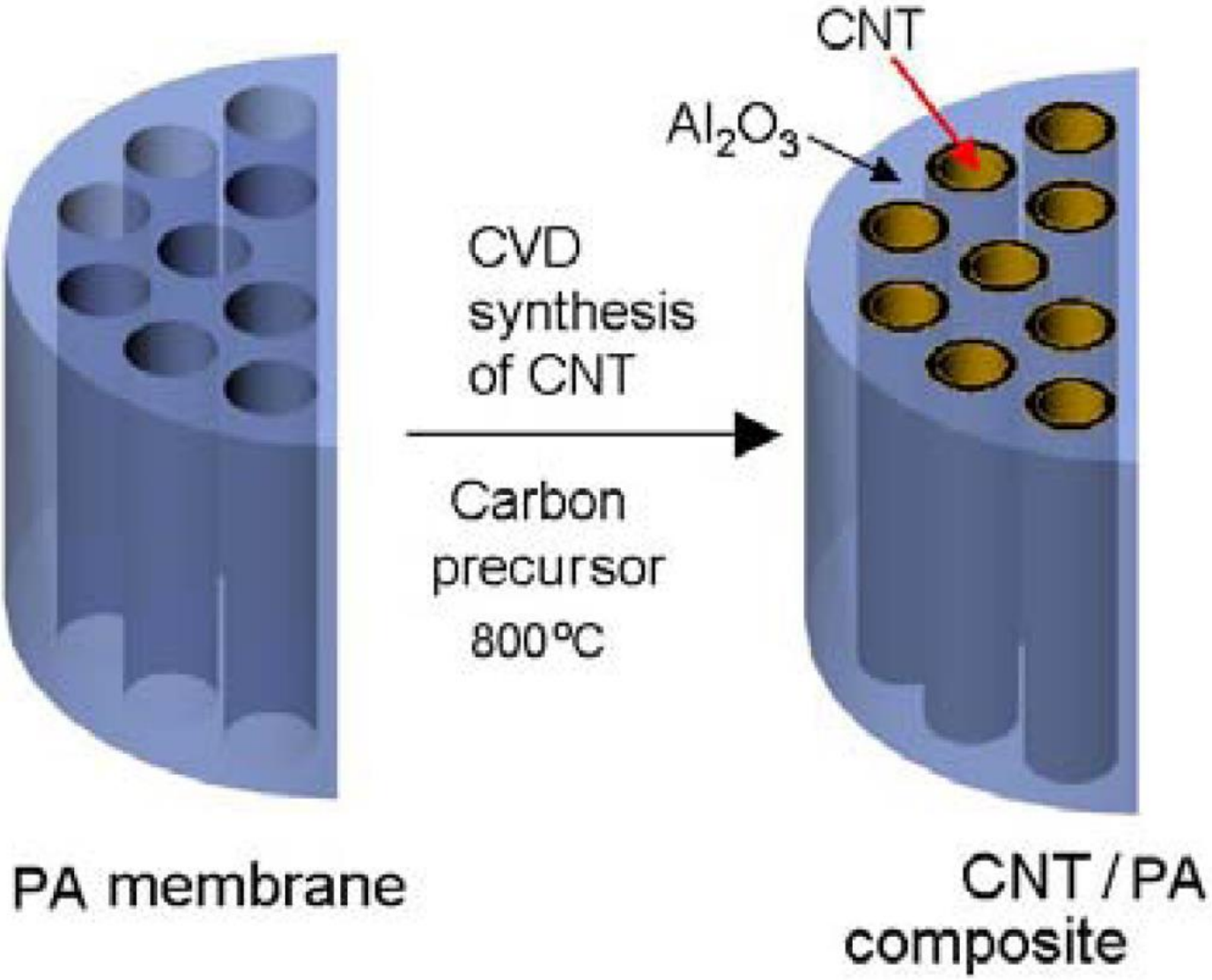
ISSN 2077-0375

www.mdpi.com/journal/membranes/

Article

Synthesis of Carbon Nanotube (CNT) Composite Membranes

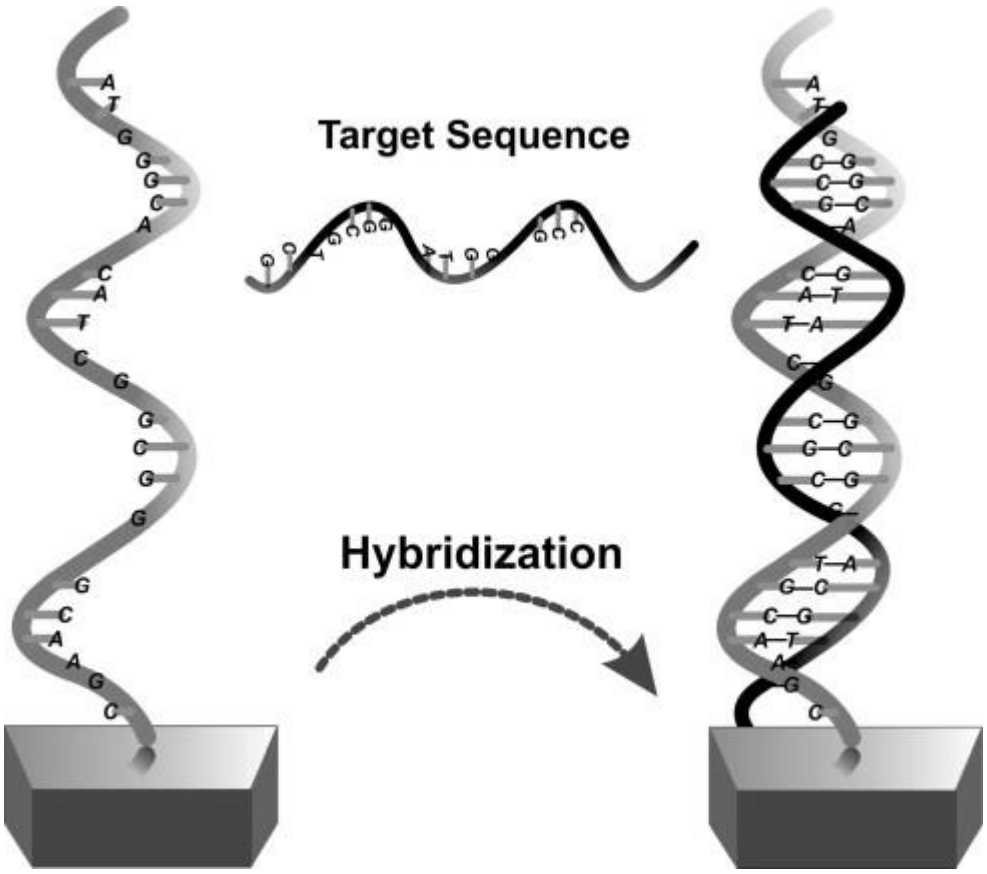
Tariq Altalhi [1], Milena Ginic-Markovic [1,*], Ninghui Han [2], Stephen Clarke [1] and Dusan Losic [2]



Trends in Analytical Chemistry, Vol. 30, No. 3, 2011 Trends

Optical and electrochemical DNA nanobiosensors

Jafar Ezzati Nazhad Dolatabadi, Omid Mashinchian, Baharak Ayoubi, Ali Akbar Jamali, Ahmad Mobed, Dusan Losic, Yadollah Omidi, Miguel de la Guardia



Kumeria et al. Nanoscale Research Letters 2011, 6:634
http://www.nanoscalereslett.com/content/6/1/634

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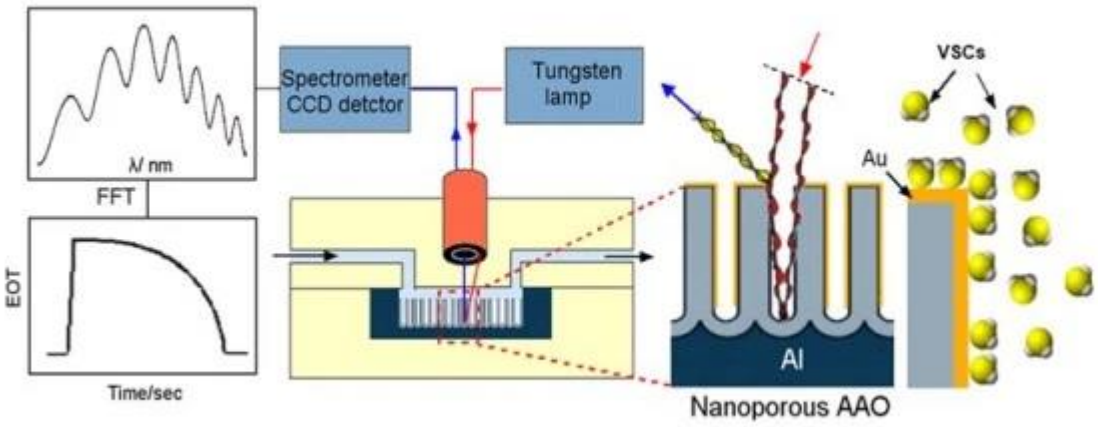
A nanoporous interferometric micro-sensor for biomedical detection of volatile sulphur compounds

Tushar Kumeria, Luke Parkinson and Dusan Losic*



Gulati *et al. Nanoscale Research Letters* 2011, **6**:571
http://www.nanoscalereslett.com/content/6/1/571

Nanoscale Research Letters
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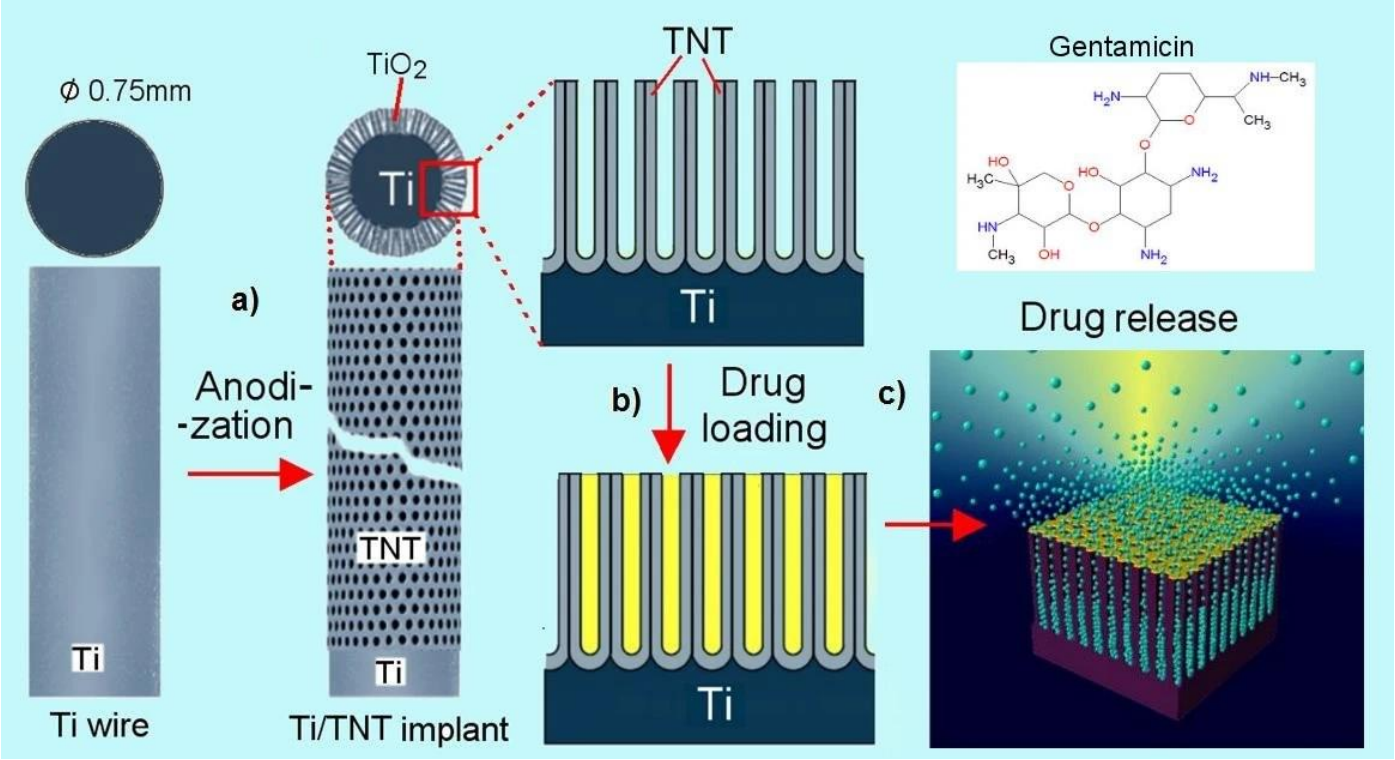
Drug-eluting Ti wires with titania nanotube arrays for bone fixation and reduced bone infection

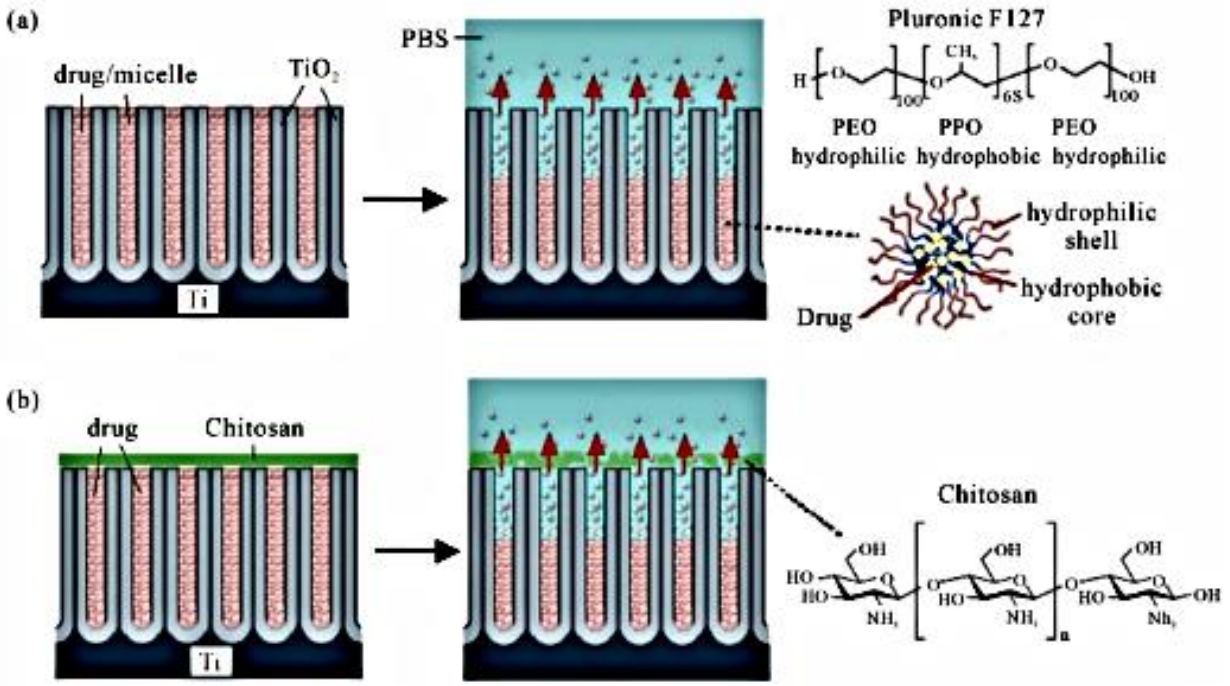
Karan Gulati, Moom Sinn Aw and Dusan Losic*



Journal of Biomaterials and Nanobiotechnology, 2011, 2, 477-484
doi:10.4236/jbnb.2011.225058 Published Online December 2011 (http://www.scirp.org/journal/jbnb)

Controlling Drug Release from Titania Nanotube Arrays Using Polymer Nanocarriers and Biopolymer Coating

Moom Sinn Aw, Karan Gulati, Dusan Losic*



Phys. Status Solidi RRL **5**, No. 10–11, 406–408 (2011) / **DOI** 10.1002/pssr.201105425

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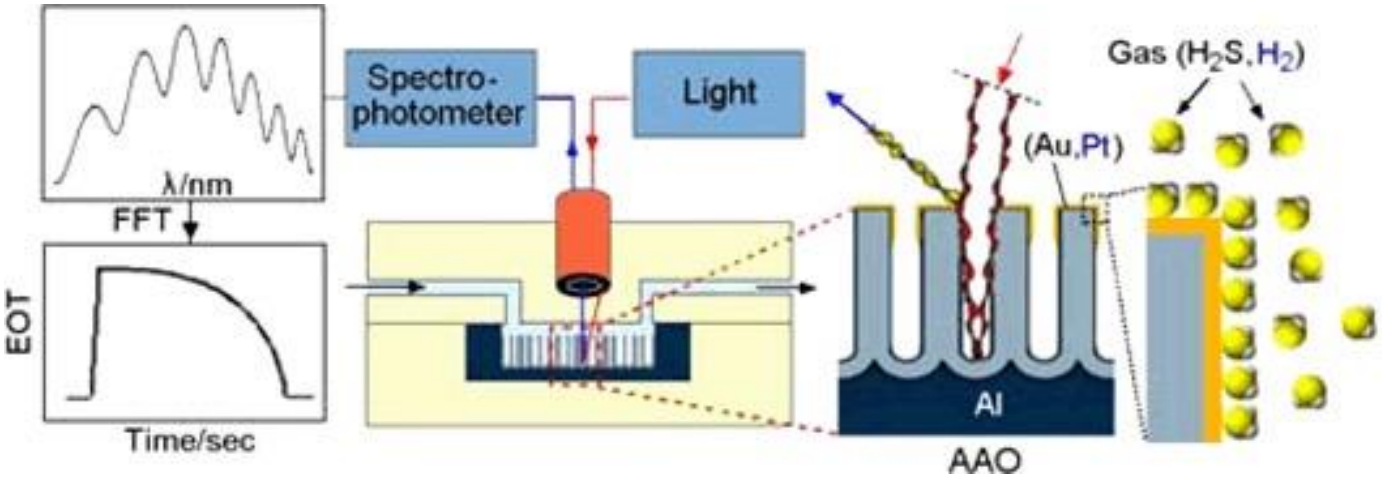
Reflective interferometric gas sensing using nanoporous anodic aluminium oxide (AAO)

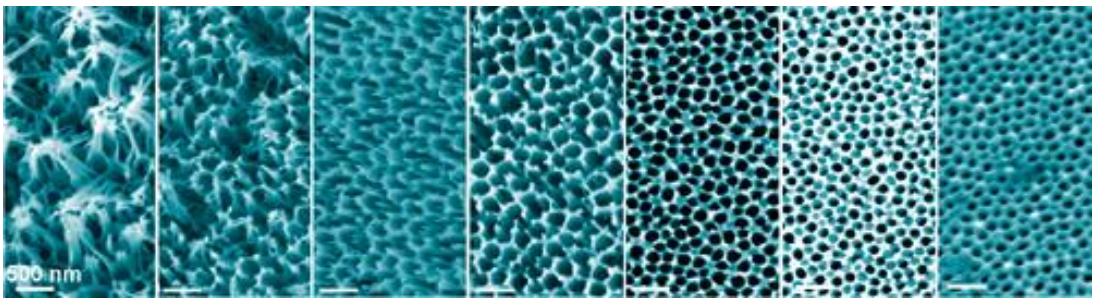
Tushar Kumeria and Dusan Losic*



Nanopore Gradients on Porous Aluminum Oxide Generated by Nonuniform Anodization of Aluminum

ARTICLE

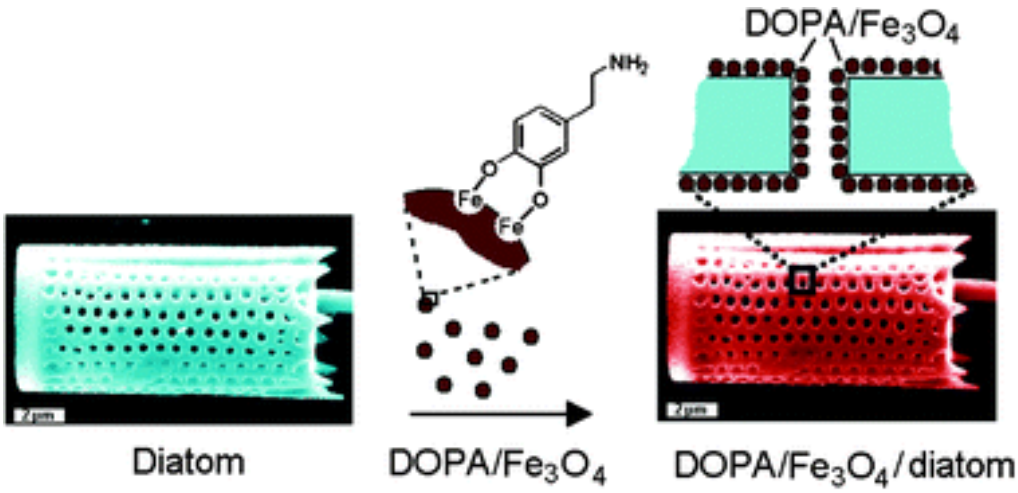
Krishna Kant,† Suet P. Low,† Asif Marshal,§ Joseph G. Shapter,§ and Dusan Losic*,†



COMMUNICATION www.rsc.org/chemcomm | ChemComm

Surface functionalisation of diatoms with dopamine modified iron-oxide nanoparticles: toward magnetically guided drug microcarriers with biologically derived morphologies†

Dusan Losic,* Yang Yu, Moom Sinn Aw, Spomenka Simovic, Benjamin Thierry and Jonas Addai-Mensah



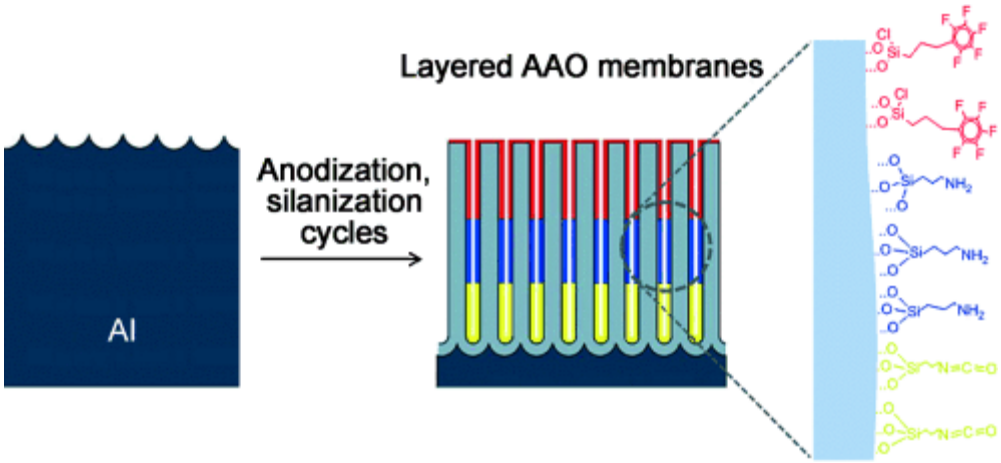
Angewandte International Edition Chemie

Porous Alumina Membranes

DOI: 10.1002/anie.201002504

Dressing in Layers: Layering Surface Functionalities in Nanoporous Aluminum Oxide Membranes**

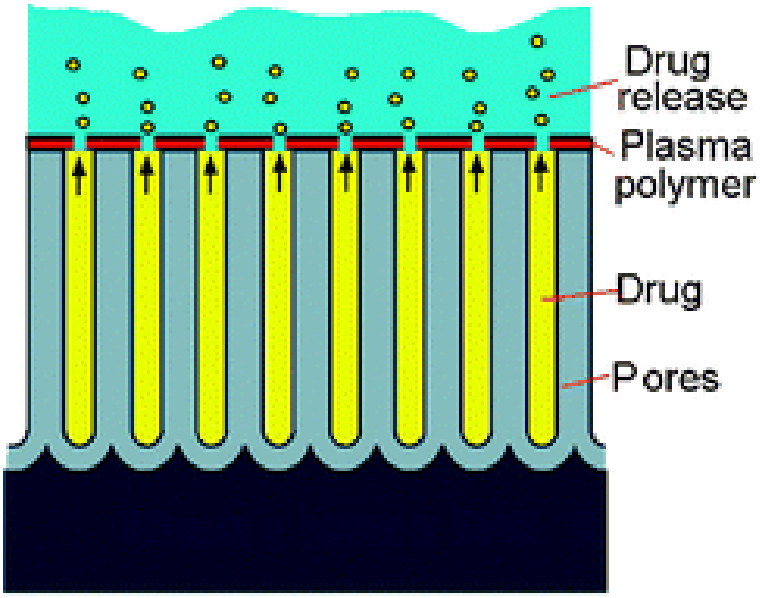
Abdul Mutalib Md Jani, Ivan M. Kempson, Dusan Losic, and Nicolas H. Voelcker**



COMMUNICATION www.rsc.org/chemcomm | ChemComm

Controlled drug release from porous materials by plasma polymer deposition†

Spomenka Simovic,[a] Dusan Losic[a] and Krasimir Vasilev*[b]



Electrochimica Acta 55 (2010) 1829–1835

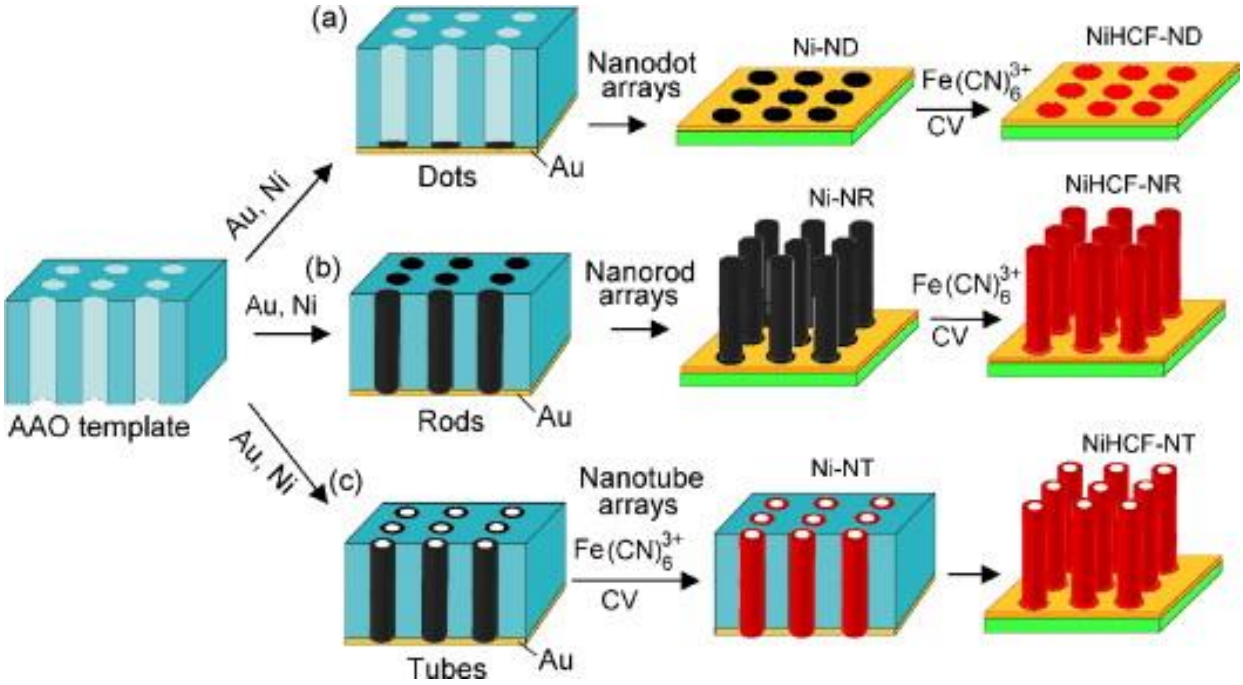
Contents lists available at ScienceDirect

Electrochimica Acta

journal homepage: www.elsevier.com/locate/electacta

Electrochemical synthesis of nickel hexacyanoferrate nanoarrays with dots, rods and nanotubes morphology using a porous alumina template

Reza Emamali Sabzi[a], Krishna Kant[b], Dusan Losic[b,*]



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DOI: 10.1039/B901745C (Communication) *Chem. Commun.*, 2009, 3062-3064

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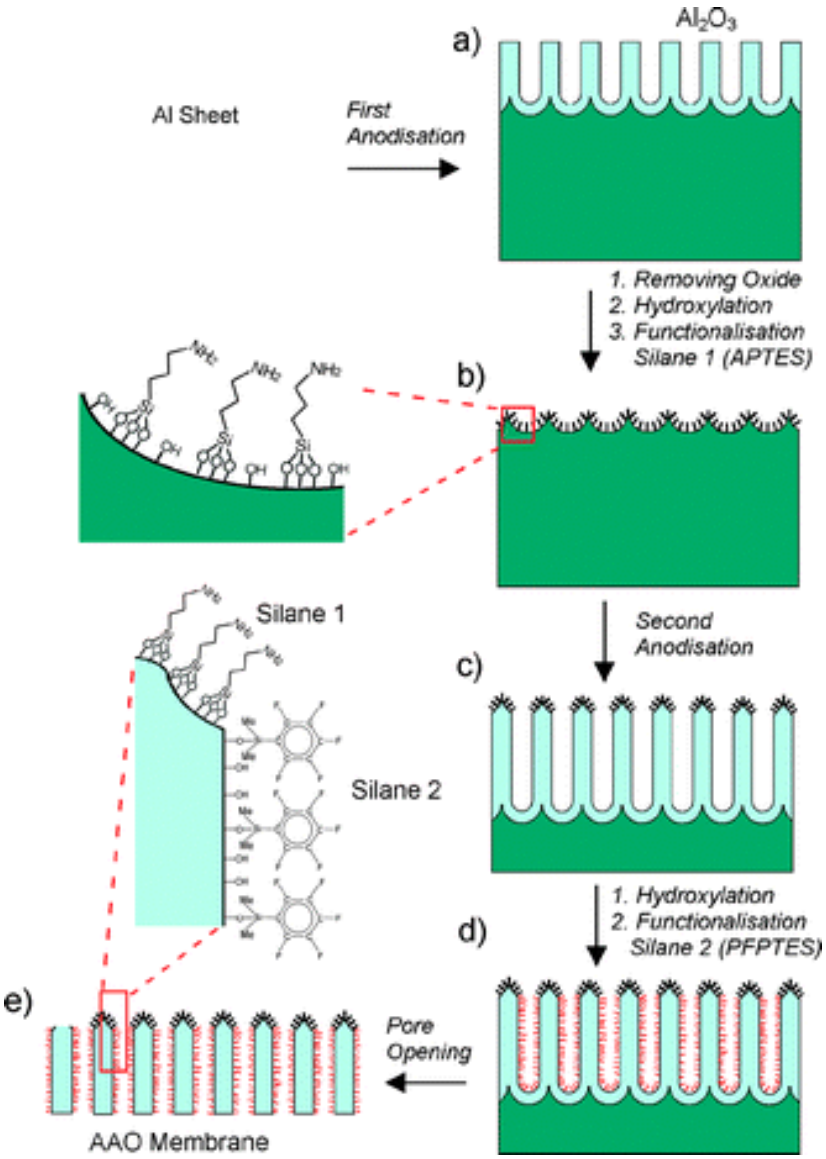
Nanoporous anodic aluminium oxide membranes with layered surface chemistry†

Abdul Mutalib Md Jani [a], Emily J. Anglin [a], Steven J. P. McInnes [a], Dusan Losic [b], Joe G. Shapter [a] and Nicolas H. Voelcker *[a]



Langmuir Letter
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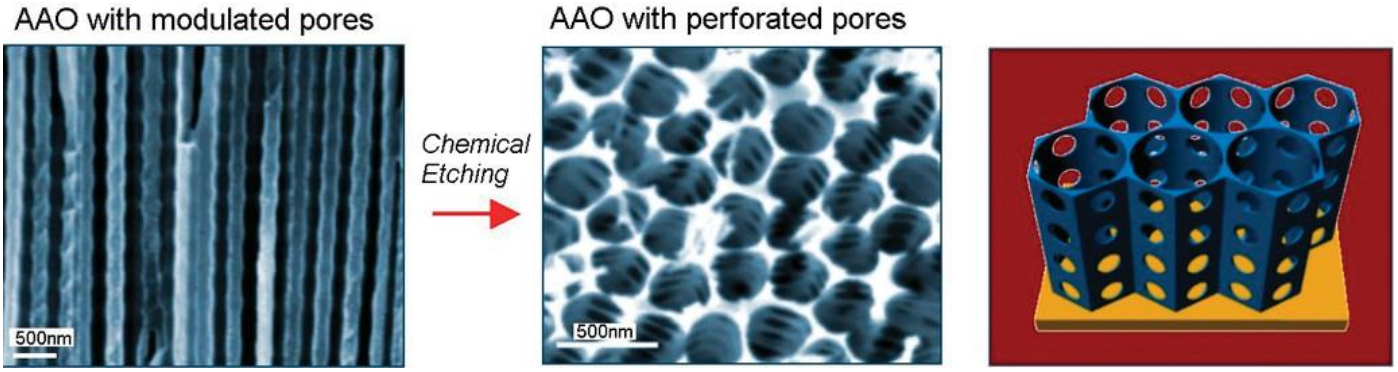
Preparation of Porous Anodic Alumina with Periodically Perforated Pores

Dusan Losic* and Dusan Losic, Jr.



Microporous and Mesoporous Materials 126 (2009) 87–94

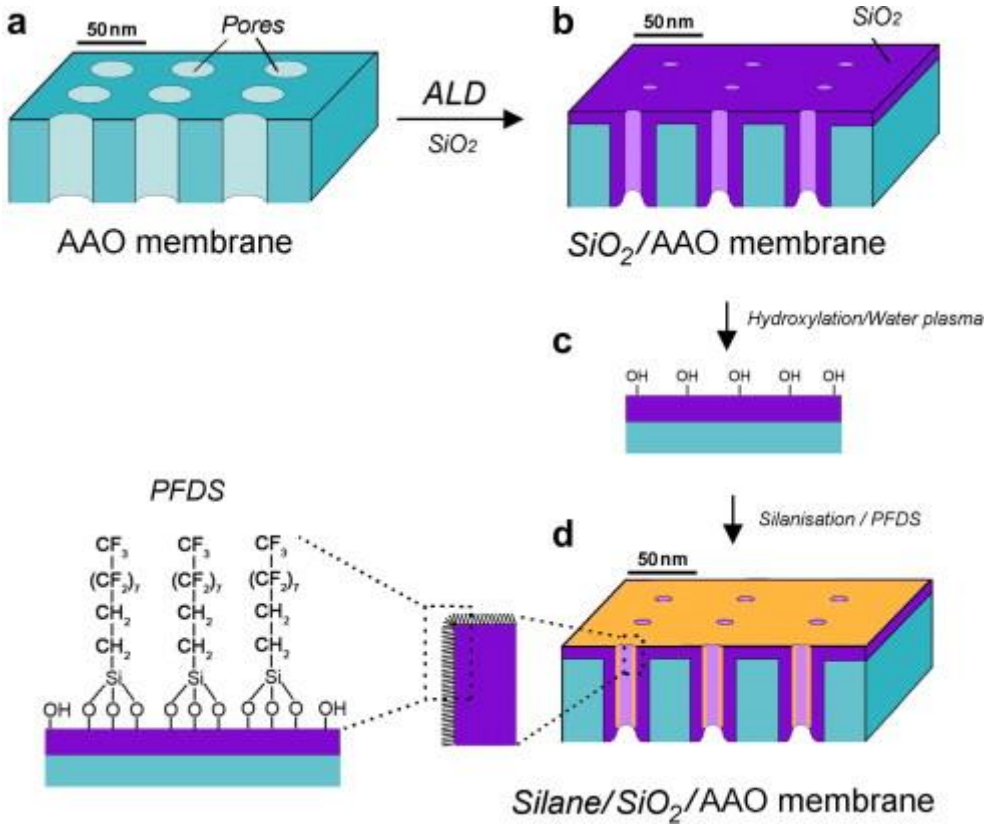
Contents lists available at ScienceDirect

Microporous and Mesoporous Materials

journal homepage: www.elsevier.com/locate/micromeso

Structural and chemical modification of porous alumina membranes

Leonora Velleman [a], Gerry Triani [b], Peter J. Evans [b], Joe G. Shapter [a], Dusan Losic [c,*]



Phys. Status Solidi RRL **3**, No. 5, 139–141 (2009) / **DOI** 10.1002/pssr.200903087

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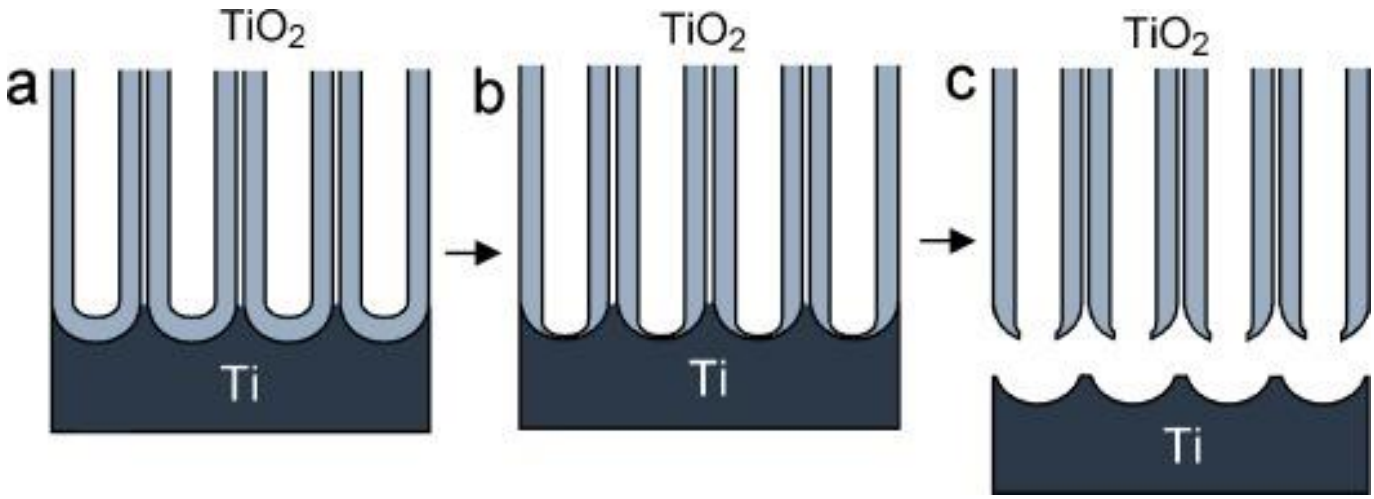
A simple approach for synthesis of TiO_2 nanotubes with through-hole morphology

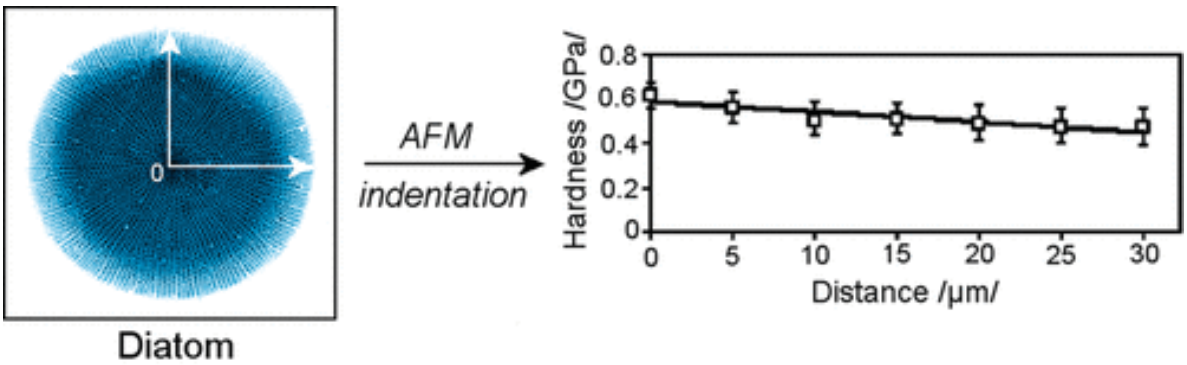
Krishna Kant and Dusan Losic*



5014 *Langmuir* **2007,** *23,* 5014−5021

AFM Nanoindentations of Diatom Biosilica Surfaces

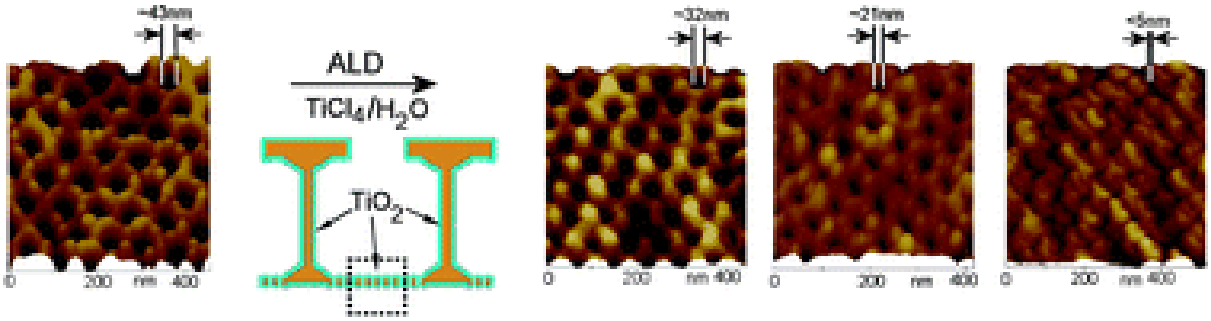
Dusan. Losic,*,† Ken Short,§ James G. Mitchell,‡ Ratnesh Lal,|| and Nicolas H. Voelcker*,†



PAPER www.rsc.org/materials | Journal of Materials Chemistry

Controlled pore structure modification of diatoms by atomic layer deposition of TiO_2

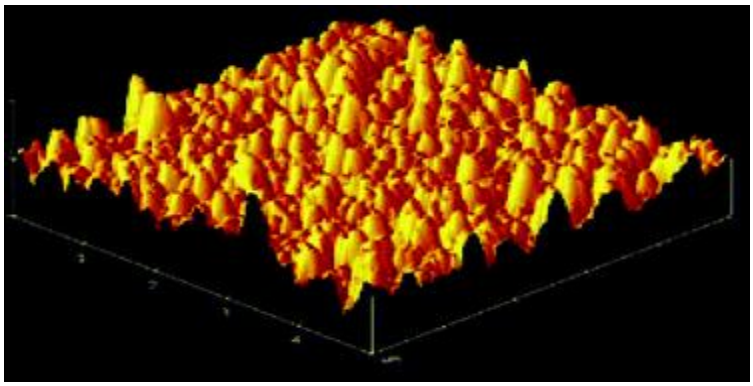
Dusan Losic,*[ab] Gerry Triani,[c] Peter J. Evans,[c] Armand Atanacio,[c] James G. Mitchell[b] and Nicolas H. Voelcker[a]



PAPER www.rsc.org/softmatter | Soft Matter

Preparation and characterisation of an aligned carbon nanotube array on the silicon (100) surface

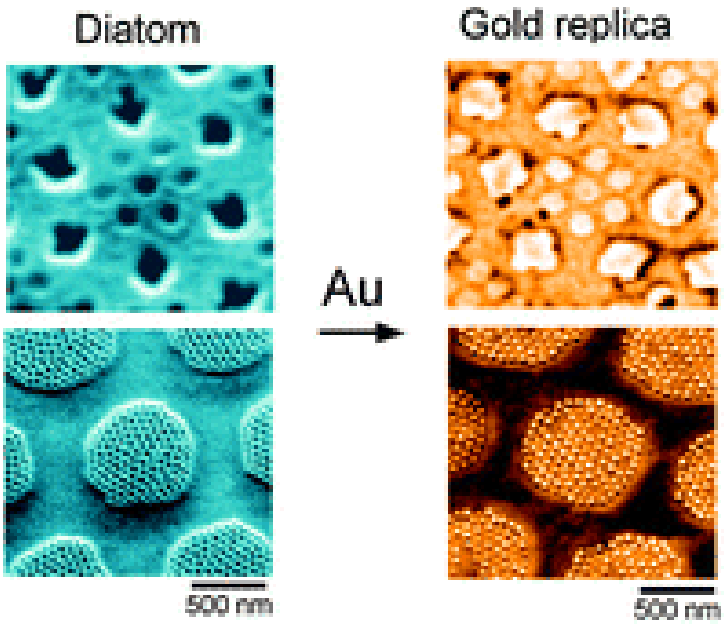
Jingxian Yu,[a] Dusan Losic,[a] Matthew Marshall,[a] Till Böcking,[bc] John Justin Gooding[b] and Joseph George Shapter*[a]



PAPER www.rsc.org/njc | New Journal of Chemistry

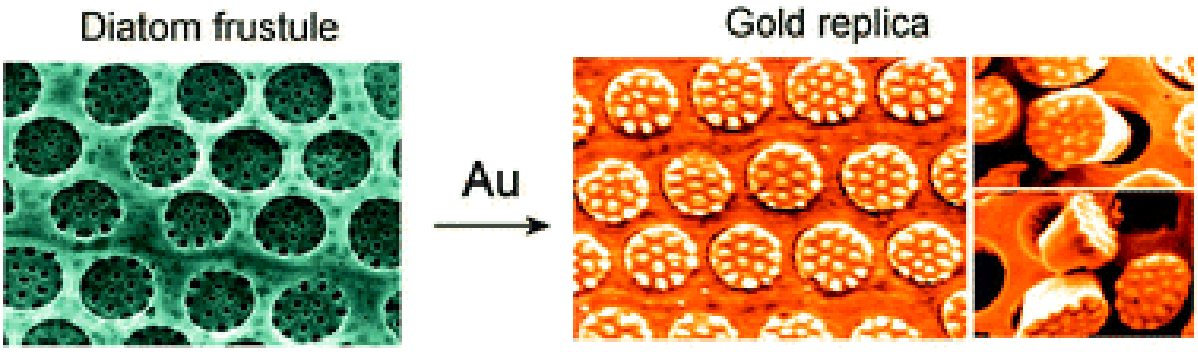
Fabrication of gold nanostructures by templating from porous diatom frustules

Dusan Losic,*[ab] James G. Mitchell[b] and Nicolas H. Voelcker[a]



Complex gold nanostructures derived by templating from diatom frustules

Dusan Losic,*[ab] James G. Mitchell[b] and Nicolas H. Voelcker[a]



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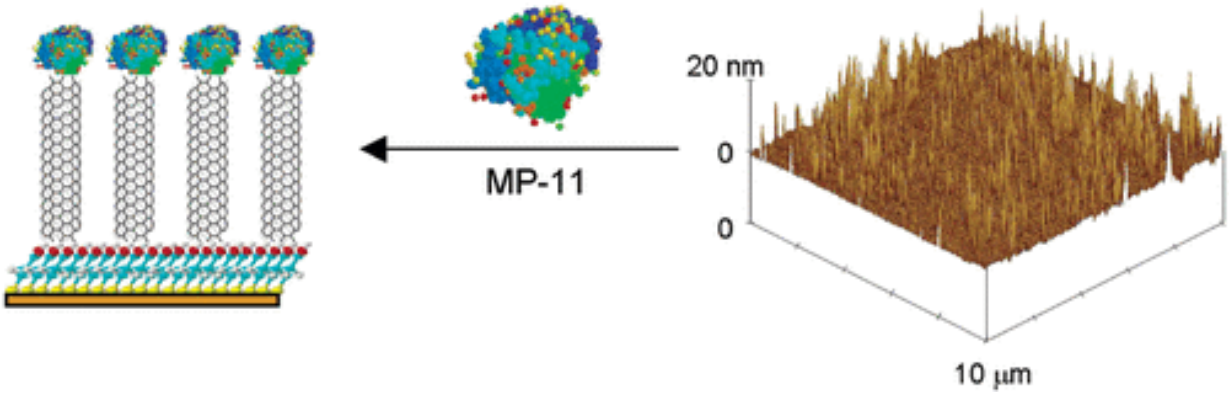
Published on Web 07/01/2003

Protein Electrochemistry Using Aligned Carbon Nanotube Arrays

J. Justin Gooding,*,† Rahmat Wibowo,† Jingquan Liu,† Wenrong Yang,† Dusan Losic,‡ Shannon Orbons,† Freya J. Mearns,† Joe G. Shapter,‡ and D. Brynn Hibbert†



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Influence of Surface Topography on Alkanethiol SAMs Assembled from Solution and by Microcontact Printing

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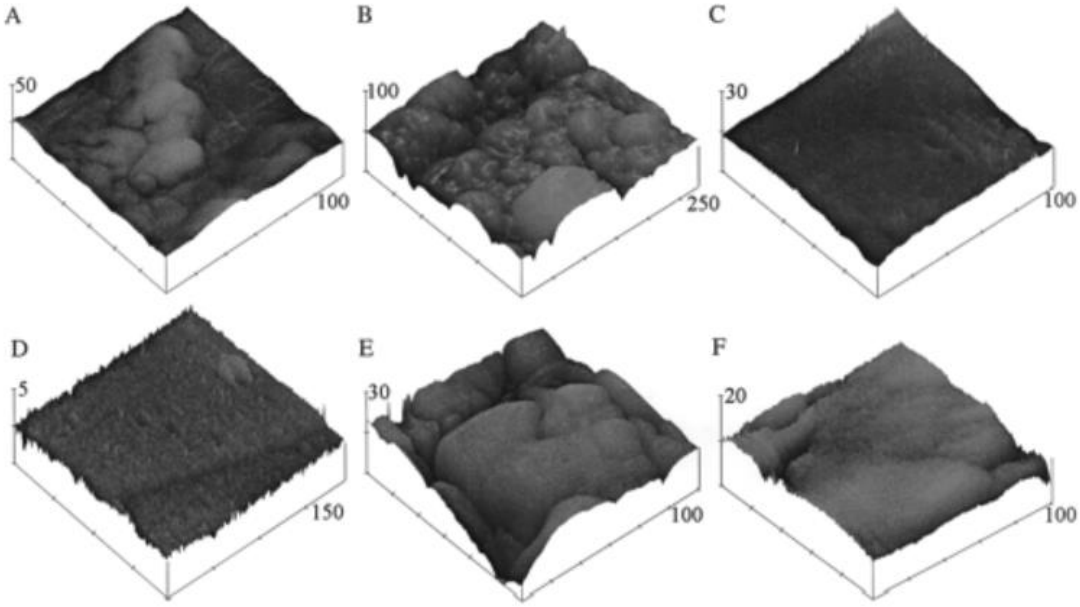

Communication

A tungsten oxide coated wire electrode used as a pH sensor in flow injection potentiometry

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