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**CRITERION III- RESEARCH, INNOVATIONS AND EXTENSION**
**3.4.5: Bibliometrics of the publications during the last five years based on average Citation index in Scopus/ Web of Science**

S.NO	Authors	Title	Year	Source title	Cited by	DOI
<b>Scopus</b>						
1	Priyadharshini N., Selvanathan N., Hemalatha B., Sureshkumar C.	A novel hybrid Extreme Learning Machine and Teaching–Learning–Based Optimization algorithm for skin cancer detection	2023	Healthcare Analytics	3	10.1016/j.health.2023.100161
2	Parasuraman B., Kandasamy B., Murugan I., Alsalhi M.S., Asemi N., Thangavelu P., Perumal S.	Designing the heterostructured FeWO <sub>4</sub> /FeS <sub>2</sub> nanocomposites for an enhanced photocatalytic organic dye degradation	2023	Chemosphere	10	10.1016/j.chemosphere.2023.138979
3	Aruljothi C., Balaji P., Vaishnavi E., Pazhanivel T., Vasuki T.	Magnetic recyclable CuFe <sub>2</sub> O <sub>4</sub> /rGO nanocomposite for the degradation of tetracycline under sunlight irradiation	2023	Journal of Chemical Technology and Biotechnology	7	10.1002/jctb.7408
4	Umadevi S., Prabhakar P., Han Y.-K., Ranjith K.S.	Nanoscale-based ZnS-GdS shell layer decorated hierarchical ZnO nanorod array photoanode with enhanced photo-electrochemical activity under visible light	2023	Journal of Alloys and Compounds	1	10.1016/j.jallcom.2023.168871

**Dr. N. LAKSHMI**

Principal i/c

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5	Meenambigai K., Kokila R., Chandhirasekar K., Thendralmanikandan A., Kaliannan D., Ibrahim K.S., Kumar S., Liu W., Balasubramanian B., Nareshkumar A.	Green Synthesis of Selenium Nanoparticles Mediated by Nilgirianthus ciliates Leaf Extracts for Antimicrobial Activity on Foodborne Pathogenic Microbes and Pesticidal Activity Against Aedes aegypti with Molecular Docking	2022	Biological Trace Element Research	13	10.1007/s12011-021-02868-y
6	Abirami D., Gomathi R.	Target and candidate agents for diabetes treatment in the framework of the food nexus	2022	Energy Nexus	4	10.1016/j.nexus.2022.100041
7	Palani R., Anitha V., Karuppiyah C., Rajalakshmi S., Li Y.-J.J., Hung T.-F., Yang C.-C.	Imidazolatic-Framework Bimetal Electrocatalysts with a Mixed-Valence Surface Anchored on an rGO Matrix for Oxygen Reduction, Water Splitting, and Dye Degradation	2021	ACS Omega	8	10.1021/acsomega.1c01870
8	Babu E., Bhuvanewari J., Rajakumar K., Sathish V., Thanasekaran P.	Non-conventional photoactive transition metal complexes that mediated sensing and inhibition of amyloidogenic aggregates	2021	Coordination Chemistry Reviews	10	10.1016/j.ccr.2020.213612
9	Balakrishnan K., Murugesan N.	Synthesis and characterization of SnO <sub>2</sub> nanoparticles by co-precipitation method	2021	International Journal of Nano Dimension	7	10.22034/IJND.2021.677125


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10	Padmavathi P., Nithyakala R.	A note on nano generalized pre C-closed sets	2020	International Journal of Advanced Science and Technology	1	
11	Nandhakumar E., Priya P., Selvakumar P., Vaishnavi E., Sasikumar A., Senthilkumar N.	One step hydrothermal green approach of CuO/Ag nanocomposites: Analysis of structural, biological activities	2019	Materials Research Express	14	10.1088/2053-1591/ab2eb9
12	Babu E., Bhuvanewari J., Muthu Mareeswaran P., Thanasekaran P., Lee H.-M., Rajagopal S.	Transition metal complexes based aptamers as optical diagnostic tools for disease proteins and biomolecules	2019	Coordination Chemistry Reviews	23	10.1016/j.ccr.2018.09.010
13	Shobana S., Subramanian T.K.G.G., Radhika N., Prashanth S., Sundareswaran C.	Secured energy aware cloudlet provisioning in mobile cloud environment	2019	Journal of Advanced Research in Dynamical and Control Systems	1	
14	Vijayaraghavan R., Ellappan V., Dharmar P., Lakshmanan U.	Preferential adsorption of uranium by functional groups of the marine unicellular cyanobacterium <i>Synechococcus elongatus</i> BDU130911	2018	3 Biotech	12	10.1007/s13205-018-1167-5
15	Malarvizhi M., Mallika J.	Efficacy of corrosion inhibitive properties of gum exudates of <i>azadirachta indica</i> on carbon steel in 1N hydrochloric acid	2018	Oriental Journal of Chemistry	3	10.13005/ojc/340534

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16	Manickam M., Sivakumar D., Jaganathan M.	Synergistic influence of halide ions on corrosion inhibition performance of gum exudates of azadirachta indica on carbon steel in sulphuric acid medium	2018	Asian Journal of Chemistry	1	10.14233/ajchem.2018.21323
17	Dr. S.Shobana, N.Radhika	Efficient cloudlet provisioning using bio-inspired hybrid algorithm in mobile cloud computing	2018	Journal of Advanced Research in Dynamical and Control Systems	3	1943-023X
<b>WoS</b>						
1	Babu, Eththilu; Bhuvanewari, Jayaraman; Mareeswaran, Palpandiyan Muthu; Thanasekaran, Pounraj; Lee, Hsien-Ming; Rajagopal, Seenivasan	Transition metal complexes based aptamers as optical diagnostic tools for disease proteins and biomolecules	2019	Coordination Chemistry Reviews	22	<a href="https://doi.org/10.1016/j.ccr.2018.09.010">https://doi.org/10.1016/j.ccr.2018.09.010</a>
2	Nandhakumari, E.; Priya, P.; Selvakumar, P.; Vaishnavi, E.; Sasikumar, A.; Senthilkumar, N.	One step hydrothermal green approach of CuO/Ag nanocomposites: analysis of structural, biological activities	2019	Materials Research Express	15	10.1088/2053-1591/ab2eb9


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3	Meenambigai, Krishnan; Kokila, Ranganathan; Chandhirasekar, Kandasamy; Thendralmanikandan, Ayyavu; Kaliannan, Durairaj; Ibrahim, Kalibulla Syed; Kumar, Shobana; Liu, Wenchao; Balasubramanian, Balamuralikrishnan; Nareshkumar, Arjunan	Green Synthesis of Selenium Nanoparticles Mediated by <i>Nilgirianthus ciliates</i> Leaf Extracts for Antimicrobial Activity on Foodborne Pathogenic Microbes and Pesticidal Activity Against <i>Aedes aegypti</i> with Molecular Docking	2022	Biological Trace Element Research	11	10.1007/s12011-021-02868-y
4	Babu, Eththilu; Bhuvaneswari, Jayaraman; Rajakumar, Kanthapazham; Sathish, Veerasamy; Thanasekaran, Pounraj	Non-conventional photoactive transition metal complexes that mediated sensing and inhibition of amyloidogenic aggregates	2021	Coordination Chemistry Reviews	9	10.1016/j.ccr.2020.213612
5	Aruljothi, Chandrsekaran; Balaji, Parasuraman; Vaishnavi, Ellappan; Pazhanivel, Thangavelu; Vasuki, Thandavan	Magnetic recyclable CuFe <sub>2</sub> O <sub>4</sub> /rGO nanocomposite for the degradation of tetracycline under sunlight irradiation	2023	Journal of Chemical Technology and Biotechnology	4	10.1002/jctb.7408



# Document details - A novel hybrid Extreme Learning Machine and Teaching–Learning-Based Optimization algorithm for skin cancer detection

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Healthcare Analytics
Volume 3, November 2023, Article number 100161

Cited by 5 documents

## A novel hybrid Extreme Learning Machine and Teaching–Learning-Based Optimization algorithm for skin cancer detection(Article)(Open Access)

Priyadharshini, N., Selvanathan, N., Hemalatha, B., Sureshkumar, C.

<sup>a</sup>Department of Computer Science, Sri GVG Visalakshi College for Women, Udumalpet, India

<sup>b</sup>Department of Information Technology, Sona College of Technology, Salem, India

<sup>c</sup>Department of Information Technology, KGISL Institute of Technology, Coimbatore, India

### Abstract

Skin cancers, such as melanoma, can be difficult to spot in their early stages because they often resemble benign moles. Early detection of melanoma is crucial as it increases the chances of successful treatment and prevents cancer from spreading to other areas of the body. Machine learning algorithms and computer vision techniques are versatile techniques for detecting melanoma. However, current research has limitations, such as inaccurate detection and longer computation times. This paper proposes a novel hybrid Extreme Learning Machine (ELM) and Teaching–Learning-Based Optimization (TLBO) algorithm as a versatile technique for detecting melanoma. ELM is a single-hidden layer feed-forward neural network that can be trained quickly and accurately, while TLBO is an optimization algorithm used to fine-tune the network's parameters for improved performance. Together, these techniques can classify skin lesions as benign or malignant images, potentially improving melanoma detection accuracy. © 2023 The Author(s)

### Author keywords

- Extreme learning classifier
- Improved weighted fuzzy C-Means algorithm
- Neural networks
- Segmentation
- Skin cancer
- Teaching learning based optimization

### Indexed keywords

EMTREE medical terms:

- algorithm
- Article
- artificial neural network
- classifier
- diagnostic accuracy
- fuzzy system
- image segmentation
- machine learning
- melanoma
- process optimization
- skin cancer
- skin defect
- teaching

Akilandasowmya, G. , Nirmaladevi, G. , Suganthi, S.U. Skin cancer diagnosis: Leveraging deep hidden features and ensemble classifiers for early detection and classification

(2024) *Biomedical Signal Processing and Control*

Zhao, W. , Wang, L. , Zhang, Z. Quadratic Interpolation Optimization (QIO): A new optimization algorithm based on generalized quadratic interpolation and its applications to real-world engineering problems

(2023) *Computer Methods in Applied Mechanics and Engineering*

Debelee, T.G. Skin Lesion Classification and Detection Using Machine Learning Techniques: A Systematic Review

(2023) *Diagnostics*

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DOI: 10.1016/j.health.2023.100161  
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Hemalatha, B.; Department of Information Technology, KGISL Institute of Technology, Coimbatore, India;  
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Topic:

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# Document details - Designing the heterostructured FeWO<sub>4</sub>/FeS<sub>2</sub> nanocomposites for an enhanced photocatalytic organic dye degradation

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Chemosphere
Volume 334, September 2023, Article number 138979

## Designing the heterostructured FeWO<sub>4</sub>/FeS<sub>2</sub> nanocomposites for an enhanced photocatalytic organic dye degradation(Article)

Parasuraman, B., Kandasamy, B., Murugan, I., Alsalhi, M.S., Asemi, N., Thangavelu, P., Perumal, S.

<sup>a</sup>Smart Materials Laboratory, Department of Physics, Periyar University, Tamil Nadu, Salem, 636011, India

<sup>b</sup>Department of Materials Engineering, Kasetsart University, Bangkok, 10903, Thailand

<sup>c</sup>Department of Chemistry, Sri GVG Visalakshi College for Women, Udumalpet, Tamil Nadu, 642128, India

View additional affiliations

### Abstract

The present study, reports a facile approach for the synthesis of FeWO<sub>4</sub>/FeS<sub>2</sub> nanocomposites were demonstrated through hydrothermal method. The surface morphology, crystalline structure, chemical composition, optical properties of the prepared samples was analysed by different various technique. The result observed analysis indicates that, the formation of heterojunction by 2:1wt% of FeWO<sub>4</sub>/FeS<sub>2</sub> nanohybrid has the lowest recombination rate of electron-hole pairs and the least electron transfer resistance. Due to its the broad absorption spectral range and preferable energy band gap, the (2:1) FeWO<sub>4</sub>/FeS<sub>2</sub> nanohybrid photocatalyst exhibits an excellent ability to remove MB dye when exposed to UV-Vis. Light irradiation. Its photocatalytic activity of (2:1) FeWO<sub>4</sub>/FeS<sub>2</sub> nanohybrid is higher than other as prepared samples due to its synergistic effects, enhanced light absorption and high charge carrier separation. Radical trapping experimental result implies that the photo-generated free electrons and hydroxyl radicals are essential to degrade the MB dye. Furthermore, a possible future mechanism for FeWO<sub>4</sub>/FeS<sub>2</sub> nanocomposites photocatalytic activity was discussed. Moreover, the recyclability analysis demonstrated that the FeWO<sub>4</sub>/FeS<sub>2</sub> nanocomposites can be recycled multiple times. The enhanced photocatalytic activity of 2:1 FeWO<sub>4</sub>/FeS<sub>2</sub> nanocomposites is promising for the further application of visible light driven photocatalyst in wastewater treatment. © 2023 Elsevier Ltd

### Author keywords

FeWO<sub>4</sub>/FeS<sub>2</sub> Hydrothermal synthesis Methylene blue (MB) dye Photocatalytic degradation

### Indexed keywords

Engineering controlled terms:

Aromatic compounds Energy gap Free radical reactions Heterojunctions Light absorption Morphology Nanocomposites Optical properties Photocatalytic activity Photodegradation Surface morphology Wastewater treatment

Engineering uncontrolled terms

Crystalline structure Dye degradation FeWO<sub>4</sub>/FeS<sub>2</sub> Hydrothermal methods Methylene blue dye Nanohybrids Organic dye Photo-catalytic Photocatalytic activities Photocatalytic degradation

Engineering main heading:

Hydrothermal synthesis

EMTREE drug terms:

hydroxyl group methylene blue nanocomposite coloring agent

Cited by 11 documents

Adaikalapandi, S., Thangadurai, T.D., Sivakumar, S.

Decoration of 2 H-MoS<sub>2</sub> on the surfaces of activated carbon derived from bamboo stem biomass waste: A regenerative novel architecture for effective degradation of methylene blue under natural light

(2024) *Colloids and Surfaces A: Physicochemical and Engineering Aspects*

Li, H.-J., Wang, Z.-R., Zhou, X.-D.

Synthesis of hierarchical FePc-ZS-1 zeolites and its rapid photocatalytic degradation of MB under visible light and H<sub>2</sub>O<sub>2</sub>

(2024) *Journal of Molecular Structure*

Shakoor, I., Jabeen, U., Ahmad, I. ZnS and Fe-doped ZnS photocatalysts for improved visible light driven photocatalytic degradation of methylene blue

(2024) *Inorganica Chimica Acta*

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Article chemical composition crystal structure electron electron transport irradiation  
light light absorption photocatalysis surface property synergistic effect synthesis  
waste water management chemistry light

Regional Index:

Croatia Vis

MeSH:

Coloring Agents Light Nanocomposites

## Chemicals and CAS Registry Numbers:

methylene blue, 61-73-4;

Coloring Agents

## Funding details

Funding sponsor	Funding number	Acronym
Department of Science and Technology, Ministry of Science and Technology, India See opportunities by डीएसटी	RSP 2023R68	डीएसटी
King Saud University		KSU

### Funding text #1

The XRD data has been collected from the powder XRD facility funded by DST-FIST to the Department of Physics, Periyar University, Salem- 11, Tamil Nadu, India. The author expresses their sincere appreciation to the researchers supporting project number (RSP 2023R68) King Saud University, Riyadh, Saudi Arabia.

### Funding text #2

The XRD data has been collected from the powder XRD facility funded by DST-FIST to the Department of Physics, Periyar University , Salem- 11, Tamil Nadu, India. The author expresses their sincere appreciation to the researchers supporting project number ( RSP 2023R68 ) King Saud University , Riyadh, Saudi Arabia.

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Thangavelu, P.; Smart Materials Laboratory, Department of Physics, Periyar University, Tamil Nadu, Salem, India

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# Document details - Magnetic recyclable CuFe<sub>2</sub>O<sub>4</sub>/rGO nanocomposite for the degradation of tetracycline under sunlight irradiation

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Journal of Chemical Technology and Biotechnology
Volume 98, Issue 8, August 2023, Pages 1908-1917

## Magnetic recyclable CuFe<sub>2</sub>O<sub>4</sub>/rGO nanocomposite for the degradation of tetracycline under sunlight irradiation(Article)([Open Access](#))

Aruljothi, C., Balaji, P., **Vaishnavi, E.**, Pazhanivel, T., Vasuki, T. <sup>a</sup>Department of Physics, P.K.R. Arts College for Women, Gobichettipalayam, India<sup>b</sup>Smart Materials Laboratory, Department of Physics, Periyar University, Salem, India<sup>c</sup>Department of Chemistry, Sri GVG Visalakshi College for Women, Udumalpet, India

### Abstract

**BACKGROUND:** During the past several decades, photocatalytic activity by ferrite nanomaterials has been widely interested in environmental remediation. Magnetically recyclable CuFe<sub>2</sub>O<sub>4</sub>/rGO nanocomposite with different graphene oxide contents was prepared by hydrothermal method, and the photodegradation performance of this nanocomposite was studied under sunlight irradiation. **RESULTS:** The magnetic property of the nanocomposite showed a high magnetic saturation with superparamagnetic nature, leading to an additional use for catalysts aside from pollutant suspension and recyclable. The experimental results showed that the CuFe<sub>2</sub>O<sub>4</sub>/rGO (10 wt.%) nanocomposite had the best photocatalytic activity in tetracycline (TC) degradation, and its photocatalytic degradation rate was 1.55 and 1.85 times higher than those of CuFe<sub>2</sub>O<sub>4</sub>/rGO15 and CuFe<sub>2</sub>O<sub>4</sub>/rGO20 under sunlight irradiation in 160 min. **CONCLUSIONS:** This considerable enhancement in performance was mainly due to the formation of the CuFe<sub>2</sub>O<sub>4</sub>/rGO nanocomposite, which promoted effective charge carrier separation and delayed the recombination process. The possible photodegradation mechanism of the nanocomposite was revealed based on the energy levels and active radical scavenger experiments. The superoxide radical was the main reaction species, thus confirming the TC degradation mechanism. The enhanced photocatalytic performance of CuFe<sub>2</sub>O<sub>4</sub>/rGO nanocomposite has attracted attention for its use as a potential candidate for the degradation of organic pollutants. © 2023 Society of Chemical Industry (SCI).

### Author keywords

[nanocomposite](#) [photodegradation](#) [superoxide radical](#) [superparamagnetic](#) [tetracycline](#)

### Indexed keywords

Engineering controlled terms: [Graphene](#) [Irradiation](#) [Organic pollutants](#) [Photocatalytic activity](#) [Photodegradation](#)

Engineering uncontrolled terms: [Environmental remediation](#) [Graphene oxides](#) [Performance](#) [Photo degradation](#) [Photocatalytic activities](#) [Recyclables](#) [Sunlight irradiation](#) [Superoxide radical](#) [Superparamagnetics](#) [Tetracycline](#)

Engineering main heading: [Nanocomposites](#)

EMTREE drug terms: [graphene oxide](#) [nanocomposite](#) [tetracycline](#)

Cited by 7 documents

Naz, A. , Bibi, I. , Majid, F.

Cu and Fe doped NiCo<sub>2</sub>O<sub>4</sub> nanocomposite ferroelectric, magnetic, dielectric and optical properties: Visible light-driven photocatalytic degradation of RhB and CR dyes (2024) *Diamond and Related Materials*

Priyadarshini, M. , Ahmad, A. , Yadav, S.

Anodic oxidation of salicylic acid using multi-walled carbon nanotubes modified carbon felt with simultaneous CO<sub>2</sub> reduction by electrocoagulated sludge derived MIL-53(Fe/Cu) metal-organic framework cathode decorated with CuFe<sub>2</sub>O<sub>4</sub>

(2023) *Chemical Engineering Journal*

Cui, M.-J. , Jiang, J.-Z. , Song, Z.-H.

Enhanced photocatalytic degradation of methylene blue using carbon dots-modified copper chloride hydroxide nanocomposite

(2023) *Inorganic Chemistry Communications*

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## Chemicals and CAS Registry Numbers:

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ISSN: 02682575

CODEN: JCTBD

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Original language: English

DOI: 10.1002/jctb.7408

Document Type: Article

Publisher: John Wiley and Sons Ltd

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👤 Vasuki, T.; Department of Physics, P.K.R. Arts College for Women, Tamilnadu, Gobichettipalayam, India;

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# Document details - Nanoscale-based ZnS-GdS shell layer decorated hierarchical ZnO nanorod array photoanode with enhanced photo-electrochemical activity under visible light

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Journal of Alloys and Compounds
Volume 942, 5 May 2023, Article number 168871

## Nanoscale-based ZnS-GdS shell layer decorated hierarchical ZnO nanorod array photoanode with enhanced photo-electrochemical activity under visible light(Article)

 Umadevi, S., [Arabhakar, P.](#), [Han, Y.-K.](#), [Ranjith, K.S.](#)
<sup>a</sup>Department of Chemistry, Sri GVG Visalakshi College for Women, Tamil Nadu, Udumalaipettai, 642128, India

<sup>b</sup>Department of Chemistry, Arulmigu Palaniandavar College of Arts and Culture, Tamil Nadu, Palani, 624601, India

<sup>c</sup>Department of Energy and Materials Engineering, Dongguk University-Seoul, Seoul, 100-715, South Korea

### Abstract

We established a nanograined ZnS-GdS shell layer decorated with hierarchical ZnO nanorod (NR) arrays with significantly improved visible light photo-electrochemical performance. The ZnO nanorod surface is decorated with a ZnS-GdS shell layer through the sulfidation. Photoluminescence (PL) spectral study stated that the introduction of a ZnS-GdS shell layer improvises effective charge separation efficiency with the additional influence of surface defect states. The ZnO/ZnS-GdS core-shell NR array shows higher photo-electrochemical performance than the ZnO NR arrays under visible light, with a significant photocurrent density of 2.6 mA/cm<sup>2</sup>. The highest solar to hydrogen conversion efficiency is reached 3.2%, 14 times higher than pristine ZnO nanorod with a bias potential of 0 V versus Ag/AgCl. The results suggest that the ZnS-GdS shell layer enhances the visible light absorption and makes heterostructure, which helps transfer photogenerated charge carriers and reduces the recombination rate to enhance the photo-electrochemical efficiency of ZnO/ZnS-GdS heterostructure. © 2023 Elsevier B.V.

### Author keywords

 Core-shell [Heterostructure](#) [Nanorod arrays](#) [Photo-electrochemical water splitting](#) [Photoanode](#) [ZnO/ZnS-GdS](#)

### Indexed keywords

Engineering controlled terms:

[Conversion efficiency](#) [II-VI semiconductors](#) [Image enhancement](#) [Light absorption](#) [Light scattering](#) [Nanorods](#) [Shells \(structures\)](#) [Silver compounds](#) [Solar power generation](#) [Spectroscopic analysis](#) [Surface defects](#) [Zinc oxide](#)

Engineering uncontrolled terms

[Core shell](#) [Electrochemicals](#) [Nano-rod arrays](#) [Photo-anodes](#) [Photo-electrochemical water splitting](#) [Shell layers](#) [Water splitting](#) [Zno nanorods arrays](#) [ZnO/ZnS](#) [ZnO/ZnS-GdS](#)

Engineering main heading:

[Zinc sulfide](#)

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Jiang, X. , He, P. , Wu, L.

Increased oxygen vacancies and Sc doping in ZnO promote bacterial disinfection and methyl orange degradation

 (2023) *Applied Surface Science*
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Funding sponsor	Funding number	Acronym
Ministry of Science, ICT and Future Planning	2022R1C1C1010601	MSIP
National Research Foundation of Korea		NRF

### Funding text

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
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**Original language:** English

**DOI:** 10.1016/j.jallcom.2023.168871

**Document Type:** Article

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# Document details - Green Synthesis of Selenium Nanoparticles Mediated by Nilgirianthus ciliates Leaf Extracts for Antimicrobial Activity on Foodborne Pathogenic Microbes and Pesticidal Activity Against *Aedes aegypti* with Molecular Docking

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Biological Trace Element Research

Volume 200, Issue 6, June 2022, Pages 2948-2962

## Green Synthesis of Selenium Nanoparticles Mediated by Nilgirianthus ciliates Leaf Extracts for Antimicrobial Activity on Foodborne Pathogenic Microbes and Pesticidal Activity Against *Aedes aegypti* with Molecular Docking(Article)

Meenambigai, K., Kokila, R., Chandhirasekar, K., Thendralmanikandan, A., Kaliannan, D., Ibrahim, K.S., Kumar, S., Liu, W., Balasubramanian, B., Nareshkumar, A.

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[View additional affiliations](#)

### Abstract

The present study deals with the synthesis of selenium nanoparticles (SeNPs) using Nilgirianthus ciliatus leaf extracts, characterized by UV-Vis spectrophotometer, XRD, FTIR, FE-SEM, HR-TEM, DLS, and zeta potential analysis. The antimicrobial activity against *Staphylococcus aureus* (MTCC96), *Escherichia coli* (MTCC443), and *Salmonella typhi* (MTCC98) showed the remarkable inhibitory effect at 25 µl/mL concentration level. Furthermore, the characterized SeNPs showed a great insecticidal activity against *Aedes aegypti* in the early larval stages with the median Lethal Concentration (LC<sub>50</sub>) of 0.92 mg/L. Histopathological observations of the SeNPs treated midgut and caeca regions of *Ae. aegypti* 4th instar larvae showed damaged epithelial layer and fragmented peritrophic membrane. In order to provide a mechanistic approach for further studies, molecular docking studies using Auto Dock Vina were performed with compounds of *N. ciliatus* within the active site of AeSCP2. Overall, the *N. ciliatus* leaf-mediated biogenic SeNPs was promisingly evidenced to have potential larvicidal and food pathogenic bactericidal activity in an eco-friendly approach. © 2021, The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature.

### Author keywords

[Aedes aegypti](#) [Foodborne pathogens](#) [In silico docking](#) [Nilgirianthus ciliates](#) [Selenium nanoparticles](#)

### Indexed keywords

EMTREE drug terms:

[Nilgirianthus ciliates leaf extract](#) [pesticide](#) [plant extract](#) [selenium nanoparticle](#)  
[unclassified drug](#) [antiinfective agent](#) [insecticide](#) [metal nanoparticle](#) [pesticide](#) [plant extract](#)  
[selenium](#)

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Kathiravan, A., Udayan, E., Rajeshkumar, S.

Unveiling the Biological Potential of Mycosynthesized Selenium Nanoparticles from Endophytic Fungus *Curvularia* sp. LCJ413

(2023) *BioNanoScience*

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cell membrane computer model controlled study Escherichia coli  
field emission scanning electron microscopy foodborne pathogen  
Fourier transform infrared spectroscopy high resolution transmission electron microscopy  
histopathology insecticidal activity larval stage larvicidal activity LC50 midgut  
molecular docking Nilgirianthus ciliates nonhuman photon correlation spectroscopy  
plant leaf Salmonella enterica serovar Typhi Staphylococcus aureus synthesis X ray diffraction  
zeta potential Aedes animal chemistry larva molecular docking

MeSH:

Aedes Animals Anti-Infective Agents Insecticides Larva Metal Nanoparticles  
Molecular Docking Simulation Pesticides Plant Extracts Plant Leaves Selenium

## Chemicals and CAS Registry Numbers:

selenium, 7782-49-2;

Anti-Infective Agents; Insecticides; Pesticides; Plant Extracts; Selenium

## Funding details

Funding sponsor	Funding number	Acronym
University Grants Commission	F1-17.1/ 2015–16/ RGNF2015-17 –SC-TAM-10313	UGC
Periyar University		

### Funding text #1

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Original language: English

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PubMed ID: 34431069

Document Type: Article

Publisher: Humana Press Inc.

Nareshkumar, A.; Department of Zoology, School of Life Sciences, Periyar University, Salem, India;

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# Document details - Target and candidate agents for diabetes treatment in the framework of the food nexus

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Energy Nexus

Volume 5, 16 March 2022, Article number 100041

## Target and candidate agents for diabetes treatment in the framework of the food nexus (Article) [\(Open Access\)](#)

Abirami, D., Gomathi, R.

Sri G.V.G Visalakshi college for women, Tiruppur, Udumalpet, India

### Abstract

Diabetes mellitus is a chronic disease affected by scarcity in the production of insulin. In the present study, we used the bioinformatics approach to examine the possible inhibitory abilities of phytochemical constituents of Tecoma stans towards thioredoxin interacting protein. All the phytochemicals showed good binding attraction to the binding pocket of thioredoxin-interacting protein. pkCSM server was used to detect pharmacodynamics, pharmacokinetics and toxicological profiles of phytochemical compounds. The amino acids Lysin 117, Lysin 115 and Glycine 119 were exhibited as the key residues for the phytochemicals of Tecoma stans and binding to inhibit the thioredoxin-interacting protein. However further studies are needed to identify the efficacies and activities of Tecoma stans compounds against thioredoxin-interacting protein. © 2022

### Author keywords

Pharmacodynamics

Pharmacokinetics

Tecoma stans

Thioredoxin-interacting protein

Toxicological profiles and phytochemical compounds

ISSN: 27724271

Source Type: Journal

Original language: English

DOI: 10.1016/j.nexus.2022.100041

Document Type: Article

Publisher: Elsevier Ltd

Abirami, D.; Sri G.V.G Visalakshi college for women, Tiruppur, Udumalpet, India;

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Cited by 4 documents

Naibaho, J. , Pudło, A. , Bobak  
Conventional water bath heating on undried brewer's spent grain: Functionality, fatty acids, volatiles, polyphenolic and antioxidant properties

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Alteration of volatile compounds profile of brewers' spent grain by bath-ultrasonication and its combination with conventional water-bath and autoclave treatment

*(2022) Ultrasonics Sonochemistry*

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# Document details - Imidazolatic-Framework Bimetal Electrocatalysts with a Mixed-Valence Surface Anchored on an rGO Matrix for Oxygen Reduction, Water Splitting, and Dye Degradation

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ACS Omega
Volume 6, Issue 24, 22 June 2021, Pages 16029-16042

## Imidazolatic-Framework Bimetal Electrocatalysts with a Mixed-Valence Surface Anchored on an rGO Matrix for Oxygen Reduction, Water Splitting, and Dye Degradation (Article) [\(Open Access\)](#)

Palani, R., [Anitha, V.](#), Marupiah, C., Rajalakshmi, S., Li, Y.-J.J., Hung, T.-F., Yang, C.-C.

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<sup>b</sup>Department of Chemical Engineering, Ming Chi University of Technology, New Taipei City, 24301, Taiwan

<sup>c</sup>Department of Chemical and Materials Engineering, Chang Gung University, Kwei-shan, Taoyuan, 333, Taiwan

[View additional affiliations](#)

### Abstract

This paper presents a simple strategy for manufacturing bifunctional electrocatalysts - graphene nanosheets (GNS) coated with an ultrafine NiCo-MOF as nanocomposites (denoted NiCo-MOF@GNS) having a N-doped defect-rich and abundant cavity structure through one-pool treatment of metal-organic frameworks (MOFs). The precursors included N-doped dodecahedron-like graphene nanosheets (GNS), in which the NiCo-MOF was encompassed within the inner cavities of the GNS (NiCo-MOF@GNS) at the end or middle portion of the tubular furnace with several graphene layers. Volatile imidazolate Nx species were trapped by the NiCo-MOF nanosheets during the pyrolysis process, simultaneously inserting N atoms into the carbon matrix to achieve the defect-rich porous nanosheets and the abundantly porous cavity structure. With high durability, the as-prepared nanomaterials displayed simultaneously improved performance in the oxygen reduction reaction (ORR), the oxygen evolution reaction (OER), and photocatalysis. In particular, our material NiCo-MOF@GNS-700 exhibited excellent electrocatalytic activity, including a half-wave potential of 0.83 V (EORR, 1/2), a low operating voltage of 1.53 V (EOER, 10) at 10 mA cm<sup>-2</sup>, a potential difference ( $\Delta E$ ) of 1.02 V between EOER, 10 and EORR, 1/2 in 0.1 M KOH, and a low band gap of 2.61 eV. This remarkable behavior was due to the structure of the defect-rich porous carbon nanosheets and the synergistic impact of the NPs in the NiCo-MOF, the N-doped carbon, and NiCo-Nx. Furthermore, the hollow structure enhanced the conductivity and stability. This useful archetypal template allows the construction of effective and stable bifunctional electrocatalysts, with potential for practical viability for energy conversion and storage. © 2021 The Authors. Published by American Chemical Society.

### Funding details

Funding sponsor	Funding number	Acronym
Ministry of Science and Technology, Taiwan	109-3116-F-131-001-CC1	MOST

### Funding text

The authors thank the Ministry of Science and Technology of Taiwan (Project No. MOST 109-3116-F-131-001-CC1) for financial support.

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One-Step Electrodeposition of a Mesoporous Ni/Co-Imidazole-Based Bimetal-Organic Framework on Pyramid-like NiSb with Abundant Coupling Interfaces as an Ultra-Stable Heterostructural Electrocatalyst for Water Splitting

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Pomegranate-like Ni-doped cobalt boride implanted in B, N-doped carbon nanocages for enhanced electrochemical oxygen evolution

(2023) *International Journal of Hydrogen Energy*

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# Document details - Non-conventional photoactive transition metal complexes that mediated sensing and inhibition of amyloidogenic aggregates

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Coordination Chemistry Reviews
Volume 428, 1 February 2021, Article number 213612

## Non-conventional photoactive transition metal complexes that mediated sensing and inhibition of amyloidogenic aggregates(Review)

 Babu, E., [Bhuvanewari, J.](#), [Rajakumar, K.](#), [Sathish, V.](#), [Thanasekaran, P.](#)
<sup>a</sup>Department of Chemistry, Sri Eshwar College of Engineering, Coimbatore, 641 202, India

<sup>b</sup>Department of Chemistry, Sri GVG Visalakshi College for Women, Udumalpet, 642128, India

<sup>c</sup>Department of Chemistry, Bannari Amman Institute of Technology, Sathyamangalam, 638 401, India

[View additional affiliations](#)

### Abstract

Alzheimer's disease (AD), a devastating neurodegenerative disease, is associated with the abnormal accumulation and aggregation of  $\beta$ -amyloid proteins ( $A\beta$ ) along with the deposition of high levels of Cu, Fe and Zn ions in the brain, causing neuronal cell deaths to lead the cognitive disabilities and even death. As there is a direct relationship between AD and  $A\beta$  aggregation, an intense research activity has been made to develop drug materials that serve as probes and inhibitors for controlling the pathways of  $A\beta$  peptide aggregation. However, their relatively instability in aqueous medium, tedious sample treatment, multistep syntheses, or low detection ability limit their potential applications. Therefore, the development of photoactive metal complexes for the selective detection and inhibition effects of  $A\beta$  aggregation is a thrust area in biomedical research. In this review, the use of non-conventional photoactive metal complexes including Ru(II), Re(I), Ir(III) and Pt(II) has the potential advantages of probes for monitoring and inhibiting the fibrillation as well as the toxicity of  $A\beta$  over conventional dyes such as Thioflavin T (ThT). The geometry, multiple electronic/spin states and redox nature of metal centres have made them tunable properties. Upon binding to the  $A\beta$  peptide aggregates, they exhibit promising potential as anti-AD agents due to their fascinating photophysical properties include red emissions, large Stokes shifts, and long lifetimes, which differentiate the competitive binding of other short-lived fluorescent molecules via photoluminescence, and time-resolved measurements. In addition, metal complexes display their remarkable selectivity and superiority over ThT. Competition study between photoactive metal complexes and ThT on fibrillation process show their effective binding of metal complex with  $A\beta_{42}$  fibrils by hindering the ThT binding to give higher binding constants than that of ThT. Computational studies predicted a hydrophobic domain between amino acid binding sites and the functional group of photoactive metal complexes via different noncovalent interactions. Thus, attractive characteristics of photoactive metal complexes could influence remarkable evolutions in new dimensions, which in turn address current challenges in the clinical use of the detection and inhibition of  $A\beta$  fibrils. © 2020 Elsevier B.V.

### Author keywords

 Inhibitor [Luminescent probes](#) [Selectivity](#) [Sensing](#) [Transition metal complexes](#)  [\$\beta\$ -Amyloid aggregates](#)

### Funding details

Funding sponsor	Funding number	Acronym
Ministry of Science and Technology, Taiwan	MOST-106-2113-M-001-032, MOST-109-2811-M-030-500	MOST

[Funding text](#)

Cited by 10 documents

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This article is dedicated to the occasion of the 81st birthday anniversary of Prof. C. Srinivasan (Retired) and 70th birthday anniversary of Prof. S. Rajagopal (Retired) Madurai Kamaraj University, Madurai, India. VS thanks to the Management of Bannari Amman Institute of Technology , Sathyamangalam for their supports. Research reported in this publication was supported by the Ministry of Science and Technology, Taiwan under Award Number MOST-106-2113-M-001-032 and MOST-109-2811-M-030-500.

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**Source Type:** Journal

**Original language:** English

**DOI:** 10.1016/j.ccr.2020.213612

**Document Type:** Review

**Publisher:** Elsevier B.V.

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✉ Sathish, V.; Department of Chemistry, Bannari Amman Institute of Technology, Sathyamangalam, India;

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# Document details - Synthesis and characterization of SnO<sub>2</sub> nanoparticles by co-precipitation method

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International Journal of Nano Dimension

Volume 12, Issue 1, January 2021, Pages 76-82

## Synthesis and characterization of SnO<sub>2</sub> nanoparticles by co-precipitation method(Article)

Balakrishnan, K., Murugesan, N.

Department of Physics, Sri G.V.G Visalakshi College for Women, Udumalpet, India

### Abstract

Tin oxide (SnO<sub>2</sub>) nanoparticles were synthesized by co-precipitation method and the synthesized nanoparticles were annealed at different temperatures for characterization. The powders were investigated with X-ray diffraction, scanning electron microscopy and optical spectroscopy. The structural characterization was carried out by X-ray diffraction which confirms the crystalline nature of the films with a tetragonal structure. SEM analysis of the powders enabled the conclusion that the prepared nanoparticles are spherical particles which are smaller in size composed of clustered and agglomerated nanoparticles. From the absorption spectra the type of transition and band gap of the synthesized nanoparticles were estimated. The optical (UV-visible) spectrum exhibits a well defined absorption which is considerably blue shifted related to the peak absorption of bulk SnO<sub>2</sub> indicating quantum size effect. © 2021, Islamic Azad University of Tonekabon. All rights reserved.

### Author keywords

[Morphological Properties](#) [Optical Properties](#) [Quantum Size Effect](#) [Structural Properties](#) [Tetragonal Structure](#)
[Tin Oxide Nanoparticles](#)

### Funding details

#### Funding text

The authors are grateful to the Secretary, Di-rector, Principal and Head of the Department of Physics, Sri G.V.G Visalakshi College for Women, Udumalpet for their excellent encouragement and support.

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Original language: English

DOI: 10.22034/IJND.2021.677125

Document Type: Article

Publisher: Islamic Azad University of Tonekabon

Cited by 8 documents

Kamil, Z.A. , Al-Saadi, T.M.

Investigation of the Structural Properties of Sn<sub>1-x</sub>Mn<sub>x</sub>O<sub>2</sub> Nanoparticles Prepared Using the Sol-Gel Method

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Devi, L.R. , Sarathi, R. , Sheeba, N.L.

Influence of pH variation on structural, optical, and superparamagnetic behavior of Ni-doped ZnO (X=0.02) using a solvothermal method

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(2022) *Journal of Industrial and Engineering Chemistry*

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# Document details - A note on nano generalized pre C-closed sets

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International Journal of Advanced Science and Technology
Volume 29, Issue 3 Special Issue, 11 March 2020, Pages 194-201

## A note on nano generalized pre C-closed sets(Article)

Padmavathi, P., Nithyakala, R.

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<sup>b</sup>Department of Mathematics, Vidyasagar College of Arts and Science, Udumalpet, Tamilnadu, India

### Abstract

The aim of this paper is to introduce a new class of set called Nano Generalized pre c-closed set in Nano Topological Spaces and study the basic properties of generalized pre c-interior, nano generalized pre c-closure and nano generalized pre c-kernel using the defined set and investigates their characterizations. © 2020 SERSC.

### Author keywords

Ngpc-closed set Ngpc-closure and Ngpc-kernel Ngpc-interior

ISSN: 20054238

Source Type: Journal

Original language: English

Document Type: Article

Publisher: Science and Engineering Research Support Society

Padmavathi, P.; Department of Mathematics, Sri G.V.G Visalakshi College for Women, Udumalpet, Tamilnadu, India

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Padmavathi, P. , Nithyakala, R.

On nano generalized pre c-continuous functions in nano topological spaces

(2020) *Advances in Mathematics: Scientific Journal*

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# Document details - One step hydrothermal green approach of CuO/Ag nanocomposites: Analysis of structural, biological activities

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Materials Research Express

Volume 6, Issue 9, 10 July 2019, Article number 095036

## One step hydrothermal green approach of CuO/Ag nanocomposites: Analysis of structural, biological activities(Article)

Nandhakumar, E., Priya, P., Selvakumar, P., **Vaishnavi, E.**, Sasikumar, A., Senthilkumar, N. <sup>a</sup>Department of Mechanical Engineering, Sri Ramakrishna Engineering College, Coimbatore, 641022, India<sup>b</sup>Department of Chemistry, Advanced Materials Research Laboratory, Periyar University, Salem, 636 011, India<sup>c</sup>Department of Physics, Coimbatore Institute of Technology, Coimbatore, 641 014, India[View additional affiliations](#)

### Abstract

In this present investigation, CuO/Ag Nanocomposites (NCs) were prepared by one step hydrothermal green method. The *Jatropha curcas* leaf extract was act as the reducing as well as capping agent for synthesis of CuO/Ag NCs. The powder X-ray diffraction (PXRD) studies were investigated the crystal phase structure of CuO and Ag nanomaterials. The presence of oxygen vacancies and Cu interstitial defects in the synthesized material was determined by photo luminescence and Raman analysis. The CuO/Ag NCs was evidenced by TEM analysis and elemental composition of the prepared material was identified by EDAX analysis. The green synthesized CuO/Ag NCs exhibited excellent antimicrobial activity and better antioxidant DPPH free radical scavenging activity. The cytotoxicity of CuO/Ag NCs was assayed against osteoblast MC3T3-E1 and able to inhibit the cell growth by dose-dependent manner. © 2019 IOP Publishing Ltd.

### Indexed keywords

Engineering controlled terms:

[Cell proliferation](#) [Crystal structure](#) [Free radicals](#) [Nanocomposites](#) [Phase structure](#)

Engineering uncontrolled terms

[Anti-microbial activity](#) [Crystal phase structure](#) [Dose-dependent manner](#)  
[DPPH free radical scavenging activities](#) [Elemental compositions](#) [Interstitial defects](#)  
[Powder X-ray diffraction \(pXRD\)](#) [Synthesized materials](#)

Engineering main heading:

[Copper oxides](#)

ISSN: 20531591

Source Type: Journal

Original language: English

DOI: 10.1088/2053-1591/ab2eb9

Document Type: Article

Publisher: Institute of Physics Publishing

Cited by 15 documents

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Antimicrobial, antioxidant, cytotoxicity and photocatalytic performance of Co doped ZnO nanoparticles biosynthesized using *Annona Muricata* leaf extract(2023) *Journal of Environmental Health Science and Engineering*

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(2023) *Chemical Papers*

Vindhya, P.S. , Kavitha, V.T.

Leaf extract-mediated synthesis of Mn-doped CuO nanoparticles for antimicrobial, antioxidant and photocatalytic applications

(2023) *Chemical Papers*[View details of all 15 citations](#)

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# Document details - Transition metal complexes based aptamers as optical diagnostic tools for disease proteins and biomolecules

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Coordination Chemistry Reviews

Volume 380, 1 February 2019, Pages 519-549

## Transition metal complexes based aptamers as optical diagnostic tools for disease proteins and biomolecules(Review)

 Babu, E. [Bhuvaneshwari, J.](#), Muthu Mareeswaran, P., Thanasekaran, P., Lee, H.-M., Rajagopal, S. 
<sup>a</sup>Department of Chemistry, Sri Eshwar College of Engineering, Coimbatore, 641 202, India<sup>b</sup>Department of Chemistry, Sri GVG Visalakshi College for Women, Udumalpet, 642128, India<sup>c</sup>Department of Industrial Chemistry, Alagappa University, Karaikudi, 630003, India

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### Abstract

Aptamers are powerful recognition elements that can bind a large number of target molecules, including metal ions, small molecules, proteins, enzymes, even complex targets like cancer cells, etc., with high affinity and specificity. Hence, aptamer-based biosensors (hereafter named “aptasensors”) have been extensively utilized in the field of clinical diagnostics and biomedical applications. In contrast to organic luminophores and quantum dots, luminescent transition metal complexes offer many desirable and wide-ranging properties, including tunable emission throughout the visible to NIR regions, long lifetime with a large Stokes shift, high quantum yield, good thermal, chemical and photochemical stability and metabolic inertness for biosensing applications. The incorporation of biomolecules or lipophilic entities into the metal complexes could overcome problems associated with membrane permeability and uptake by cells. Especially, Ru(II) and Ir(III) complexes are promising candidates for these potential applications. This review describes an overview of recent progress in the emerging area of aptasensors utilizing Ru(II) and Ir(III) transition metal complexes. To date, though aptasensors have been used in a wide variety of detection techniques, we have focused mainly on the luminescence approach in this article. Numerous aptasensors have illustrated promising detection results, even in complicated biological environments. If more rigorous research is continued on this area, it is hoped that in the future transition metal complexes based aptamers may show tremendous applications in biomedical research, especially diagnostics, imaging and drug delivery. © 2018 Elsevier B.V.

### Author keywords

[Aptamer](#) [Biosensor](#) [Luminescence](#) [Metal complexes](#) [Proteins](#)

### Funding details

Funding sponsor	Funding number	Acronym
Science and Engineering Research Board See opportunities by SERB	ECR/2015/000346	SERB
Academia Sinica See opportunities	AS-iMATE-107-21	
Ministry of Science and Technology, Taiwan		MOST
Ministerio de Ciencia y Tecnología	101-2113-M-001-001-MY2,103-2113-M-001-028-MY2	MICYT

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 Shang, H. , Zhang, X. , Ding, M.  
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(2023) *Talanta*

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Mukherjee, A.G. , Renu, K. , Gopalakrishnan, A.V.

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This work is dedicated to Prof. R. Ramaraj, FNA. The authors sincerely thank all the co-workers who have contributed to this research as cited. EB expresses sincere gratitude to Science and Engineering Research Board (SERB), New Delhi, for the financial support under ECR scheme (Grant No. ECR/2015/000346). Dr. H. M. Lee and Dr. P.T thank thank the Academia Sinica (AS-iMATE-107-21) and Ministry of Science and Technology (101-2113-M-001-001-MY2; 103-2113-M-001-028-MY2), Taiwan for financial support.

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This work is dedicated to Prof. R. Ramaraj, FNA. The authors sincerely thank all the co-workers who have contributed to this research as cited. EB expresses sincere gratitude to Science and Engineering Research Board (SERB), New Delhi, for the financial support under ECR scheme (Grant No. ECR/2015/000346). Dr. H. M. Lee and Dr. P.T thank thank the Academia Sinica (AS-iMATE-107-21) and Ministry of Science and Technology (101-2113-M-001-001-MY2; 103-2113-M-001-028-MY2), Taiwan for financial support.

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👤 Babu, E.; Department of Chemistry, Sri Eshwar College of Engineering, Coimbatore, India;

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# Document details - Secured energy aware cloudlet provisioning in mobile cloud environment

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Journal of Advanced Research in Dynamical and Control Systems

Volume 11, Issue 4, 1 January 2019, Pages 1274-1279

## Secured energy aware cloudlet provisioning in mobile cloud environment(Article)

Shobana, S., Subramanian, T.K.G.G., Radhika, N., Prashanth, S., Sundareswaran, C.

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<sup>b</sup>Department of Computer Science and Engineering, Amrita School of Engineering, Amrita Vishwa Vidyapeetham, Coimbatore, India

### Abstract

By virtue of Internet, Mobile Cloud Computing provides powerful resourceful services to the mobile device users. In order to assure secure services in a mobile cloud environment, adoption of data security protocol is unavoidable for cloudlet based architecture. Maximum utilization of mobile devices is an issue due to its resource scarcity like display, battery power, etc. A cloudlet is a resourceful computer inter-connected to the internet. Nearby mobile devices can access the cloudlet with single hop to overcome its resource scarcity. This research, proposes a hybrid security algorithm, which provides secure data transfer in mobile cloud environment using cloudlet. This enables mobile users to utilize the cloud with minimized security risk. The efficiency of the algorithm was appraised with the response time and processing time. © 2018, Institute of Advanced Scientific Research, Inc. All rights reserved.

### Author keywords

### Cited by 1 document

Shobana, S., Radhika, N.

A Comparative Analysis of Cloudlet Provisioning in Mobile Cloud Computing Environment

(2022) Proceedings - 6th International Conference on Computing Methodologies and Communication, ICCMC 2022

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3 Biotech
Volume 8, Issue 3, 1 March 2018, Article number 170

## Preferential adsorption of uranium by functional groups of the marine unicellular cyanobacterium *Synechococcus elongatus* BDU130911(Article)(Open Access)

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<sup>b</sup>National Facility for Marine Cyanobacteria (Sponsored by DBT, Govt. of India), Department of Marine Biotechnology, School of Marine Sciences, Bharathidasan University, Tiruchirappalli, Tamil Nadu 620024, India

<sup>c</sup>Department of Chemistry, Sri G.V.G. Visalakshi College for Women (Autonomous), Affiliated to Bharathiar University, Udumalpet, Tamil Nadu 642128, India

### Abstract

This study reports the surface interaction of the chemically modified marine unicellular cyanobacterium *Synechococcus elongatus* BDU130911 with uranium. The selective functional groups of the control (dead biomass) for binding with uranium in unicellular marine cyanobacteria were identified as carboxyl groups. The adsorption capacity of the biomass in a 1 mM uranium solution was found to be 92% in the control, 85% in the amine-blocked treatments, and 20% in the carboxyl-blocked treatments. The Langmuir isotherm provided a good fit to the data, suggesting a monolayer of uranium adsorption on all the tested biomass. The functional groups involved in the adsorption of uranium by the control and modified biomass were assessed by Fourier transform infrared spectroscopy, energy dispersive X-ray fluorescence and X-ray diffractive analysis. The results of this study identify, carboxyl groups as the dominant anionic functional group involved in uranium adsorption, which validates an ionic interaction between the biomass and uranium, a cationic metal. © 2018, Springer-Verlag GmbH Germany, part of Springer Nature.

### Author keywords

Chemical modification EDXRF FTIR Functional group blocking Marine cyanobacteria Uranium biosorption

### Indexed keywords

EMTREE drug terms: functional group radioisotope uranium

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 adsorption kinetics Article binding site bioremediation biosorption chemical modification colorimetry controlled study esterification infrared spectroscopy isotherm methylation microbial biomass nonhuman priority journal *Synechococcus elongatus* X ray diffraction X ray fluorescence

### Chemicals and CAS Registry Numbers:

uranium, 7440-61-1

Cited by 12 documents

Ismaiel, M.M.S. , El-Ayouty, Y.M. , Abdelaal, S.A.

 Biosorption of uranium by immobilized *Nostoc* sp. and *Scenedesmus* sp.: kinetic and equilibrium modeling

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Banerjee, S. , Kundu, A. , Dhak, P. Bioremediation of uranium from waste effluents using novel biosorbents: a review

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Department of Atomic Energy, Government of India	2007/37/29/ BRNS/1906	DAE
Bhabha Atomic Research Centre		BARC

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 Lakshmanan, U.; National Facility for Marine Cyanobacteria (Sponsored by DBT, Govt. of India), Department of Marine Biotechnology, School of Marine Sciences, Bharathidasan University, Tiruchirappalli, Tamil Nadu, India;

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# Document details - Efficacy of corrosion inhibitive properties of gum exudates of azadirachta indica on carbon steel in 1N hydrochloric acid

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Oriental Journal of Chemistry

Volume 34, Issue 5, 2018, Pages 2487-2494

## Efficacy of corrosion inhibitive properties of gum exudates of azadirachta indica on carbon steel in 1N hydrochloric acid (Article) [Open Access](#)

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### Abstract

Corrosion mitigation of carbon steel by neem gum (gum exudates of *Azadirachta indica*) was investigated in 1N HCl medium. Effect of temperature and immersion period towards the mitigation process is studied using weight loss method. Electrochemical studies indicate that corrosion reaction is inhibited by adsorption of gum molecules. Adsorption process is consistent with Langmuir isotherm. The inhibitor behaves as mixed type for carbon steel corrosion in 1N HCl. Surface morphology studies reveal adsorption on the metal surface. © 2018 Oriental Scientific Publishing Company. All rights reserved.

### Author keywords

Carbon steel

Corrosion inhibition

Gum exudates of *Azadirachta indica*

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SEM

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Mallika, J.; Department of Chemistry, PSG College of Arts and Science, Coimbatore, Tamil Nadu, India;

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Natural polymers and their derivatives as corrosion inhibitors for the oil and gas industry

(2022) *Polymeric Corrosion Inhibitors for Greening the Chemical and Petrochemical Industry*

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Modification of natural gums for application as corrosion inhibitor: a review

(2022) *Journal of Coatings Technology and Research*

Sathiyapriya, T. , Rathika, G. , Dhandapani, M.

In depth analysis of anti corrosion behaviour of eco friendly gum exudate for mild steel in sulphuric acid medium

(2019) *Journal of Adhesion Science and Technology*

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# Document details - Synergistic influence of halide ions on corrosion inhibition performance of gum exudates of azadirachta indica on carbon steel in sulphuric acid medium

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Asian Journal of Chemistry  
Volume 30, Issue 8, 2018, Pages 1815-1822

Synergistic influence of halide ions on corrosion inhibition performance of gum exudates of azadirachta indica on carbon steel in sulphuric acid medium(Article)  
(Open Access)

Manickam, M., Sivakumar, D., Jaganathan, M.

<sup>a</sup>Department of Chemistry, Sri GVG Visalakshi College for Women, Udumalpet, 642 128, India

<sup>b</sup>Department of Chemistry, PSG College of Arts and Science, Coimbatore, 641 014, India

## Abstract

The effect of halide ions on the inhibitive performance of gum exudates of Azadirachta indica on carbon steel in 1 N sulphuric acid medium was investigated using chemical and electrochemical methods. Effect of temperature and immersion period on mitigation performance was studied. The inhibition efficiency of gum exudates of Azadirachta indica considerably increased with the presence of halide ions at all temperature ranges studied. Synergistic influence of halide ions on gum exudates of Azadirachta indica for carbon steel corrosion was reported. Adsorption of gum exudates of Azadirachta indica as well as the inhibitor mixtures are spontaneous and the process followed Langmuir adsorption isotherm. SEM studies supported the adsorption phenomenon. © 2018 Chemical Publishing Co. All Rights Reserved.

## Author keywords

Azadirachta indica gum Corrosion inhibitor Electrochemical studies Halide ions Synergistic effect

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GK, S. , Jacob, J.M. , P, R.

Synergistic effect of salts on the corrosion inhibitive action of plant extract: a review

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# Document details - Efficient cloudlet provisioning using bio-inspired hybrid algorithm in mobile cloud computing

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Journal of Advanced Research in Dynamical and Control Systems

Volume 10, Issue 5 Special Issue, 1 January 2018, Pages 1672-1678

## Efficient cloudlet provisioning using bio-inspired hybrid algorithm in mobile cloud computing(Article)

Shobana, S., Radhika, N.

<sup>a</sup>Research and Development Centre, Bharathiar University, Coimbatore, India<sup>b</sup>Department of Computer Science and Engineering, Amrita School of Engineering, Amrita Vishwa Vidyapeetham, Coimbatore, India

### Abstract

The growth of cloud computing and natural development of mobile applications forms the basis for Mobile Cloud Computing as an upcoming technology for mobile services. Potential utilization of mobile device is a challenge due to resource scarcity. To overcome the major limitations Cloudlets can be used as an intermittent processing, between mobile device and cloud. Here we propose a novel hybrid bio-inspired algorithm for load balancing and scheduling among cloudlets for its efficient provisioning. The proposed algorithm compared with the Firefly algorithm, Ant colony algorithm, Bee colony algorithm, and results proved that the proposed technique reduces battery drain of the mobile device and minimise the average execution time. © 2018, Institute of Advanced Scientific Research, Inc. All rights reserved.

### Author keywords

Bio Inspired algorithm

Cloudlet

Load balancing

Mobile cloud computing

### Cited by 3 documents

Shobana, S., Radhika, N.

A Comparative Analysis of Cloudlet Provisioning in Mobile Cloud Computing Environment

*(2022) Proceedings - 6th International Conference on Computing Methodologies and Communication, ICCMC 2022*

Lakshmi Priya, E., Sai Sreekari, C., Jeyakumar, G.

A comparative study on the performance of bio-inspired algorithms on benchmarking and real-world optimization problems

*(2021) Lecture Notes in Networks and Systems*

Shobana, S., Subramanian, T.K.G.G., Radhika, N.

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