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Department Of Chemistry

Publications Details

Journal Publications: 2024

1. **Roopashree, B., Mahesh, B**., Ramu, R., Rekha, N. D., Manjula, S. N., Preethi, G., & Gayathri, V. (2024). An insight into the cytotoxic, antimicrobial, antioxidant, and biocontrol perspective of novel Iron (III) complexes of substituted benzimidazoles: Inhibition kinetics and molecular simulations. *Journal of Biomolecular Structure and Dynamics*, *42*(21), 11538-11554.

2. Afroz, L., Khan, M. H. M., **Roopashree, B., Puneetha, J.,** & Patel, B. (2024). Adsorption and Biological Evaluation on the Malachite green dye using CuO-ZnO Nanoparticles.

3. Asha, S. C., **Mahesh, B**., Ravikumar, C. R., **Chamaraja, N. A.,** Anand Murthy Green Synthesis of Calcium Oxide Nanoparticles using Ocimum sanctum leaves extracts: Photocatalytic and electrochemical sensor applications. *Journal of Materials Science: Materials in Electronics, 2024,* https://doi.org/10.1007/s10854-024-13374-x

4. **Kathyayani, D., Mahesh, B**., Sionkowska, A., Manjula, S. N., Veeranna, S., & Vicini, S. Insights into the Physicochemical Characteristics and Miscibility of Chitosan/Polypeptide Blends: Promising Material for Wound Healing in Sprague-Dawley Rats. *ACS biomaterials science & engineering*. https://doi.org/10.1021/acsbiomaterials.4c01123

5. Shubha, J. P., **Roopashree, B.,** Sushma, N. V., Kiran, K., Ravikumar, R., Kuniyil, M., Mohammed Rafi Shaik, Mujeeb Khan, Adil, S. F. (2024). Photocatalytic and eco-emission applications of green synthesized ZnO-CB nanoparticles. *Journal of King Saud University-Science*, *36*(9), 103373. https://doi.org/10.1016/j.jksus.2024.103373

6. Kavya, H. V., Sachhidananda, S., Sangamesha, M. A., Rekha, N. D., Kendagannaswamy, B. K., **Chamaraja, N. A.,** & Mallesha, L. (2024). Optical, electrical, and biological properties of PVP-PVA/Ca-doped CoO nanocomposites

for opto-electronic and biological applications. *Ionics*, 1-11. https://doi.org/10.1007/s11581-024-05746-4

7. Manjunatha, A. S., Prakruthi, P. R., **Puneetha, J.,** Shashank, M., & Nagaraju, G. (2024). Cocos nucifera mediated green synthesis and characterization of BiOCl-Fe_2O_3 nanocomposite for photocatalytic dye degradation and electrochemical sensing of dopamine. *Sustainable Chemistry for the Environment*, *7*, 100138.https://doi.org/10.1016/j.scenv.2024.100138.

8. Surendra, D. M., Kumar, C. P., Nandini, C., **Chamaraja, N. A.**, Raghu, A. V., Majani, S. S., ... & Kollur, S. P. (2024). Synthesis, characterization, and assessment of anticancer potency of oxcarbazepine with folic acid conjugated Fe_2O_3 nanostructures as nano-drugs. *Journal of Molecular Structure*, *1306*, 137842. https://doi.org/10.1016/j.molstruc.2024.137842

9. Nanjundaswamy Gumatapura Siddamallappa, **Mahesh Basavaraju**, Alina Sionkowska, Channe Gowda Dase Gowda, (2024). A review on synthetic polypeptide-based blends with other polymers: Emerging trends and advances. *European Polymer Journal*, 113225. https://doi.org/10.1016/j.eurpolymj.2024.113225

10. **Chamaraja, N. A.**, Khan, M.M., Hemalatha, H.N. *et al.* Ca-doped ZnO nanoparticles for MB dye degradation and adsorptive removal of tinidazole. *Environ Monit Assess* **196**, 710 (2024). https://doi.org/10.1007/s10661-024-12843-4

11. **Puneetha, J.**, Kottam, N., & Rajendrachari, S. (2024). Modern trends in carbon nanostructured material-based electrochemical biosensing systems. *Novel Nanostructured Materials for Electrochemical Bio-Sensing Applications*, book chapters, 21-36.

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1. Divakara, S. G., & **Mahesh B.** (2023) A comprehensive review on current trends in greener and sustainable synthesis of ferrite nanoparticles and their promising applications, *Results in Engineering*, 101702

2. **Kathyayani, D., Mahesh, B**., Gowda, D. C., Sionkowska, A., & Veeranna, S. (2023) Investigation of miscibility and physicochemical properties of synthetic polypeptide with collagen blends and their wound healing characteristics, *International Journal of Biological Macromolecules*, 125704. https://doi.org/10.1016/j.ijbiomac.2023.125704

3. **Mahesh, B., &** Mruthunjaya, K Aathira, P. Suresh., Nallupillai Paramakrishnan. (2023) A Comprehensive Review on Cardiospermum halicacabum, *Journal of Natural Remedies*, *23*(2), 284–293. https://doi.org/10.18311/jnr/2023/29382

4. **Mahesh, B**., Lokesh, H. R., **Kathyayani, D**., Sionkowska, A., Gowda, D. C., & Adamiak, K. (2023). Interaction between synthetic elastin-like polypeptide and collagen: Investigation of miscibility and physicochemical properties. *Polymer*, *272*, 125833. https://doi.org/10.1016/j.polymer.2023.125833

5. Lakshminarayana, Shilpa Madhugiri, **Roopashree Boregowda**, and Gayathri Virupaiah. (2023). "Reusable palladium–quinolyl benzimidazole complex immobilized on a polymer for the hydrogenation of organic substrates." *Chemical Papers,* 1-13. https://doi.org/10.1007/s11696-023-02721-7

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7. Shubha, J. P., **Roopashree, B.**, Patil, R. C., Khan, M., Shaik, M. R., Alaqarbeh, M.,& Adil, S. F. (2023). Facile synthesis of ZnO/CuO/Eu heterostructure photocatalyst for the degradation of industrial effluent. *Arabian Journal of Chemistry*, *16*(3), 104547. https://doi.org/10.1016/j.arabjc.2023.104547

8. Kokila, N. R., **Mahesh, B.**, Ramu, R., **Roopashree, B.**, & Mruthunjaya, K. (2023). α-Amylase inhibitory potential of Thunbergia mysorensis leaves extract and bioactive compounds by in vitro and computational approach. *Journal of Biomolecular Structure and Dynamics*, 1-17. https://doi.org/10.1080/07391102.2023.2190408

9. **Siddegowda Kathrikenahalli Somashekarappa, Mahesh Basavaraju, Chamaraja Nelligere Arakeshwaraiah**, Roopa Kotthathi Papanna, Kumara Swamy Ningappa, Divakara Soorly Gopala, Jayarame Gowda (2023). Rapid Electrochemical Investigation of Gemfibrozil Using NiONPs/Multiwalled Carbon Nanotube Modified Carbon Paste Electrode: Analysis of Human Urine Sample and Antimicrobial Activity. *Chemistry Select*, *8*(48), e202302407.

10. **Bindhu, S**., Raj, V., Nanjundaswamy, S., Hemavathi, M., Sandeep, S., Renganathan, R. A., & Rai, V. R. (2023). Insight into the conformational analysis of 3-phenyl-N-(3-(trimethoxysilyl) propyl) prop-2-en-1-imine (PTP) as a biocidal

candidate: In-silico and quantum computational approach. Results in Chemistry, 5, 100685.

11. Surendra, D. M., **Chamaraja, N. A**., Yallappa, S., Bhavya, D. K., Joseph, S., Varma, R. S., & Patel, B. B. (2023). Efficacy of phytochemical-functionalized silver nanoparticles to control Flacherie and Sappe silkworm diseases in Bombyx mori L. larvae. Plant Nano Biology, 5, 100048.

12. Yaidikar, Lavanya, Pydiraju Kondrapu, Astha Mishra, Pramod Bhaskar Kumar, Arshad Ahmad, K. A. Shaima, **N. A. Chamaraja**, and Shubhangi Tripathi. (2023) "Screening and discovery of novel carbamate compounds for cancer therapy." *Journal of Cardiovascular Disease Research,* 678-697.

Journal Publications: 2022

1. Kokila, N. R., Mahesh, B., Ramu, R., Mruthunjaya, K., Bettadaiah, B. K., &Madhyastha, H. (2022). Inhibitory effect of gallic acid from Thunbergia mysorensis against α-glucosidase, α-amylase, aldose reductase and their interaction: Inhibition kinetics and molecular simulations. *Journal of Biomolecular Structure and Dynamics*, 1-17.

2. S.YallappaD.M.Surendra, **N.A.Chamaraja**, S.S.Godipurge,Synthesis and functionalization of silver ferrite (AgFe2O3) nanoparticles with l-methionine: In vivo toxicity studies against Drosophila melanogaster (Diptera: Drosophilidae), Results in Chemistry ,Vol-4, October-2022. https://doi.org/10.1016/j.rechem.2022.100565
3. K.P. Roopa, K. Keshavamurthy, **B.Mahesh,** K.P. Veena, B.S. Shankara , K. Basavaiah, Determination of Vardenafil in Pure and Dosage Forms by Spectrophotometry. ZhurnalPrikladnoiiSpektroskopii. 2022;89(4):599.https://doi.org/10.1007/s10812-022-01429-y
4. **N. A. Chamaraja&B. Mahesh** Design and Development of a Novel Reagent for the Spectrophotometric Assay of Phosphate in Water and Soil Samples, JSS Journal of Scientific studies, Vol.1, July-2022
5. **D.Kathyayani, B. Mahesh, N.A.Chamaraja,**B.S.Madhukar& D. Channe Gowda, Synthesis and structural characterization of elastin-based polypentapeptide/hydroxypropylmethylcellulose blend films: Assessment of miscibility, thermal stability and surface characteristics, Colloids and Surfaces A: Physicochemical and Engineering Aspects, Vol.649,June-2022. https://doi.org/10.1016/j.colsurfa.2022.129503
6. **N. A. Chamaraja**, **B. Mahesh**& N. D. Rekha, Green synthesis of Zn/Cu oxide nanoparticles by Verniciafordii seed extract: their photocatalytic activity toward industrial dye degradation and their biological activity, Inorganic and Nano-Metal Chemistry, May-2022. https://doi.org/10.1080/24701556.2022.2069123

7. Saligrama Mahesh Abhishek, Ningappa Kumara Swamy, Shivamurthy Ravindra Yashas, HarikaranahalliPuttaiahShivaraju&**NelligereArkeswaraiahChamaraja,** Soft-chemical synthesis and rational application of transition-metal tetrachalcogenide for LED-driven photocatalytic degradation of lomefloxacin in water, Journal of Materials Science: Materials in Electronics, April-2022. https://doi.org/10.1007/s10854-022-08193-x
8. Kavya H. V, Nithin K. S, Sachhidananda S, Kendagannaswamy B. K., **Chamaraja N. A*,** Optical, Electrical and Thermal Behaviors of $CaZnO_2$Nanofillers Loaded PVP-PVA Nanocomposite Thick Films, Polymer Science Series A, April,2022. https://doi.org/10.1134/S0965545X22200068
9. Kokila N R**, Mahesh B**, Roopa K P,Daruka Prasad B,Kalyanraj, Manjula S N, MrutunjayaK,Ramith Ram, Thunbergia mysorensis mediated Nano Silver Oxide for Enhanced Antibacterial, Antioxidant, Anticancer potential and in vitro Hemolysis Evaluation, Journal of Molecular Structure, 1255, 132455, May 2022, https://doi.org/10.1016/j.molstruc.2022.132455.
10. **B.Mahesh, D.Kathyayani,**D.Channe Gowda, AlinaSionkowska, Seeram Ramakrishna, Miscibility and thermal stability of synthetic glutamic acid comprising polypeptide with polyvinyl alcohol: Fabrication of nanofibrous electrospun membranes, Materials Chemistry and Physics, Vol. 281, 125847, April 2022, https://doi.org/10.1016/j.matchemphys.2022.125847.
11. Nasreen Taj M; B Daruka Prasad; Rama Rao Narapareddy; H Nagabhushana ; G. Ramakrishna; **B. Mahesh**; Sunanda Damini, PANI - Molybdate Nanocomposites: Structural, Morphological and Dielectric properties for the effective EMI Shielding Applications in X-Band, Applied Surface Science Advances, February 2022, Vol. 7, Pages 100203,https://doi.org/10.1016/j.apsadv.2021.100203.
12. Malini, S, Roy, A, Raj, K, Raju, K, Ali, I. H, **Mahesh, B,** Lee, S. S., Sensing beyond Senses: An Overview of Outstanding Strides in Architecting Nanopolymer-Enabled Sensors for Biomedical Applications, Polymers, 14(3), January 2022, https://doi.org/10.3390/polym14030601.
13. HattnaShivarudraiahVedhavathi; Ballur Prasanna Sanjay; **Mahesh Basavaraju**; BeejaganahalliSangameshwara Madhukar; Ningappa Kumara Swamy, Development of ciprofloxacin sensor using iron-doped graphitic carbon nitride as transducer matrix: Analysis of ciprofloxacin in blood samples, Journal of Electrochemical Science and Engineering (ISSN 1847-9286), Nov 2021, Page No.1-12, http://dx.doi.org/10.5599/jese.1112.

Journal Publications: 2021

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3. HV Kavya, KS Nithin, BK Kendagannaswamy, S Sachhidananda, **NA Chamaraja,** Optical Performance Appraisal of Mechanically Flexible and Visibly Clear PVP-PVA/Calcium doped Zirconium Oxide Nanocomposites for UV Shielding Applications, Optik, Volume 227, February 2021, 166008, https://doi.org/10.1016/j.ijleo.2020.166008.
4. B. Mahesh, D. Kathyayani, H.R. Lokesh, D. Channe Gowda, Alina Sionkowska, Insights into the miscibility characteristics of plastic-mimetic polypeptide with hydroxypropylmethylcellulose: Investigation of thermal degradability and intermolecular interactions, Colloids and Surfaces B: Biointerfaces, Vol. 205,May,2021, https://doi.org/10.1016/j.colsurfb.2021.111877.
5. Surendra DoddarasinakereMariswamy; Chandrashekar KagepuraThimmaiah ;Vasantha Kumar Basappachidananda; **Mahesh Basavaraju**; ChamarajaNelligereArkeswaraiah Antimicrobial Aqueous Extracts of Rubia cordifolia, Int. J. Pharm. Sci. Rev. Res., April 2021, 67(2), 174-184, http://dx.doi.org/10.47583/ijpsrr.2021.v67i02.028
6. N.A. Chamaraja, B. Mahesh, C.B. and Praveen Kumar, Colorimetric detection of chromium (VI) using peroxidase mimetic IONPs with 4- aminoantipyrene and 3-aminophenol as a chromogen, Environmental Nanotechnology, Monitoring & Management, Vol. 16, April, 2021, https://doi.org/10.1016/j.enmm.2021.100471
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9. Ramanath Prabhu, B. Roopashree, T. Jeevananda, Srilatha Rao, Kakarla Raghava Reddy, Anjanapura V. Raghu, Synthesis and corrosion resistance properties of novel conjugated polymer-$Cu_2Cl_4L_3$ composites, Materials Science for Energy Technologies, Vol 4 pg no. 92–99, January, 2021, https://doi.org/10.1016/j.mset.2021.01.001

Journal Publications: 2020

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2. Nanjundaswamy G S , Mahesh B , Channe Gowda D , Chamaraja N A & Gangadhar Angadi, Examination of miscibility characteristics of the synthetic

plastic-mimetic peptide with polyacrylamide: development of nonwoven mats by electrospinning, *Polymer-Plastics Technology and Materials,* Vol. 60, No. 4, 405–418, August, 2020, https://doi.org/10.1080/25740881.2020.1811322

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4. B. Mahesh , K.S. Siddegowda , N.A. Chamaraja , B. Roopashree , N. Kumara swamy , G.S. Nanjundaswamy, Zinc oxide Nanoparticles Supported on Multi-Walled Carbon Nanotube Modified Electrode for Electrochemical Sensing of a Fluoroquinolone Drug, Electroanalysis, Wiley USA, 32, 1–11, June, 2020, https://doi.org/10.1002/elan.202000010
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Journal Publications: 2019

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2. A.S. Santhosh, S. Sandeep, S.N. Kumara, J.S. Melo, N.A. Chamaraja, Fabrication of Potentiometric Glucose Biosensor Based on Two Variant Dimensions of Green Synthesized Silver Nanostructures as a Single Nanohybrid Compartment—A Green Approach, Sensor Letters, American Scientific Publishers, 17, 11, 2019. http://dx.doi.org/10.1166/sl.2019.4147
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Carbohydrate Polymers , Elsevier, 212,129-141, 2019. http://dx.doi.org/10.1016/j.carbpol.2019.02.042

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Journal Publications: 2018

1. K.S. Siddegowda, B. Mahesh, N. Kumaraswamy, Fabrication of copper oxide nanoparticles modified carbon paste electrode and its application in simultaneous electroanalysis of guanine, adenine and thymine, Sensors and Actuators A: Physical, Elsevier, 280, 277-286, 2018. https://doi.org/10.1016/j.sna.2018.07.049
2. G. S. Nanjundaswamy, B. Mahesh, D. Channe Gowda, Elastin-based polymer: synthesis, characterization and examination of its miscibility characteristics with poly(vinyl alcohol) and electrospinning of the miscible blends, Polymer International, Wiley Online Libraray, USA, 67,11, 2018. https://doi.org/10.1002/pi.5669
3. S. Sandeep, A.S. Santhosh, N. Kumara Swamy, G.S. Suresh, J.S. Melo, N.A. Chamaraja, Biosensor based on graphene nanoribbons/silver nanoparticle/polyphenol oxidase composite matrix on graphite electrode: Application in the analysis of catechol in green tea samples, New Journal of Chemistry, Royal Society of Chemistry, 42, 20, 2018.https://doi.org/10.1039/C8NJ02325E

Journal Publications: 2017

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3. G.R. Suman, S.G.Bubbly, S.B.Gudennavar, B. Roopashree, S. Muthu , V. Gayathri, N.M. Nanje Gowda, Structural investigation, spectroscopic and energy level studies of Schiff base: 2 [(3′-N-salicylidenephenyl) benzimidazole] using

experimental and DFT methods, Journal of Molecular structure, Elsevier, 1139, 2017. https://doi.org/10.1016/j.molstruc.2017.03.043

Journal Publications: 2016

1. B. Mahesh, G. S. Nanjundaswamy, D.Channe Gowda, Siddaramaiah, Investigation on miscibility behaviors of elastin-like polypentapeptide blends with polyvinyl alcohol in aqueous and solid state, Journal of Applied Polymer Science, Wiley online library, USA, 134,12, 2016. https://doi.org/10.1002/app.44624.

Journal Publications: 2015

1. K. Lokesh, S. HariPrasad, B. Roopashree, V. Gayathri, Synthesis, Characterization and Catalytic Activity of a Novel 2-(3'- aminophenyl) benzimidazoylPalladium(II) Complex, Current Catalysis, Bentham Science, 4, 2, 2015. https://doi.org/10.2174/2211544704666150508221808