

**CURRICULUM VITAE**

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Area of Expertise:	Analytical Chemistry Bioanalytical Methods Characterization of Polymers Chemical Kinetics Composites Conductive Polymers Electrochemistry Electromagnetic Methods Enzyme Kinetics Functional Polymers New Technologies in Polymer Chemistry Polymers and Their Applications Sensors

**PUBLICATIONS**

**A. Articles published in international peer-reviewed journals:**

- A1. "A Waterborne, Flexible, and Highly Conductive Silver Ink for Ultra-Rapid Fabrication of Epidermal Electronics", *Sensors*, 2025.
- A2. "Stretchable Strain Sensors for Real-Time Bladder Volume Monitoring", *ACS Applied Materials and Interfaces*, 2025.
- A3. "Accurate Detection of Cerebrospinal Fluid by DNA Aptamers Derived by Clinical Samples", *International Forum of Allergy and Rhinology*, 2025.
- A4. "Multimodal diagnosis of cerebrospinal fluid rhinorrhea: State of the art review and emerging concepts", *Laryngoscope Investigative Otolaryngology*, 2024.
- A5. "Chitosan Nanoparticles Loaded with Quercetin and Valproic Acid: A Novel Approach for Enhancing Antioxidant Activity against Oxidative Stress in the SH-SY5Y Human Neuroblastoma Cell Line", *Biomedicines*, 2024.
- A6. "Novel fluorescein isothiocyanate (FITC) cored PAMAM dendrimers as drug delivery agent", *International Journal of Polymeric Materials and Polymeric Biomaterials*, 2024.
- A7. "Electrochemistry Test Strip as Platform for In Situ Detection of Blood Levels of Antipsychotic Clozapine in Finger-Pricked Sample Volume", *Biosensors*, 2023.
- A8. "Folic acid conjugated PAMAM-modified mesoporous silica-coated superparamagnetic iron oxide nanoparticles for potential cancer therapy", *Journal of Colloid and Interface Science*, 2022.
- A9. "Polyamidoamine Dendron-Bearing Lipids as Drug-Delivery Excipients", *Molecules*, 2022.
- A10. "Polyelectrolyte Multilayers Composed of Polyethyleneimine-Grafted Chitosan and Polyacrylic Acid for Controlled-Drug-Delivery Applications", *Journal of Functional Biomaterials*, 2022.
- A11. "Lab-In-A-Syringe: A Novel Electrochemical Biosensor for On-Site and Real-Time Monitoring of Dopamine in Freely Behaving Mice", *ACS Sensors*, 2022.
- A12. "Surface Plasmon Resonance Identifies High-Affinity Binding of", *ACS Chemical Neuroscience*, 2022.

- A13. "Transdermal Electrochemical Monitoring of Glucose via High-Density Silicon Microneedle Array Patch", *Advanced Functional Materials*, 2022.
- A14. "Lab-in-a-pencil graphite: A 3D-printed microfluidic sensing platform for real-time measurement of antipsychotic clozapine level", *Lab on a Chip*, 2021.
- A15. "Microfluidic Electrochemical Sensor for Cerebrospinal Fluid and Blood Dopamine Detection in a Mouse Model of Parkinson's Disease", *Analytical Chemistry*, 2020.
- A16. "Vorinostat-loaded titanium oxide nanoparticles (anatase) induce G2/M cell cycle arrest in breast cancer cells via PALB2 upregulation", *3 Biotech*, 2020.
- A17. "Direct electricity production from Microalgae *Choricystis* sp. and investigation of the boron to enhance the electrogenic activity", *International Journal of Hydrogen Energy*, 2020.
- A18. "Controlled release of methylene blue from layer-by-layer assembled chitosan/polyacrylic acid", *International Journal of Polymeric Materials and Polymeric Biomaterials*, 2020.
- A19. "Enhanced electrochemical sensing performance by in situ electrocopolymerization of pyrrole and thiophene-grafted chitosan", *International Journal of Biological Macromolecules*, 2020.
- A20. "Recent progress in nanomaterial-based electrochemical and optical sensors for hypoxanthine and xanthine. A review", *Microchimica Acta*, 2019.
- A21. "Electrochemical DNA biosensors for label-free breast cancer gene marker detection", *Analytical and Bioanalytical Chemistry*, 2019.
- A22. "Gold microneedles fabricated by casting of gold ink used for urea sensing", *Materials Letters*, 2019.
- A23. "Construction of conducting polymer/cytochrome C/thylakoid membrane based photo-bioelectrochemical fuel cells generating high photocurrent via photosynthesis", *Biosensors and Bioelectronics*, 2018.
- A24. "Preparation and characterization of novel chitosan/zeolite scaffolds for bone tissue engineering applications", *International Journal of Polymeric Materials and Polymeric Biomaterials*, 2018.
- A25. "Design of amperometric urea biosensor based on self-assembled monolayer of cystamine/PAMAM-grafted MWCNT/Urease", *Sensors and Actuators, B: Chemical*, 2018.
- A26. "Light-dependent photocurrent generation: Novel electrochemical communication between biofilm and electrode by ferrocene cored Poly(amidoamine) dendrimers", *ELECTROCHIMICA ACTA*, 2018.
- A27. "An electrochemical immunosensor for sensitive detection of *Escherichia coli* O157:H7 by using chitosan, MWCNT, polypyrrole with gold nanoparticles hybrid sensing platform", *Food Chemistry*, 2017.
- A28. "Dendrimer functional hydroxyapatite nanoparticles generated by functionalization with siloxane-cored PAMAM dendrons", *Journal of Colloid and Interface Science*, 2017.
- A29. "Construction of ferrocene modified conducting polymer based amperometric urea biosensor", *Enzyme and Microbial Technology*, 2017.
- A30. "Novel electrochemical xanthine biosensor based on chitosan–polypyrrole–gold nanoparticles hybrid bio-nanocomposite platform", *Journal of Food and Drug Analysis*, 2017.
- A31. "Preparation and characterization of amine functional nano-hydroxyapatite/chitosan bionanocomposite for bone tissue engineering applications", *Carbohydrate Polymers*, 2017.
- A32. "Boronic Acid vs. Folic Acid: A Comparison of the bio-recognition performances by Impedimetric Cytosensors based on Ferrocene cored dendrimer", *Biosensors and Bioelectronics*, 2017.
- A33. "Novel Amperometric Xanthine Biosensors Based on REGO-NP (Pt, Pd, and Au) Bionanocomposite Film", *Food Analytical Methods*, 2017.
- A34. "Highly sensitive detection of cancer cells with an electrochemical cytosensor based on boronic acid functional polythiophene", *Biosensors and Bioelectronics*, 2017.
- A35. "CO gas sorption properties of ferrocene branched chitosan derivatives", *Sensors and Actuators, B: Chemical*, 2017.
- A36. "Novel impedimetric dopamine biosensor based on boronic acid functional polythiophene modified electrodes", *Materials Science and Engineering C*, 2017.
- A37. "Development of novel amperometric urea biosensor based on Fc-PAMAM and MWCNT bio-nanocomposite film", *Sensors and Actuators, B: Chemical*, 2017.
- A38. "Construction of novel electrochemical immunosensor for detection of prostate specific antigen using ferrocene-PAMAM dendrimers", *Biosensors and Bioelectronics*, 2016.
- A39. "Amperometric cholesterol biosensor based on reconstituted cholesterol oxidase on boronic acid functional conducting polymers", *Journal of Electroanalytical Chemistry*, 2016.
- A40. "Novel amperometric xanthine biosensor based on xanthine oxidase immobilized on electrochemically polymerized 10-[4H-dithieno(3,2-b:2',3'-d)pyrrole-4-yl]decane-1-amine film", *Sensors and Actuators, B: Chemical*, 2016.
- A41. "Construction of novel xanthine biosensor by using polymeric mediator/MWCNT nanocomposite layer for fish freshness detection", *Food Chemistry*, 2015.

- A42. "Development of glucose biosensor based on reconstitution of glucose oxidase onto polymeric redox mediator coated pencil graphite electrodes", *Enzyme and Microbial Technology*, 2015.
- A43. "Simple method for preparing glucose biosensor based on in-situ polypyrrole cross-linked chitosan/glucose oxidase/gold bionanocomposite film", *Materials Science and Engineering C*, 2015.
- A44. "Reversible immobilization of BSA on Cu-chelated PAMAM dendrimer modified iron oxide nanoparticles", *Applied Surface Science*, 2014.
- A45. "Grafted/ungrafted iron oxide and alginic acid-polyvinylimidazole nanocomposites: Synthesis and electrical properties", *Materials Research Bulletin*, 2013.
- A46. "Ferrocene incorporated PAMAM dendrons: Synthesis, characterization, and anti-cancer activity against AGS cell line", *Medicinal Chemistry Research*, 2013.
- A47. "Magnetic hydrogel with high coercivity", *Materials Research Bulletin*, 2013.
- A48. "Poly(glycidylmethacrylate-co-vinyl ferrocene)-grafted iron oxide nanoparticles as an electron transfer mediator for amperometric phenol detection", *Current Applied Physics*, 2013.
- A49. "Solubility enhancement of Non-Steroidal Anti-Inflammatory Drugs (NSAIDs) using polypolypropylene oxide core PAMAM dendrimers", *International Journal of Pharmaceutics*, 2013.
- A50. "Acid Functionalized Multiwall Carbon Nanotube/Magnetite (MWCNT)-COOH/Fe<sub>3</sub>O<sub>4</sub> Hybrid: Synthesis, Characterization and Conductivity Evaluation", *Journal of Inorganic and Organometallic Polymers and Materials*, 2013.
- A51. "Synthesis and Characterization of Multiwall-Carbon Nanotubes Decorated with Nickel Ferrite Hybrid", *Journal of Inorganic and Organometallic Polymers and Materials*, 2013.
- A52. "Fluorescence and magnetic properties of hydrogels containing Fe<sub>3</sub>O<sub>4</sub> nanoparticles", *Journal of Molecular Structure*, 2013.
- A53. "Magnetic and spectroscopic properties of Polyacrylamide-CoFe<sub>2</sub>O<sub>4</sub> magnetic hydrogel", *Journal of Molecular Structure*, 2013.
- A54. "Synthesis, electrical and magnetic characterization of polyacrylamide hydrogels including NiFe<sub>2</sub>O<sub>4</sub> nanoparticles", *Journal of Superconductivity and Novel Magnetism*, 2013.
- A55. "Reversible immobilization of invertase on cu-chelated: Polyvinylimidazole- grafted iron oxide nanoparticles", *Bioprocess and Biosystems Engineering*, 2013.
- A56. "Multiwall-carbon nanotube/cobalt ferrite hybrid: Synthesis, magnetic and conductivity characterization", *Current Applied Physics*, 2013.
- A57. "Development of Amperometric glucose biosensor based on reconstitution of glucose oxidase on polymeric 3-Aminophenyl Boronic Acid Monolayer", *Electroanalysis*, 2013.
- A58. "Potentiometric urea biosensor based on poly(glycidylmethacrylate)-grafted iron oxide nanoparticles", *Current Applied Physics*, 2013.
- A59. "Novel reagentless glucose biosensor based on ferrocene cored asymmetric PAMAM dendrimers", *Sensors and Actuators, B: Chemical*, 2013.
- A60. "A novel amperometric glucose biosensor based on reconstitution of glucose oxidase on thiophene-3-boronic acid polymer layer", *Current Applied Physics*, 2013.
- A61. "PAMAM type dendritic electrolytes for lithium ion battery applications", *Solid State Ionics*, 2012.
- A62. "Evaluation of Jeffamine®-cored PAMAM dendrimers as an efficient in vitro gene delivery system", *Journal of Biomedical Materials Research - Part A*, 2012.
- A63. "A novel amperometric phenol biosensor based on immobilized HRP on poly(glycidylmethacrylate)-grafted iron oxide nanoparticles for the determination of phenol derivatives", *Sensors and Actuators, B: Chemical*, 2012.
- A64. "Synthesis and characterization of Piperidine-4-carboxylic acid functionalized Fe<sub>3</sub>O<sub>4</sub> nanoparticles as a magnetic catalyst for Knoevenagel reaction", *Materials Research Bulletin*, 2012.
- A65. "Synthesis and characterization of polyvinylimidazole-grafted superparamagnetic iron oxide nanoparticles (Si-PVIm-grafted SPION)", *Journal of Nanoparticle Research*, 2012.
- A66. "A novel amperometric hydrogen peroxide biosensor based on pyrrole-PAMAM dendrimer modified gold electrode", *Current Applied Physics*, 2012.
- A67. "Novel amperometric glucose biosensor based on covalent immobilization of glucose oxidase on poly(pyrrole propylic acid)/Au nanocomposite", *Current Applied Physics*, 2012.
- A68. "Synthesis and characterization of poly(1-vinyltriazole)-grafted superparamagnetic iron oxide nanoparticles", *Synthetic Metals*, 2012.
- A69. "Development of a novel amperometric glucose biosensor based on copolymer of pyrrole-PAMAM dendrimers", *Synthetic Metals*, 2012.
- A70. "Amperometric hydrogen peroxide biosensor based on cobalt ferrite-chitosan nanocomposite", *Materials Science and Engineering C*, 2012.
- A71. "An amperometric urea biosensor based on covalent immobilization of urease on copolymer of glycidyl methacrylate and vinylferrocene", *Journal of Solid State Electrochemistry*, 2012.

- A72. "Synthesis, conductivity and magnetic properties of poly(N-pyrrole phosphonic acid)-Fe<sub>3</sub>O<sub>4</sub> nanocomposite", *Materials Chemistry and Physics*, 2011.
- A73. "Construction of reagentless glucose biosensor based on ferrocene conjugated polypyrrole", *Synthetic Metals*, 2011.
- A74. "Synthesis and characteristics of poly(3-pyrrol-1-ylpropanoic acid) (PPyAA)-Fe<sub>3</sub>O<sub>4</sub> nanocomposite", *Journal of Alloys and Compounds*, 2011.
- A75. "A novel thin film amperometric urea biosensor based on urease-immobilized on poly(N-glycidylpyrrole-co-pyrrole)", *Current Applied Physics*, 2011.
- A76. "A novel amperometric galactose biosensor based on galactose oxidase-poly(N-glycidylpyrrole-co-pyrrole)", *Synthetic Metals*, 2011.
- A77. "Entrapment of urease in poly(1-vinyl imidazole)/poly(2-acrylamido-2-methyl- 1-propanesulfonic acid) network", *Journal of Applied Polymer Science*, 2011.
- A78. "Development of an amperometric hydrogen peroxide biosensor based on the immobilization of horseradish peroxidase onto nickel ferrite nanoparticle-chitosan composite", *Nano-Micro Letters*, 2011.
- A79. "Amperometric hydrogen peroxide biosensor based on covalent immobilization of horseradish peroxidase on ferrocene containing polymeric mediator", *Sensors and Actuators, B: Chemical*, 2010.
- A80. "Immobilization of glucose oxidase on reagentless ferrocene-containing polythiophene derivative and its glucose sensing application", *Journal of Electroanalytical Chemistry*, 2010.
- A81. "Immobilization of urease in poly(1-vinyl imidazole)/poly(acrylic acid) network", *Chemical Papers*, 2010.
- A82. "Covalent immobilization of invertase on PAMAM-dendrimer modified superparamagnetic iron oxide nanoparticles", *Journal of Nanoparticle Research*, 2010.
- A83. "Construction of a novel glucose biosensor based on covalent immobilization of glucose oxidase on Poly(glycidyl methacrylate-co-vinylferrocene)", *Electroanalysis*, 2010.
- A84. "Synthesis, characterization and antimicrobial activity of water soluble dendritic macromolecules", *European Journal of Medicinal Chemistry*, 2009.
- A85. "A novel intrinsically proton conducting star-shaped imidazole terminated oligomers", *Ionics*, 2009.
- A86. "Dendritic polychelators: Synthesis, characterization, and metal ion binding properties", *Journal of Applied Polymer Science*, 2008.
- A87. "Raman, FT-IR, NMR spectroscopic data and antimicrobial activity of bis[μ<sub>2</sub>-(benzimidazol-2-yl)-2-ethanethiolato-N,S,S'-chloro-palladium(II)] dimer, [(μ<sub>2</sub>-CH<sub>2</sub>CH<sub>2</sub>NHNCC<sub>6</sub>H<sub>4</sub>)PdCl]<sub>2</sub>·C<sub>2</sub>H<sub>5</sub>OH complex", *European Journal of Medicinal Chemistry*, 2007.
- A88. "An investigation of the proton conductivities of hydrated poly(vinyl alcohol)/boric acid complex electrolytes", *Ionics*, 2007.

#### **D. Articles published in national peer-reviewed journals:**

- D1. "Applications of artificial neural network technique to polypyrrole gas sensor data for environmental analysis", *Journal of Computational and Theoretical Nanoscience*, 2015.
- D2. "Poly(GMA-co-VFc)/Fe<sub>3</sub>O<sub>4</sub>/cholesterol oxidase bionanocomposite based electrodes for amperometric cholesterol biosensor", *Sensor Letters*, 2014.
- D3. "Preparation and conductivities of polyacrylic acid/polyvinylimidazole grafted and ungrafted iron oxide nanocomposite polymer electrolytes", *Central European Journal of Chemistry*, 2013.
- D4. "Immobilization of urease on copper chelated EC-Tribeads and reversible adsorption", *African Journal of Biotechnology*, 2011.
- D5. "A novel amperometric hydrogen peroxide biosensor based on catalase immobilization on poly(glycidyl methacrylate-co-vinylferrocene)", *Analytical and Bioanalytical Electrochemistry*, 2011.
- D6. "Synthesis and proton conductivity of anhydrous dendritic electrolytes", *Central European Journal of Chemistry*, 2007.
- D7. "Low temperature synthesis and characterization of Mn<sub>3</sub>O<sub>4</sub> nanoparticles", *Central European Journal of Chemistry*, 2007.