



# THE TECHNICAL UNIVERSITY OF KENYA

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|                      |                                                                                |
|----------------------|--------------------------------------------------------------------------------|
| Faculty:             | Applied Sciences and Technology                                                |
| School:              | CHEMISTRY AND MATERIAL SCIENCE                                                 |
| Department:          | INDUSTRIAL AND APPLIED CHEMISTRY                                               |
| Current Designation: | Senior Lecturer, INDUSTRIAL AND APPLIED CHEMISTRY(DIAC)                        |
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| Consultation Hours:  | 8AM-5PM MON - FRI                                                              |



## EDUCATION

| LEVEL                        | QUALIFICATION NAME                     | INSTITUTION                                  | YEAR |
|------------------------------|----------------------------------------|----------------------------------------------|------|
| Doctor of Philosophy (PhD)   | CHEMISTRY                              | UNIVERSITY OF THE WESTERN CAPE(South Africa) | 2011 |
| Masters of Science (M.Sc.)   | CHEMISTRY                              | UNIVERSITY OF THE WESTERN CAPE(South Africa) | 2009 |
| Bachelor of Education (B.Ed) | MATHEMATICS AND CHEMISTRY              | KENYATTA UNIVERSITY(Kenya)                   | 2005 |
| KCPE/Equivalent              | KENYA CERTIFICATE OF PRIMARY EDUCATION | KALIINI PRIMARY SCHOOL(Kenya)                | 1995 |

## WORK EXPERIENCE

| PERIOD         | INSTITUTION                       | POSITION        |
|----------------|-----------------------------------|-----------------|
| 2016 - TO DATE | THE TECHNICAL UNIVERSITY OF KENYA | SENIOR LECTURER |
| 2012 - 2015    | KENYATTA UNIVERSITY-KITUI CAMPUS  | LECTURER        |

## SELECTED PUBLICATIONS

| TITLE                                                                                                                                                                                                                                                                                                                                 | LINK TO PUBLICATION         | YEAR |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------|
| Current Trends of Nanobiosensors for Point-of-Care Diagnostics                                                                                                                                                                                                                                                                        | <a href="#">View online</a> | 2019 |
| A silver nanoparticles-poly (8-anilino-1-naphthalene sulphonic acid) bioelectrochemical sensor system for the analytical determination of ethambutol, In V. Rajendra, B. Hillbrands, P. Prabu and K.E. Geckeler (eds.): Biomedical Applications of Nanostructured Materials, Macmillan Publishers India Limited, 2010, Pages 269-274. | <a href="#">View online</a> | 2011 |
| Nanocomposite materials for water purification: synthesis, characterization, and applications, In Ashutosh Kumar Shukla (eds.): Spectroscopy and Machine Learning for Water Quality Analysis, Institute of Physics publishers, Ewing Christian College, University of Allahabad, Prayagraj, India, chapter 4 pages 1 – 40.            | <a href="#">View online</a> | 2021 |
| Nanobiosensors and their Application in Medical Imaging, In Ashutosh Kumar Shukla: Medical Imaging Methods Theory and Applications, CRC Press, Boca Raton, chapter 6 eBook ISBN:9781003112068                                                                                                                                         | <a href="#">View online</a> | 2021 |
| Nanosensor arrays: Innovative approaches for medical diagnosis, In Suresh Kaushik, Vijay Soni, Efstathia Skotti: Nanosensors for Futuristic Smart and Intelligent Healthcare Systems CRC Press, Boca Raton, chapter 16 eBook ISBN: 9781003093534                                                                                      | <a href="#">View online</a> | 2022 |
| 1. Naumih M Noah and Peter M Ndangili (2023). Polymeric nanosystems for neurological therapeutics, in Md Saquib Hasnain, Amit Kumar Nayak, Tejrj M. Aminabhavi, Polymeric Nanosystems: Theranostic Nanosystems, academic press (an imprint of Elsevier)                                                                               | <a href="#">View online</a> | 2023 |
| Modulation of the interfacial electrochemistry of surfactant-functionalised polypyrrole chemical sensor systems                                                                                                                                                                                                                       | <a href="#">View online</a> | 2011 |
| Gallium-Induced Perturbation of Zinc Selenide Quantum Dots Electronics                                                                                                                                                                                                                                                                | <a href="#">View online</a> | 2017 |
| Optoelectronics of stoichiometrically controlled palladium telluride quantum dots                                                                                                                                                                                                                                                     | <a href="#">View online</a> | 2016 |
| Electronics of Conjugated Polymers (I): Polyaniline (A Review Paper                                                                                                                                                                                                                                                                   | <a href="#">View online</a> | 2012 |
| 3-Mercaptopropionic Acid Capped Ga <sub>2</sub> Se <sub>3</sub> nanocrystal-CYP3A4 Biosensor for the Determination of 17-Alpha-Ethinyl Estradiol in Water                                                                                                                                                                             | <a href="#">View online</a> | 2012 |
| 3-Mercaptopropionic acid capped ZnSe quantum dot-cytochrome P450 3A4 enzyme biotransducer for 17 beta-estradiol                                                                                                                                                                                                                       | <a href="#">View online</a> | 2011 |
| Ferrocenium hexafluorophosphateinduced nanofibrillarity of polyanilinepolyvinyl sulphonate electropolymer andapplication in an amperometric enzyme biosenso                                                                                                                                                                           | <a href="#">View online</a> | 2010 |
| Spectroelectrochemical Dynamics of Dendritic Poly (Propylene -Estradiol Biosensor, imine)-Polythiophene Star Copolymer Aptameric 17β-Estradiol Biosensor                                                                                                                                                                              | <a href="#">View online</a> | 2011 |
| A silver Nanoparticle/Poly (8-Anilino-1-Naphthalene Sulphonic Acid) Bioelectrochemical Biosensor System for the Analytical Determination of Ethambutol                                                                                                                                                                                | <a href="#">View online</a> | 2011 |
| Determination of Anthracene on Ag-Au Alloy Nanoparticles/Overoxidized-Polypyrrole Composite Modified Glassy Carbon Electrodes                                                                                                                                                                                                         | <a href="#">View online</a> | 2010 |
| Polyester Sulphonic Acid Interstitial Nanocomposite Platform for Peroxide Biosensor                                                                                                                                                                                                                                                   | <a href="#">View online</a> | 2009 |
| Functionalisation of polyaniline nanomaterials for amperometric biosensing, Nanostructured Materials for Electrochemical Biosensors,                                                                                                                                                                                                  | <a href="#">View online</a> | 2009 |
| Ultrasensitive immunosensor for multiplex detection of cancer biomarkers carcinoembryonic antigen (CEA) and yamaguchi sarcoma viral oncogene homolog 1 (YES1) based on eco-friendly synthesized gold nanoparticles                                                                                                                    | <a href="#">View online</a> | 2024 |
| Development Of Electrochemical Immunosensor for Quantitative Detection of Non-Small Cell Lung Cancer (NSCLC) Biomaker YES 1                                                                                                                                                                                                           | <a href="#">View online</a> | 2023 |
| Quantum Dot-Sensitised Estrogen Receptor-α-Based Biosensor for 17β-Estradiol                                                                                                                                                                                                                                                          | <a href="#">View online</a> | 2023 |
| Green synthesis of nanomaterials from sustainable materials for biosensors and drug delivery                                                                                                                                                                                                                                          | <a href="#">View online</a> | 2022 |
| Current Biosensors Used For Early Detection of Lung Cancer Biomarkers                                                                                                                                                                                                                                                                 | <a href="#">View online</a> | 2021 |
| Biomarkers: Promising Tools for Detection of Early- Stage-Lung Cancer                                                                                                                                                                                                                                                                 | <a href="#">View online</a> | 2021 |
| Nickel-Palladium-Based Electrochemical Sensor for Quantitative Detection of Formaldehyde                                                                                                                                                                                                                                              | <a href="#">View online</a> | 2018 |
| Evaluation of chemistry performance in secondary schools in nomadic pastoralist communities of Kajiado and Narok counties in Kenya                                                                                                                                                                                                    | <a href="#">View online</a> | 2020 |
| A Potential masking approach in the detection of dopamine on 3- mercaptopropionic acid capped ZnSe quantum dots modified gold electrode in the presence of interferences                                                                                                                                                              | <a href="#">View online</a> | 2010 |
| Impedimetric Response of a Label-Free Genosensor Prepared on a 3- Mercaptopropionic Acid Capped Gallium Selenide Nanocrystal Modified Gold Electrode                                                                                                                                                                                  | <a href="#">View online</a> | 2011 |
| Impedimetry and microscopy of electrosynthetic poly(propylene thiophenimine)-co-poly(3,4 ethylene dioxythiophene) dendritic star copolymer                                                                                                                                                                                            | <a href="#">View online</a> | 2011 |

# POSTGRADUATE STUDENTS SUPERVISION

| NAME                            | PROJECT TITLE                                                                                                                                         | PERIOD    |
|---------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| Nachaki Earnest Ojiambo         | Fabrication of Nickel-Palladium Based Electrochemical Nanosensor for Quantitative Detection of Formaldehyde in Water                                  | 2017-2019 |
| Abongile Nwabisa Jijana-        | The Fabrication of an electrochemical ZnSe quantum dot -CYP3A4 based biosensor for determination of 17-β-Estradiol (an Endocrine Disrupting Compound) | 2009-2010 |
| Waweru James Gitau              | Development of Hexadecylamine Capped Indium Telluride Quantum Dots Sensors for the Determination of Mammaglobin- A Breast Cancer Biomarker            | Ongoing   |
| Ezo Nxusani                     | GaSe quantum dots biosensor for the determination of 17-alpha ethinyl estradiol in water.                                                             | 2011-2012 |
| Muthimi Onesmus Muyalo          | Determination of Selected Poly-Aromatic Hydrocarbons in Roasted Maize in Kitui County, Kenya                                                          | Ongoing   |
| Dickson Moenga Hezron Onyangore | FORMULATION and in vitro ASSAY OF SILVER NANOPARTICLES-PENICILLIN CONJUGATES AGAINST Escherichia coli AND Staphylococcus aureus                       | 2019-2022 |
| Lucy Kiio                       | Fabrication of A Nanostructured Biosensor For Early Detection of Lung Cancer Biomaker Using Electrochemical Methods.                                  | 2019-2023 |