

## DEPARTMENT OF CHEMISTRY AND BIOCHEMISTRY



**Name of Faculty/Staff:** Dr. Emily C. Cheshari

**Designation/Rank:** Lecture

**Laikipia University:** School of Science and Applied Technology

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### **Educational Background:**

PhD (Chemical Engineering and Technology), Harbin Institute of Technology, China (2021)

Masters in. (Chemistry), Egerton University, Kenya (2007)

Bachelors of Education (science), Egerton University, Kenya (2002)

### **Brief Auto-biography of the Faculty/Staff**

Dr. Emily Cheshari is a Lecturer in the department of Chemistry and Biochemistry with over 10 years' experience in teaching and mentoring undergraduate students. She has carried out research in analytical chemistry with a specialty in analysis of pesticide residues. Dr. Cheshari has valuable experience in various analytical techniques which includes Gas Chromatography (GC), high performance liquid chromatography (HPLC) and surface enhanced Raman Spectroscopy (SERS).

### **Selected Publications**

1. **Cheshari C. Emily**, Ren, Xiaohui and Li Xin. Core-shell magnetic Ag-molecularly imprinted composite for surface enhanced Raman scattering detection of carbaryl, Journal of Environmental Science and Health, Part B, 2021, 56:3, 222-234 DOI: 10.1080/03601234.2020.1869476
2. **Cheshari C. Emily**, Ren, Xiaohui and Li Xin. Core-shell Ag-Dual Template Molecularly Imprinted Composite for Detection of Carbamate Pesticide Residues, Chemical Papers, 2021, 75(7), 3679-3693. DOI: 10.1007/s11696-021-01594-y
3. **Cheshari C. Emily**, Ren, Xiaohui and Li Xin. Core-Shell Ag-Molecularly Imprinted Composite for SERS Detection of Carbendazim, International Journal of Environmental Analytical Chemistry, 2020, 100:11, 1245-1258. DOI: 10.1080/03067319.2019.1651301
4. Xiaohui Ren, Ling Yang, Yuan chao Li, **Emily C.Cheshari**, Xin Li (2019): The integration of molecular imprinting and surface-enhanced Raman scattering for highly sensitive detection

- of lysozyme biomarker aided by density functional theory. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*. <https://doi.org/10.1016/j.saa.2019.117764>
5. Xiaohui Ren, **Emily C. Cheshari**<sup>1</sup>, Jingyao Qi, Xin Li (2018), Silver microspheres coated with a molecularly imprinted polymer as a SERS substrate for sensitive detection of bisphenol A. *Microchimica Acta* (2018) 185: 242. <https://doi.org/10.1007/s00604-018-2772-z>
  6. **Cheshari, E.**, Njang'iru, I., Kinuthia, E., Tenge J. and Maghanga J., Determination of the Quality of Drinking Water Around Laikipia University. **Journal of Science and Applied Technology (JSAT) 2** (1) 2015.
  7. Samuel Omboga, Barnabas K. Kurgat, **Emily C. Cheshari**, Moses K. Rotich, Ward J. Mavura. Determination of Major Ion Concentration and Ionic Strength of Saline Water: A Case Study of Lakes; Nakuru, Bogoria-Kenya and Nata Saltpan Sanctuary –Botswana *Journal of Natural Sciences Research* **4** (18) 2014
  8. **Emily C. Cheshari**, Vincent Sudoi, Ward J. Mavura and John K. Wanyoko.(2013) Determination of Residue Levels of Lambda-Cyhalothrin (Karate 1.75 EC) and Pre-Harvest Interval (PHI) on Tea in Kenya. **Journal of Science and Applied Technology (JSAT) 1** (1) 2013.
  9. Gichumbi, J. M, Maghanga J. K., **Cheshari, E.C.**, Ongulu, R. O. and Gichuki, J.G. Comparison of Chemical and Mineralogical Properties of Geophagic Materials from Taita and Mombasa, Kenya. **International Journal of Scientific and Engineering Research** **3** (10), October 2012
  10. **Emily C. Cheshari**, Vincent Sudoi, Ward. J. Mavura, John.K. Wanyoko (2012); Determination of Residue Levels of Natural Pyrethrin (Pyagro 4 E) and Pre-Harvest Interval (PHI) on Tea in Kenya. **International Journal for current Research** **4**, (05), 001-004, May 2012

## Research Interest

My research interest is on the use of modern techniques that employ new technologies in analytical chemistry and their application in solving environmental problems with special interest in pesticide residues and environmental remediation. This include development and synthesis of nanomaterials and molecularly imprinted polymers (MIPs) for use in environmental remediation.

In addition, I desire to part of the scientific community with a focus in improving the conditions for scientific research to create opportunities for the younger generation.