



# THE TECHNICAL UNIVERSITY OF KENYA

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NAME: DR PATRICK MUSYOKI SHEM

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 UTAH(United States)	2012
Masters of Science (M.Sc.)	ENVIRONMENTAL CHEMISTRY	UNIVERSITY OF NAIROBI(Kenya)	2005
Bachelor of Science (BSc)	CHEMISTRY	UNIVERSITY OF NAIROBI(Kenya)	2001
O level/Equivalent	KENYA CERTIFICATE OF SECONDARY EDUCATION	MATINYANI SECONDARY SCHOOL(Kenya)	1995
KCPE/Equivalent	KENYA CERTIFICATE OF PRIMARY EDUCATION	YUMBISYE(Kenya)	1991

## WORK EXPERIENCE

<b>PERIOD</b>	<b>INSTITUTION</b>	<b>POSITION</b>
2022 - Present	Technical University of Kenya	Senior Lecturer
JAN 2008 - JULY 2012	UNIVERSITY OF UTAH	GRADUATE ASSISTANT
AUG 2012 - AUG 2013	UNIVERSITY OF OREGON	POST DOCTORAL RESEARCH ASSOCIATE
01/10/2014 - 2022	TECHNICAL UNIVERSITY OF KENYA	LECTURER
2014 - 2014	DEDAN KIMATHI UNIVERSITY	LECTURER
2005 - 2006	KAPA OIL REFINERIES	ASSISTANT PRODUCTION MANAGER
2003 - 2005	ICIPE	RESEARCH ASSISTANT

#### GENERAL STATEMENT ON RESEARCH AREAS

I am interested in the synthesis and application of the materials in drug delivery, diagnostics, sensors, catalysis, environmental analysis and remediation. I am also interested in the toxicology of nanomaterials.

#### SELECTED PUBLICATIONS

TITLE	LINK TO PUBLICATION	YEAR
Sardar, R.; Shem, P.M.; Pecchia-Bekum, C.; Bjorge, N.S.; Shumaker-Parry, J.S. Single-step generation of fluorophore-encapsulated gold nanoparticle core-shell materials. Nanotechnology 2010, 21, 345603 (Journal cover article)	<a href="#">View online</a>	
Shem, P.M.; Sardar, R.; Shumaker-Parry, J.S. One-Step Synthesis of Phosphine-Stabilized Gold Nanoparticles Using the Mild Reducing Agent 9-BBN. Langmuir 2009, 25(23), 3279-13283	<a href="#">View online</a>	
Shem, P.M.; Shiundu, P.M.; Gikonyo, N.K.; Hassanali, A.; Saini, R.K. Release Kinetics of a Synthetic Tsetse Allomone Derived from Waterbuck Odour from a Tygon Silicon Dispenser under Laboratory and Semi Field Conditions. Am-Euras. J. Agric. & Environ. Sci. 2009, 6(6), 625-636	<a href="#">View online</a>	
Shem, P.M.; Sardar, R.; Shumaker-Parry, J.S. Soft Ligand Stabilized Gold Nanoparticles: Incorporation of Bipyridyls and Two-Dimensional Assembly. J. Colloid Interface Sci. 2014, 426, 107-116.	<a href="#">View online</a>	
Shem, P.M.; Sardar, R.; Shumaker-Parry, J.S. Soft Ligand Stabilized Gold Nanoparticles: Incorporation of Bipyridyls and Two-Dimensional Assembly. J. Colloid Interface Sci. 2014, 426, 107-116.	<a href="#">View online</a>	
Florence A. Opondo, Were L.L. Munyendo, Patrick M. Shem, Raphael O. Nyayieka Different approaches for quantification of the bioactive metastable thiosulfinates in garlic using a validated High Performance Liquid Chromatography method. International Journal of Biochemistry Research & Review. 2017, 18(2): 1-9	<a href="#">View online</a>	
Florence A. Opondo, Were L.L. Munyendo, Patrick M. Shem, Raphael O. Nyayieka. Different approaches for quantification of the bioactive metastable thiosulfinates in garlic using a validated High Performance Liquid Chromatography method.	<a href="#">View online</a>	
Geoffrey Otieno, Joab O. Onyango, James J. Owuor, Pauline W. Mbugua, Peter M. Ndingili, Fred. W. Sawenja, Simon O. Adede, Austin O. Aluoch and Patrick M. Shem. Evaluation of chemistry performance in secondary schools in nomadic pastoralist communities of Kajiado and Narok counties in Kenya. Journal of the Kenya Chemical Society 2020, 13(1): 28-35	<a href="#">View online</a>	
Patrick M. Shem, Geoffrey Otieno, Joab O. Onyango, James J. Owuor, Pauline W. Mbugua, Austin O. Aluoch. Chemical Security in Kenya: Efforts, Challenges and Opportunities in Academic Institutions and Chemical Industry. ACS Chemical Health & Safety. 2021, 28 (2) 112-118	<a href="#">View online</a>	
Marcelo Carneiro dos Santos, Patrick Musyoki Shem, Tanos Celmar Costa Franca, Rohan Perera and Victor Barros Correia. (2023). Assessment of the impact of chemical weapons disposal in the ocean according to international conventions. In Sangita Das, Sabu Thomas & Partha Pratim Das (Eds), Sensing of Deadly Toxic Chemical Warfare Agents, Nerve Agent Simulants, and their Toxicological Aspects (pp. 407 - 422). Elsevier Inc. Paperback ISBN: 9780323905534; eBook ISBN: 9780323906722.	<a href="#">View online</a>	2023

#### PROFESSIONAL AFFILIATIONS AND SOCIETIES

TITLE	INSTITUTION
MEMBER	American Chemical Society
MEMBER	Kenya - German Academic Exchange Service (DAAD) Scholars Association
MEMBER	Society for Applied Spectroscopy
MEMBER	Kenya Chemical Society