

CURRICULUM VITAE

A. PERSONAL DETAILS

NAME: PROF. TSANUO, Muniru Khamis
NATIONALITY: Kenyan
DATE OF BIRTH: 20th December, 1961
GENDER: Male
ADDRESS: PWANI UNIVERSITY
P.O. Box 195, KILIFI, Kenya.
Tel: +254-041-7522498

B. HIGHER EDUCATION

Name of Institution (in Kenya)	Years Attended		Degree/Certificate
	From	To	Awarded
Jomo Kenyatta University of Agriculture & Technology	1997	2002	Ph.D (Chemistry)
Kenyatta University	1990	1993	M.Sc. (Chemistry)
Kenyatta University	1985	1988	B.Ed. (Science)

C. PROFESSIONAL EXPERIENCE

June, 2009 to Present: Associate Professor of Chemistry, Pwani University
July-2003 to May, 2009: Senior Lecturer, Jomo Kenyatta University of Agriculture and
Technology (JKUAT).
July, 2001-April, 2002: Research Associate (Trainee) at the International Centre

of Insect Physiology and Ecology
 Dec., 1995-Nov., 1995: Lecturer & B.Sc Chemistry Third Year Student Academic
 June 2003: Advisor. JKUAT,
 Oct., 1993 - Nov. 1995: Assistant Lecturer, JKUAT
 July, 1992-Sept., 1993: Teaching Assistant, JKUAT
 May 1988 – June.1992: Graduate Teacher, Teachers' Service Commission, Kenya,

D. ADMINISTRATIVE RESPONSIBILITIES

9. 14th July 2013 To Present Deputy Vice Chancellor (Research and Extension),
Pwani University
8. 30th January 2013 to 13 July 2013 Ag. Deputy Vice Chancellor (Academic Affairs),
Pwani University
7. Sept 2012 to 29th January 2013: Ag Deputy Principal (Academic Affairs), Pwani
University College
6. August, 2009 to Present: Dean, School of Pure and Applied Sciences, Pwani
University College,
5. August 2006 to May, 2009: Chairman, Chemistry Department (JKUAT),
4. 2003-2005: Visiting Scientist, (ICIPE)
3. 2003-2006: Co-ordinator and Academic Advisor to M.Sc. Class
2. 2004: Chemistry Department Examination Officer,
JKUAT
1. 2005-2006: Alternative Degree Programme Co-ordinator,
Chemistry Department, JKUAT

E. OTHER UNIVERSITY RESPONSIBILITIES

7. 2013 Chair, Pwani University Senate Committee to develop Examination
Policy

6. 2013: Chair, Pwani University Senate Committee to develop the Pwani University Statutes
- 5.2012: Chair, Pwani University Senate Committee that developed the Pwani University Charter
4. 2012: Chair, Pwani University Academic Board Committee that developed Staff Training Policy
3. 2011: Member, Pwani University Academic Board Committee that developed the Staff Appraisal, Appointment and Promotion Criteria for: (a) Academic, and (b) Non-Academic Staff
2. 2011: Member, Pwani University Academic Board Committee that developed the Curriculum Development Policy.
1. 2010: Member, Pwani University Academic Board Committee that developed the Pwani University Strategic Plan

F. CURRENT RESEARCH INTERESTS

Parasitic weeds: Interaction between the parasitic plant weed, striga, with the host and non-host plants in searching for the control of the weed.

Natural Products: Bio-prospecting for bioactive natural products from plants and micro-organism

Environmental Chemistry: Qualitative and quantitative analysis of environmental pollutants such as herbicides and heavy metals on soils, flora and fauna.

G. RESEARCH AWARDS

Year	Institution	Research Title	Role	Funding Agency	Cost (Ksh)
2001-2002	ICIPE	Studies on Silver-leaf (<i>D. uncinatum</i>) effect on Striga in a maize-silver leaf intercrop	Research Associate	Rockefeller	--
2003-2006	JKUAT	Impact of mining and other human activities on Lake Victoria Wetlands	Co-Investigator	VicRes	1,105,000 (US\$13,000)

2007-2009	JKUAT	Antibiotic and enzyme producing actinomycetes	Co-Investigator	RPE-JKUAT	2,100,000
2007-2009	JKUAT	Characterization of carbamate degrading aerobic bacteria isolated from selected horticultural soils in rift valley and central Kenya	Co-Investigator	RPE-JKUAT	1,880,000
2011-2014	Pwani University	Intergrating <i>HypisSpecigera</i> , Cowpea (<i>VignaUnguolata</i>) And Striga Resistant/Tolerant Maize (<i>Zea Mays</i>) For The Control Of <i>StrigaAsiatica</i>	Principal Investigator	NCST	6,030,000

G. STUDY AWARDS RECEIVED

2002: Rockefeller funded two months research visit to Rothamsted Research, UK.

2000: Rockefeller funded three months fellowship to undertake chromatographic, spectral data acquisition and analysis of *Desmodium uncinatum* root exudate at the IACR-Rothamsted, UK.

1997: DAAD scholarship to undertake PhD studies at JKUAT

1989: Government of Kenya Scholarship to undertake MSc studies at Kenyatta University.

H. STUDENT SUPERVISION

1. Undergraduate

S/No	Name (Registration Number)	Research Project Title	Year
1	MINYATI, Isaac Machira	Bioassay Guided Chromatographic Isolation of Bioactive Alkaloids from <i>Fagara chalybea</i>	2004
2	AMUKHOYE, K. Away	Studies on Strigaallelochemicals from <i>Mondia whytei</i>	2004
3	KEMBOI, Priscah Jerotich	Studies on Bioactive Components from the Stem bark of <i>Fagara chalybea</i>	2004
4	KEMEI, Maxwell Kipruto	Determination of mineral Composition of some Selected root tubers from Gachororo	2005

5	GITHUI, Lawrence Kariuki	Market Anti-Bacterial and Phytochemical Investigation of <i>Fagara chalybea</i>	2006
6	KITUI, M Isaac	Determination of Heavy Metals in Selected Commercially Available Fruit Juices	2006
7	GACHANJA, Lucy	Heavy metal Analysis of Wimbi Porridge Flour Sold at Thika Supermarkets	2007
8	SHIKORIRE, Tom Justus	Phytochemical and Anti-Bacterial Activity of the Medicinal Plant <i>Withania somnifera</i>	2008
9	OCHIENG, Josiah Odhiambo	Studies of Anti-helminthic Properties of leaf extract of Medicinal Plant <i>Withania somnia</i>	2008
10	ICHENIHI, Lizzy Ayieko	Analysis of 2-hydroxy-4- methoxybenzaldehyde in <i>Mondia whytei</i> (Hook.F) Asclepiadaceae	2008

2. Postgraduates

(a) Completed Research

	Student Name	Title of Thesis (Degree)	Registering University (Year)	Year Completed
1	David Kamanda Ngugi	Isolation, Characterization and Identification of bacteria from the Intestinal tract of termite capable of degrading mono-aromatic compounds (MSc, Microbiology)	Jomo Kenyatta University of Agriculture and Technology (2002)	2004
2	Denis Wafula	The Contribution of Different Feeding Guilds of Termites to Nutrient Cycling (MSc, Microbiology)	Jomo Kenyatta University of Agriculture and Technology (2002)	2004
3	Paul NjihiaGichuhi	Nutritional Evaluation and validation of the root powder of <i>Mondia whytei</i> (MSc, Chemistry)	Jomo Kenyatta University of Agriculture and Technology (2003)	2005
4	Sammy Mwiti	Comparison of the Biological Effects and Chemistry of Soybean	Egerton University	2005

		and Desmodium root exudates and extracts (MSc, Chemistry)	(2003)	
5	Salome Guchu	Studies on Desmodium species for the Allelochemicals involved in Striga suppression (PhD, Chemistry)	University of Nairobi (2004)	2007
6	Joseph Kimei	Studies on germination stimulation of selected plants from Labiateae family (MSc, Biochemistry)	Egerton University (2003)	2007
7	Hellen Akoth	MSc (Microbiology)	JKUAT (2005)	2007
8	Phyllis Njeri	Phytoremediation of heavy metals by selected plants (MSc, Chemistry)	JKUAT (2005)	2008
9	Kinuthia Mwangi	Effects of Dichlorodiphenyl Trichloroethane, DDT, on Microbial diversity and exploring Potential for Bioremediation by Soil Micro organism (MSc, Microbiology)	JKUAT (2006)	2009
10	Razafindranaivo Victor	The nymphal aggregation pheromone of Malagasy migratory locust, <i>Locusta migratoria</i> capito Saussure, 1984 (Orthoptera: Acrididae) and its effects on adult maturation and oviposition (PhD, Chemical Ecology)	JKUAT (2006)	2011
11	Allan Kevin Mbogo	Characterisation of carbamate degrading aerobic bacteria isolated from selected horticultural soils in rift valley and central Kenya (MSc, Microbiology)	JKUAT (2008)	2011
	Bahati Abdallah	Integrating Resistant Maize Variety and Legume Cover Crop in the Control of <i>Striga asiatica</i> in Coastal	Pwani University (2011)	2015

(b) On going Research Supervision

1	Chigodi, Omar Mwandago	Isolation and Characterization of Active Anti-pulmonic compounds of <i>Acacia stuhmannii</i> (MSc, Chemistry)	Pwani University (2011)	On going (Thesis writing)
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I. BOOKLETS

Tsanuo, M.K. (1993): Bioassay guided isolation and structural Elucidation of Anti-feeding of insect anti-feedants from the East African medicinal plant, *Elaeodendron buchananii*. MSc Thesis. Kenyatta University.

Tsanuo, M.K. (2002): Isolation of *Striga hermonthica* haustorium growth inhibitors from *Desmodium uncinatum* (a fodder legume). PhD Thesis. Jomo Kenyatta University of Agriculture and Technology.

J. PUBLICATION

18. Abdallah, B., Saha, H.M., **Tsanuo, M.K.** (2015a) Integrating striga resistant maize and spatial arrangement of intercropped cowpea in the control of *Striga asiatica*.

International Journal of Agronomy and Agricultural Research. 7(6): 25-53

17. Abdallah, B., Saha H.M., and **Tsanuo, M.K.** (2015b) Control of *Striga asiatica* through the Integration of Legume Cover Crops and Striga Resistant Maize. *Int. J. Pure Appl. Sci. Technol.*, 29(1): 42-53

16. Ogot, H.A., Boga, H.I., Budanbula, N., Tsanuo, M., Andika, D.O., Ogola, H.J. (2013).

Isolation, characterization and identification of roundup degrading bacteria from the soil and gut of *Macrotermes michelseni*. *International Journal of Microbiology and Mycology* 1:31-38

15. Omolo, K. M., Magoma, G., Ngamau, K., **Muniru, T** (2012). Characterization of methomyl

- and carbofuran degrading-bacteria from soils of horticultural farms in Rift Valley and Central Kenya .*African Journal of Environmental Science and Technology*.**5**:104-116,
14. Hooper, A.M., **Tsanuo, M.K.**, Chamberlain, K., Tittcomb, K., Scholes, J., Hassanali, A., Khan, Z. and Pckett, J.A. (2010). Isoschaftoside, a C-glycosylflavonoid from *Desmodium uncinatum* root exudates, is an allelochemical against the development of *Striga*. *Phytochemistry*, **71**:904-908
 13. Mwangi, K., Boga, H.I, Muigai, A.W., Kiiyukia, C. and **Tsanuo, M.K.** (2010). Degradation of dichlorodiphenyltrichloroethane (DDT) by bacterial isolates from cultivated and uncultivated soil. *African Journal of Microbiology Research*,**4**:185-196,
 12. Njeri, P., **Tsanuo, M.K.**, Chacha, J.S., Oyaro, N. (2009). The potential of *Commelina bengalensis*, *Amaranthus hybridus*, *Zea maiys*, for Phytoremediation of heavy metals from Contaminated soils. *Sains Malasiana*, **38**: 61-68
 11. Gichuhi P. N., Akeng'a, T., **Tsanuo, M.**, Nyagah, G., Kavaka, W. (2008). Nutritional Evaluation and Validation of *Mondia Whytei* (Hooks .F.) Skeels Asclepiadaceae Growing in Western Kenya. *Journal of the Kenya Chemical Society***5**: 25-42
 10. Boga H.I., Okemo P.O., Mwatha W.E., Muthanga J., **Tsanuo M.K.** and Ikingura, J.R. (2007) Heavy metal tolerance and antibiotic resistance profiles of gram-negative bacteria isolated from Lake Victoria, Kenya. *J. Trop. Microbiol.Biotechnol.***3**: 20-26
 9. Guchu, S.M., Yenesew, A, **Tsanuo, M.K.**, Gikonyo, N. K., Pickett, J. A., Hooper. A. M., Hassanali, A. (2007). C-methylated and C-prenylated Isoflavonoids from Root Extract of *Desmodium uncinatum*, *Phytochemistry*, **68**: 646-651
 8. Ngugi, D. K., **Tsanuo, M.K.** and Boga, H.I. (2007) Benzoic acid-degrading bacteria from the intestinal tract of *Macrotermes michaelseni* Sjösted. *Journal of Basic Microbiology*, **47**: 87-92
 7. Ngugi, D. K., **Tsanuo, M.K.** and Boga, H.I. (2005) *Rhodococcus opacus* strain RW, a resorcinol-degrading bacterium from the gut of *Macrotermes michelseni*. *African Journal of Biotechnology*, **4**: 639-645
 6. **Tsanuo, M.K.**, Hassanali, A., Hooper,A.M., ,Z.R., Kaberia, F., Pickett J.A. and Wadhams, L. J (2003). Isoflavanones from the Allelopathic Aqueous Root Exudate of

Desmodium uncinatum. *Phytochemistry*, 64: 265-273

5. Khan, Z.R., Hassanali, A., **Tsanuo, M.K.**, Overholt, W.A., Hooper, A.M., Pickett, J.A., Wadhams, L.J., Woodcock, C.M. (2002) Control of the witch-weed *Striga hermonthica* by intercropping with *Desmodium* spp., and the mechanism defined as allelopathic. *Journal of Chemical Ecology* **28** :1871-1885
4. Khan, Z. R., Hassanali, A., **Khamis, M.T.**, Pickett, J.A. and Wadhams, L. (2001) Mechanism of *Striga hermonthica* suppression by *Desmodium* spp. The BCPC Conference-Weeds, pp 895-900
3. Khan, Z. R., Hassanali, A., **Khamis, M.T.**, Pickett, J.A. and Wadhams, L. (2001) Mechanism of *Striga hermonthica* suppression by *Desmodium uncinatum* in Maize-based farming system. In : (Thalouarn, Fer, A., Joel, P., Musselman, L.J., Parker, C. and Verkleij, J.A.C. eds) Proceedings of the 7th International Parasitic Weed Symposium, Nantes, France, Jun 2001. pp 307
2. Hassanali, A., Hooper, A.M., **Khamis, M.T.**, Khan, Z.R., Pickett, J.A. and Wadhams, L.J. (2000). *Striga* control by intercropping with *Desmodium* species. *Haustorium*, **37**: 1-2.
1. **Tsanuo, M. K.**, Hassanali, A., Jondiko, I. J. O. and Torto, B. (1993). Mutangin, a Dihydroagarofuranoid sesquiterpene insect Antifeedant from *Elaeodendron buchananii*. *Phytochemistry*, 34: 665 - 667

K. CONFERENCE/WORKSHOP PRESENTATION

13. **Tsanuo, M.K.**, Hooper, A.M., Chamberlain, K., Tittcomb, K., Scholes, J., Hassanali, A, Khan, Z. and Pickett, J.A. (2011). Isoschaftoside, a C-glycosylflavonoid from *Desmodium uncinatum* root exudates, is radical growth inhibitor. 11th Work-Shop on Sustainable Horticultural Production in the Tropics. Pwani University College, Kilifi Kenya, 7th-10thDecember, 2011.
12. Guchu, S.M., Yenesew, A., **Tsanuo, M.K.**, Gikonyo, N.K., Hooper, A. and Hassanali, A (2007). Constituents of the Allelopathic Root Extracts of *Desmodium* species Involved in

Suppression of Parasitic Weed *Striga Hermonthica*. 2007 JKUAT Scientific, Technological and Industrialization Conference. 25th-26th October, 2007.

11. **Tsanuo, M.K.**, Kemmey, J.K., Onek, L.A. (2007). *Striga* seed germination by *Hyptis specigera* and *Ocimum bacilicum* (Labiatae). The Seventh Workshop on Sustainable Horticulture in the Cultural Production in the Tropics held at the Faculty of Agriculture, University of Nairobi, 28th November-1st December, 2007.
10. Murago, E.N.M, Oyaro, N. Gachanja, A.N., **Tsanuo, M.K.**, Anam, O.O, Mawili, F.M. (2007). Determination of the quantity of the active ingredients in pain killers using GC-MS. Joint East and Southern Africa Environmental Chemistry (ESAEECC) and Theoretical Chemistry Conference in Africa (TCCA), Elephant Hills Resort, Victoria Falls, Zimbabwe, 3-7 December, 2007
9. Oyaro, N., Kimenyu, P.N., Chacha, J.S., **Tsanuo, M.K.** (2007). Phytoremediation of heavy metal from contaminated soils. Joint East and Southern Africa Environmental Chemistry (ESAEECC) and Theoretical Chemistry Conference in Africa (TCCA), Elephant Hills Resort, Victoria Falls, Zimbabwe, 3-7 December, 2007.
8. **Tsanuo, M.K.**, Hassanali, A., Hooper, T. M., Khan, Z.R., Pickett, J.A., Kaberia, F. and Wadhams, L (2002) *Striga*-affecting semiochemicals associated with root exudates of *Desmodium uncinatum*. In: De Vries, J Mwaura, F. M. and Woomer, P.L.(eds) Biotechnology, Breeding and seed Systems for African Crops. Research and Product Development that Reaches Farmers. A conference organized by the Rockefeller Foundation and CO-hosted by The Uganda National Agricultural research Organization (NARO) at the Royal Botanical Beach Hotel, Entebbe, Uganda from 4 to 7 November 2002.
7. Hassanali, A, **Muniru, T.K.**, Hooper, A.M., khan, Z.R., Kaberia, F., pickett, J.A. amd L.J. Wadhams (2002). Allelochemical mechanism and chemistry of desmodium root exudate: Status of Research. In: De Vries, J Mwaura, F. M. and Woomer, P.L.(eds) Biotechnology, Breeding and seed Systems for African Crops. Research and Product Development that Reaches Farmers. A conference organized by the Rockefeller Foundation and CO-hosted by

The Uganda National Agricultural research Organization (NARO) at the Royal Botanical Beach Hotel, Entebbe, Uganda from 4 to 7 November 2002.

6. Khan, Z.R., Hassanali, A., Overholt, W., **Khamis, T.M.**, Pickett, J.A. and L.J. Wadhams (2002) Control of the witchweed *Striga hermonthica* by intercropping with *Desmodium* spp. In: De Vries, J Mwaura, F. M. and Woomeer, P.L.(eds) Biotechnology, Breeding and seed Systems for African Crops. Research and Product Development that Reaches Farmers. A conference organized by the Rockefeller Foundation and CO-hosted by The Uganda National Agricultural research Organization (NARO) at the Royal Botanical Beach Hotel, Entebbe, Uganda from 4 to 7 November 2002.
5. Pickett, J.A., Khan, Z.R., Overholt, W., **Khamis, T.M.**, Hooper, A.M., Wadhams, L.J. and C.M. Woodcock (2002). Synthesis and biogenesis of compounds putatively associated with *Striga hermonthica* suppression by *Desmodium uncinatum*. In: De Vries, J Mwaura, F. M. and Woomeer, P.L.(eds) Biotechnology, Breeding and seed Systems for African Crops. Research and Product Development that Reaches Farmers. A conference organized by the Rockefeller Foundation and CO-hosted by The Uganda National Agricultural research Organization (NARO) at the Royal Botanical Beach Hotel, Entebbe, Uganda from 4 to 7 November 2002.
3. **Tsanuo, M. K.**, Hassanali, A., Kaberia, F., Khan, Z. and Pickett, J. (1999). *Striga hermonthica* (witchweed) germination stimulants from *Desmodium uncinatum* (silver leaf) roots. The 3rd Kenya Chemical Society International Conference. Jomo Kenyatta University of Agriculture and Technology, 16th-20th August, 1999.
2. **Tsanuo, M.K.**, Hassanali, A. and Jondiko, I. (1994). Chromatographic Isolation and Structure Elucidation of Mutangin, a sesquiterpenoid anti-feedant, from *Elaeodendron buchananii*. Jomo Kenyatta University of Agriculture and Technology, October, 1994.
1. **Tsanuo, M.K.** (1993) Bioassay Guided Isolation and Structural Elucidation of Anti-feeding Compounds against *Chiloptellus* (Swinhoe) in fruits of *Elaeodendron buchananii*. L. Kenyatta University Post-Graduate Seminar, November, 1993,

L. MANAGEMENT COURSE/SEMINAR ATTENDANCE

15. ISO 9001:2015 Quality Management System Internal Auditors Training Course By Bureue Veritas, 27th-28th January, 2016. Pwani University.
14. Leadership and Change Management by Q-Point. 3rd-5th November, 2015. Mombasa
13. Resource Mobilization, Business Plan and Strategy by FUNZOKENYA. 20-24th April, 2015. Naivasha
12. Intergrity Assurance Officers Course By Kenya School of Government, 23rd-27th March, 2015. Nairobi
11. Curriculum Review Stakeholders Meeting 20th January, 2014. Pwani University, Kilifi Kenya
10. (Dis)ability, Participation and Community Involvement Tracing the Roots of CBR. By Pwani University College & Technical University of Munich 2nd-3rd December 2013. Pwani University College, Kilifi Kenya.
9. Negotiation Skills Training Programme for Pwani University College, FKE, 14th - 16thFebruary, 2012
8. Impact of Social Change: UN Convection on the Rights of Persons with Disabilities (UNCRPD) as Trigger? Pwani University College-Max Plank Institute of Foreign and International Law. Pwani University College, Kilifi 16th -17th June, 2011
8. Management Workshop "Tools for Leadership" By Pwani University College & Technical University of Munich. 28th September-1st October, 2010. Pwani University College, Kilifi Kenya.
7. Sustainable Resource Management Workshop By Pwani University College & Technical University of Munich, 19th August to 2nd September, 2009. Pwani University College, Kilifi Kenya.
6. Leadership, Management Capacity Development Training, KIM, 13th -16th February, 2008
5. Budgeting and Procurement Course, KIM, 28th -30th July, 2008

4. Growing Business through Technology, A technology Conference, JKUAT-Kenya Gatsby Trust, JKUAT Kenya, 26th -27th June, 2007
3. Training of Trainers Course, KBS, , Nairobi Kenya, 8th – 9th May, 2007
2. Implementation of ISO 9001-2000, KBS, Nairobi Kenya, 2nd-4th May, 2007
- 1.Sensitization Seminar on Public Procurement and Disposal Act, 2005 and Public Procurement and Disposal Regulations, 2006, PPOA, held at Nairobi Kenya, 2nd April, 2007

M. PROFESSIONAL ASSOCIATION

Member of (a) the Kenya Chemical Society, (b) NAPRECA (Kenya)

N. REFEREES

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