

## CURRICULUM VITAE

### A. PERSONAL DETAILS

SURNAME: **TSANUO**

OTHERS NAMES: Muniru Khamis

NATIONALITY: Kenyan

DATE OF BIRTH: 20<sup>th</sup> December, 1961

GENDER: Male

MARITAL STATUS: Married

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### B. ACADEMIC PROFILE

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). Teaching and supervision of undergraduate and post graduate students and undertaking natural products research.

July, 2001-April, 2002. Research Associate (Trainee) at the International Centre of Insect Physiology and Ecology working on isolation of *Striga hermonthica* haustorium growth inhibitors from *Desmodium uncinatum* (a fodder legume)

March, 1997-Aug., 2001. Dissertation Research Internship Programme

(DRIP) Ph.D student at the International Centre of Insect

Physiology and Ecology, ICIPE, (on study leave from JKUAT)

Dec., 1995-Nov., June 2003. Lecturer at JKUAT, teaching undergraduate organic chemistry. Teaching and supervising undergraduate organic chemistry practicals. Third year B.Sc chemistry student academic advisor. Conducting research on bioactive natural products.

Oct., 1993 - Nov. 1995. Worked as an Assistant Lecturer at JKUAT - teaching undergraduate Organic Chemistry.

July, 1992-Sept., 1993. Teaching assistance at JKUAT assisting in conducting undergraduate practicals, teaching diploma students and undertaking supervised marking of undergraduate chemistry practicals.

Jan., 1990-Feb., 1992. M.Sc (Chemistry) student at Kenyatta University on course/thesis programme (on study leave from Teachers Service

Commission, TSC).

Attached at ICIPE for thesis research on bioassay guided isolation

and structural Elucidation of Anti-feeding of insect antifeedants

from the East African medicinal plant, *Elaeodendron buchananii*.

May 1988 – Dec.1989. Worked as a Graduate Teacher with the

Teachers' Service Commission in Kenya, teaching Chemistry and

Physics at Secondary School "Ordinary Level"

#### **D. AWARDS RECEIVED**

2002: Rockefeller funded two months research visit to Rothamsted

Research, UK.

2000: Rockefeller funded three months fellowship to under take

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.

#### **E. POSTGRADUATES SUPERVISION**

##### **(a) Completed Research**

	<b>Student Name</b>	<b>Title of Thesis (Degree)</b>	<b>Registering University (Year)</b>	<b>Year Completed</b>
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 Njihia Gichuhi	Nutritional Evaluation and validation of the root powder of <i>Mondia whyei</i> (MSc, Chemistry)	Jomo Kenyatta University of Agriculture and Technology (2003)	2005
4	Sammy Mwiti	Comparison of the Biological Effects and Chemistry of Soybean and Desmodium root exudates and extracts (MSc, Chemistry)	Egerton University (2003)	2005
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 nigratoria capito</i>	JKUAT (2006)	2011

Saussure,1984)(Orthoptera:Acrididae)  
nd its effects on adult maturation and  
oviposition (PhD, Chemical Ecology)

- |    |                   |   |              |      |
|----|-------------------|---|--------------|------|
| 11 | Allan Kevin Mbogo | Characterisation of carbamate degrading aerobic bacteria isolated from selected horticultural soils in rift valley and central Kenya<br><br>(MSc, Microbiology) | JKUAT (2008) | 2011 |
|----|-------------------|---|--------------|------|

**(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 | 2012 |
| 2 | Bahati Abdallah        | Intergrating Resistant Maize Variety and Legume Cover Crop in the Control of <i>Striga asiatica</i> in Coastal Lowland Kenya | Pwani University | 2012 |

**F. BOOKLETS**

Tsanuo, M.K. (1993). Bioassay guided isolation and structural Elucidation of Anti-feeding of insect antifeedants 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.

## G. ADMINISTRATIVE RESPONSIBILITIES

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

## H. PUBLICATION

17. Ogot, H. A., Boga, H.I., Budambula, N., **Tsanuo, M.**, Andika, D. Otiato (2013b) Isolation, characterization and identification of Diazinon degrading bacteria from the soil and gut of macrotermes. *Journal of Biodiversity and Environmental Sciences*, **3**:70-79
16. Ogot, H. A., H. I. Boga, N. Budambula, **M. Tsanuo**, D.O. Andika, H. J, Ogola (2013a) Isolation, characterization and identification of roundup degrading bacteria from the soil and gut of *Macrotermes michaelseni*. *International Journal of Microbiology and Mycology*, **1**:31-

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 7<sup>th</sup> 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 Dihydro agarofuranoid sesquiterpene insect Antifeedant from *Elaeodendron buchananii*. *Phytochemistry*, **34**: 665 - 667



## I. CONFERENCE/WORKSHOP PRESENTATION

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. 25<sup>th</sup>-26<sup>th</sup> 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, 28<sup>th</sup> November-1<sup>st</sup> December, 2007. Pp7.
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 (ESAECC) 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 (ESAECC) 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. pp 73.
7. Hassanali, A, **Muniru, T.K.**, Hooper, A.M., Khan, Z.R., Kaberia, F., Pickett, J.A. and 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. pp 34.

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 Woome, 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. pp 40.
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 Woome, 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. pp 65.
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 3<sup>rd</sup> Kenya Chemical Society International Conference. Jomo Kenyatta University of Agriculture and Technology, 16<sup>th</sup>-20<sup>th</sup> August, 1999.
2. **Tsanuo, M.K.**, Hassanali, A. and Jondiko, I. (1994). Chromatographic Isolation and Structure Elucidation of Mutangin, a sesquiterpenoid antifeedant, 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 *Chilo partellus* (Swinhoe) in fruits of *Elaeodendron buchananii*. L. Kenyatta University Post-Graduate Seminar, November, 1993,

**J. PROFESSIONAL ASSOCIATION**

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