

## Joseph Karanja Thiong'o

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### **EDUCATION AND EXTRA CURRICULAR ACTIVITIES:**

**1991-1995** University of Manchester Institute of Science and Technology (UMIST) UK,

**Doctor of Philosophy, Corrosion Science and Engineering**

**1995:** Final Year PhD, UMIST Total Technology GRASP Management Program

**Chairman:** The Kenya University Students of Manchester, incorporating, Victorian Manchester, UMIST, Manchester Metropolitan, Bolton and Salford University students;

**Member:** Corrosion and Protection Society;  
Friends of Kenya Rochdale

**1983-1987** University of Nairobi

**Master of Science in Chemistry**

**1978-1981** Kenyatta University College

B.Ed.(Sc.) Second Class Honours (Upper Division)

**Treasurer:** Kenyatta University College Students Association 1979/80;

**Chairman:** Kenyatta University College Students Association 1980/81

**1976-1977** Cardinal Otunga High School

E.A.A.C.E.: 3 Principals, 1 Subsidiary

Member: Science and Chama Cha Kiswahili Clubs,

Captain: School Volleyball team

**1972-1975** Githumu Secondary School

Chairman: Science Club; Captain: School volleyball team

**1965-1971** A.C.C. & S. Ndakaini Primary School

Prefect, Volleyball Team Captain

**Professional: 1996-2008** Many Short Courses on Finance and Management

## **NATIONAL AND COMMUNITY SERVICE RESPONSIBILITIES AND ACTIVITIES**

**Chairman: May 2010-Date:** National Standards Council; Kenya Bureau of Standards

**Chair: 2003-Date:** Kenyatta University Boma Housing Cooperative Society Ltd.

**Achievements:** Presided over:

Estate Planning

Land surveying

Roads and perimeter wall Construction,

House and architectural planning and design

Borehole water drilling and supply installation

**Chair: 2005-2008** Kenversity Savings and Credit Cooperative Society Ltd.

**Awards won 2008:** Second Position: Best Managed SACCO

Second Position: Best Education Services

**2007:** First Position: Highest Dividends and Interest

First Position: Least Expenditure SACCO

Second Position: Highest Average Member Savings

**2006:** First Position: Best Managed SACCO

First Position: Least Expenditure SACCO

**Delegate: 2002-2005:** Nairobi Province Delegate, Kenya Union of Savings and Credit Co-operative Organization (KUSCCO)

**Chair: 2001-2005:** Kenversity Savings and Credit Cooperative Organization, Front Office Savings Activities (**Banking Services**)

**Chair: 1996-2000** Kenversity SACCO, Supervisory committee

## **PROFESSIONAL ACTIVITIES**

**Expert Witness:** Forensic Science on Fires and other losses

**Assistant Secretary: 2004-Date:** Kenya Chemical Society

**Referee/Reviewer: 2000-Date:** Journal of Kenya Chemical Society

**Member: 2007-Date:** Kenya National Academy of Sciences (MKNAS)

**Member: 2007-Date:** Gatanga Constituency Education Development Committee

**Chair: 2005:** Finance Committee; Kenya Chemical Society International Conference

**Member: 2003-Date:** Kenya Bureau of Standards' Plastics & Ceramics Industry Standards Committee

**Member: 2000-2007:** Kenya Bureau of Standards' Limes Standards Committee

**Consultant:2002** 'Introduction to Chromatographic Techniques with Special Emphasis on HPLC'  
Commissioned by: Biersdorf East Africa Company Limited

**World Bank Appointed Consultant 1999-2002:**

Business Development Services for the Micro and Small Enterprises Technology and Training Project (**MSETTP**)

**Achievement:**

Advancement of our clients from Kariobangi to main Industrial Areas as SMEs

Earned a visit to my clients at Kariobangi Light Industries by:

- World Bank Kenya Representative
- Personal Assistant to the World Bank President
- Head of the MSETTP Project at World Bank Headquarters
- Kenya Government Project Implementers

**Member: 1997-Date:** Board of Governors; Ndaka-ini Secondary School

**Member: 1995-Date:** Kenya Chemical Society

**Setter/Moderator and Examiner of Chemistry: 1988-1998;** Kenya National Examination Council

### **INVENTION:**

**2007:** Won Kenya Nomination: World Industrial Property Organization (WIPO) African Union(AU) – ‘Best Invention/Innovation in Africa’

**2005:** Patent Number KE193, (2005), waThiong’o Joseph Karanja, ‘**Pozzolana based cement from industrial and agricultural waste materials**’ (Pat. Ref. No. KE/P/2003/00394; WIPO Ref. No. IC/04/1734/KE-CA), Industrial Property Journal, No. **2005/02**, Kenya Industrial Property Institute

### **PUBLICATIONS:**

#### **Professional Industry-Commissioned Work**

##### **a. Environmental Audits and Investigations**

1. ‘Effluent Solutions Audit at Haco Industries’ 2008
2. ‘Photographic Materials Loss Associated with Water’ 2006
3. ‘ABM (K) Limited Premature Battery Failure’, 2005
4. ‘Solution Effluent Audit at Haco Industries’, 2004
5. ‘Flue Gas Analysis at Magadi Soda Company Ltd.’, 2004
6. ‘BAT Thika Solution Effluent Environmental Impact Analysis’, 2002
7. ‘BAT Nairobi Solution Effluent Environmental Impact Analysis’, 2002
8. ‘ABM Environmental Implementation Review 1’, 2001
9. ‘BAT Threshing Plant Environmental Impact and Safety Audit 1’, 2001
10. ‘BAT Nairobi Environmental Impact and Safety Audit 1’, 2001
11. ‘Flue Gas analysis at Magadi Soda Company Ltd.’, 2000
12. ‘ABM Environmental Impact Audit’, 2000
13. ‘Alleged injury leading to death from toxic waste products’, 1999

##### **b. Forensic Science Research**

14. ‘Fire loss at Kenafric Industries Limited’ 2010
15. ‘Fire loss at Ichoho House Lavington’ 2010
16. ‘Fire loss at Dubai Cash and Carry Limited’ 2009
17. ‘Fire loss at a residential House in Ruiru’, 2009
18. ‘Alleged damage of a Lathe Machine by Sea Water’, 2009
19. ‘Fire loss at Ambra Café Ltd’, 2009
20. ‘GPRS Device Damage by unknown chemical’ 2009
21. ‘Fireloss at AMSCON Premises’ 2009
22. ‘Fireloss at Nakumatt Supermarket’ 2009
23. ‘Fireloss at Polyflex Industries’ 2009

24. 'Fireloss at Leon House' 2008
25. 'Loss Associated with a Rain Storm at Dandora Millers Ltd.' 2008
26. 'Alleged Contamination of Spare Parts by Sea Water' 2008
27. 'Fire loss at Arvee Fashions Limited', 2008
28. 'Alleged Contamination of a Suiting Material' 2007
29. 'Fire Loss Leading to Machine Destruction', 2007
30. 'Fire Loss at International House', 2006
31. 'Fire Loss at Sunflag Ltd Godown', 2006
32. 'Fire Loss at Mohamed Enterprises Tanzania Limited (Dodoma)', 2006
33. 'Fire Loss at City Hall', 2004
34. 'Fire loss at Ushindi Expo Centre', 2004
35. 'Fire Loss at Livercot Impex Ltd. (Mombasa), 2004
36. 'Fire Loss at Aberdare Park Supermarket', 2004
37. 'Fire loss associated with a Dry Cleaning chemical', 2004
38. 'Fire loss at Monsoon Café Kenya Ltd.', 2003
39. 'Fire loss at a house in South 'C' Nairobi', 2003
40. 'Fire loss at Cartek Car Parts Trading Kenya Ltd.', 2003
41. 'Fire loss of Quasar Ltd. Tanker, KAM 497 B', 2003
42. 'Fire loss at Traveller's Beach Hotel', 2002
43. 'Fire loss at Al's Place Café', 2002
44. 'Fire loss at East Africa Seafoods', 2002
45. 'Fire loss at Delamere Dairies', 2002
46. 'Fire loss at a Kahawa Sukari House', 2001
47. 'Fire Loss at store for Nina Marie Kenya Ltd.', 2000
48. 'Fire loss at a Commercial Bank Godown', 1999
49. 'Fire Loss at JKA Resort Club', 1999

### **Academic Papers**

50. Enos W. Wambu, Gerald K. Muthakia, Joseph K. wa-Thiong'o, Paul K. Shiundu (2009), 'Regeneration of spent bleaching earth and its adsorption of copper (II) ions from aqueous solutions', *Applied Clay Science* **46** (2009) 176-180
51. \*wa-Thiong'o J. Karanja, G.K. Muthakia and J.W. Muthengia, (2005), "Uptake of Calcium Hydroxide in Hydrating Portland Cement by Ashed Spent Bleaching Earth", **Journal of the Kenya Chemical Society Vol 2** No.2, 21-30
52. G. K. Muthakia, \* wa-Thiong'o J. Karanja and J. W. Muthengia, (2005) 'Cement Material from calcium carbide residue and broken bricks', **East African Journal of Physical Sciences** **6**(1): 13-19
53. J. W. Muthengia, \* wa-Thiong'o J. Karanja and G. K. Muthakia, (2005) 'Spent Bleaching Earth as a Pozzolanic Material', **Journal of Civil Engineering, Research and Practice, Vol. 2** No. 1, 15-21
54. wa-Thiong'o J. Karanja, (2005), 'University Research and Technological Development in Kenya. The need for a new Paradigm' Plenary Proc., **5<sup>th</sup> International Conference of the Kenya Chemical Society**, Kenyatta University, 81-90
55. J. W. Muthengia, \* wa-Thiong'o J. Karanja and G. K. Muthakia, (2005), 'Calcium carbide Residue as an Alternative to Calcium Hydroxide for Commercial Building Lime Pozzolana Materials' Proc., **5<sup>th</sup> International Conference of the Kenya Chemical Society**, Kenyatta University, 209-213

56. J.K. Gathua, C.M. Migwi, J.K. Thiong'o, and Wanjau Kabecha, (2005), 'Optimizing Pyroprocessing Conditions of Pozzolanas Using Compressive and Dissolution Methods', Proc., **5<sup>th</sup> International Conference of the Kenya Chemical Society**, Kenyatta University, 229-237
57. wa-Thiong'o J. Karanja,(2005) 'African Higher Education and Internationalisation of Higher Education. The need for a new paradigm', Jooste N. and Naude E. (Edit.) **Internationalisation of Higher Education**, Nelson Mandela Metropolitan University, 49-70
58. wa-Thiong'o J. Karanja, 2003, 'Policy for Progressive University-Industry Links', **University Industry Links to NIC Status By 2020**, Proc., wa-Thiong'o J. Karanja (Edit.), Kenyatta University, pages 35-41
59. wa-Thiong'o J. Karanja, (1995)"The Effect of Fluoride on the Localised Corrosion of Mild Steel in Alkaline Solutions"  
'36th. Corrosion Science Symposium', Cambridge University, Cambridge
60. "The Effect of Fluoride On Reinforced Concrete" PhD Thesis, Corrosion and Protection Centre, University of Manchester Institute of Science and Technology (UMIST),1995
61. \*wa-Thiong'o J. Karanja, Cottis R.A., (1992) "The Passivation of Steel in Neutral Sodium Fluoride Solutions" 'Advances in Corrosion and Corrosion Protection' An International Conference Poster Paper, UMIST, Manchester
62. "The Effect of Ions on Mortar Cubes made from Kenyan Cements and Sands", M.Sc. Thesis, University of Nairobi, 1987

### **Text Book**

63. wa-Thiong'o J. Karanja and Mugambi N.M. Gitari, (2005), SCH 201: Chemical Thermodynamics, Institute of Open Learning, School of Pure and Applied Sciences, Kenyatta University

### **Other Professional Outputs**

64. '**Becoming a Success in Education-Related Careers**', Gatanga Constituency Careers' Day, 2008
65. "**Kenya Nationhood Building: A reflection of where we were 40 years ago, Today and where we shall be 40 years to come**", Professionals Forum-8<sup>th</sup> Public Debate, University of Nairobi, 2004
66. '**University-Industry Links: Market oriented approach for project development**', Restructuring Kenyatta University, 2003
67. "**People as a strategic Resource**", Strategic Management for Success in a Small Firm, (Day Seminar for a small firm), Nairobi, 2003
68. 'Introduction to Chromatographic Techniques with Special Emphasis on HPLC', 2002 Biersdorf East Africa Company Limited
69. 'The role of a scientist in insurance claims' **Kenya Insurance Journal**', 2000 **Keynote Address**, Annual Kenya Insurance Institute Forum
70. 'Donde Bill is no good for Kenya' **East African Standard, Guest Column**, 2000

### **Other Consulting Work**

- **2008**: 'Water Guard Samples Analysis' for Population Services International Kenya
- 'Bombolulu Girls' tragedy among many other forensic fire loss laboratory investigations for the insurance industry. (1997-2002)

- \*Wa- Thiong'o J. Karanja, R.A. Cottis, (1995), "Predicted Behaviour of Embedded Sacrificial Anodes in Concrete", (United Kingdom)

### **POSTGRADUATE STUDENTS SUPERVISION:**

#### **Graduated**

**PhD (Chemistry) 2009**, Jackson Wachiras Muthengia, 'The Effect of Selected Media on Novel Portland Pozzolana Cement', Kenyatta University

**MSc(Chemistry) 2009**: Enos Wamalwa Wambu, 'Sorptions of Copper (II) ions From Aqueous Solutions by Regenerated Apent Bleaching Earth'

**MSc (Chemistry) 2007**, 'Determination of Heavy metals in tobacco waste and leaves from various regions in Kenya', Panyako A. Wakoli, KENYATTA UNIVERSITY

**PhD (1<sup>st</sup> Physics PhD in KU) 2005**, "Pozzolanicity of Selected Kaolinites with Special Emphasis on Pyroprocessing Conditions" Gathua J.K., KENYATTA UNIVERSITY

**MSc (Chemistry) 2003**, "Low Cost Pozzolanic Cement from Agricultural and Industrial Wastes" Wachira Muthengia Jackson, KENYATTA UNIVERSITY

#### **Ongoing**

- MSc, 'Investigation of the Optimum Mix Ratio of Rice Husks, Spent Bleaching Earth and Broken Bricks to make Pozzolanic Cement'
- MSc, 'Effects of Sulphate and Chloride Bearing Industrial Effluents on Concrete Based on Pozzolana Cement Derived from Industrial and Agricultural Wastes'

### **CONFERENCES, WORKSHOP/SEMINARS AND EXHIBITIONS**

#### **Organized:**

- **Member, Organizing Committee, 6<sup>th</sup> International Conference**, The Kenya Chemical Society, Reef Hotel. Mombasa 2009
- **Chair: Finance Committee; 5<sup>th</sup> International Conference**, 'Chemistry-Its Contribution to a Healthy Environment and Socio-Economic Development': The Kenya Chemical Society, Kenyatta University, 2005
- **Chair and Convenor: First-ever, KENYATTA UNIVERSITY-Industry Links Sensitization Workshop, 'University-Industry Links to NIC Status by 2020'**, Chairman, Kenya Association of Manufacturers gave the Keynote Address, 2003
- "Strategic management for success in a small firm" 2003
- "Public Relations and Good Customer Care in a small firm" 2002

#### **Exhibited:**

**2008**: 'Commission for Higher Education Kenya Universities Exhibition', Mombasa, Kenya

**2007**: 'African Ministrat Conference on Science and Technology, Mombasa, Kenya

**2007**: 'Nairobi ASK International Trade Fair' Nairobi, Kenya

#### **Attended:**

**2009: 6<sup>th</sup> International Conference. Kenya Chemical Society, Mombasa**

**2009: Research and Development in KU**

**2008:** XXV International Association of Science Parks Conference on Science and Technology Parks, 14-17<sup>th</sup> September, 2008, Sandton Conference Center, Gauteng, South Africa

**2008:** 'Evidence-Based Advice to Policy' 4<sup>th</sup> Regional Workshop in Celebration of the Scientific Revival Day of Africa, Kenya National Academy of Sciences, 27<sup>th</sup>-28<sup>th</sup> June 2008, Hotel Panafric, Nairobi

**2005:** 5<sup>th</sup> International Conference, 'Chemistry-Its Contribution to a Healthy Environment and Socio-Economic Development': The Kenya Chemical Society, Kenyatta University.

**Presented a Plenary Paper:** 'University Research and Technological Development in Kenya. The need for a new Paradigm'

**2004:** 'Science and Technological Park Development for Sustainable Economic Growth' National Workshop in Commemoration of the Scientific Revival Day of Africa

**2004:** Professionals Forum-8<sup>th</sup> Public Debate, "Kenya Nationhood Building: A reflection of where we were 40 years ago, Today and where we shall be 40 years to come" University of Nairobi, Presented a write-up

**2004:** University of Port Elizabeth, International Colloquium, 'Internationalisation of Higher Education', Port Elizabeth, South Africa. Presented a Paper; 'African Higher Education and Internationalisation of Higher Education. The need for a new paradigm'

**2003:** 'University-Industry Links to NIC Status by 2020', Presented a Paper: 'Policy for Progressive University-Industry Links'

**2000:** Annual Kenya Insurance Institute Forum

Gave **Keynote Address** 'The role of a scientist in Insurance Claims'

**1995:** '36<sup>th</sup>. Corrosion Science Symposium', Cambridge University, Cambridge

Read a Paper: "The Effect of Fluoride on the Localised Corrosion of Mild Steel in Alkaline Solutions"

**1992:** 'Advances in Corrosion and Corrosion Protection' An International Conference, UMIST, Manchester

Presented a Poster Paper, "The Passivation of Steel in Neutral Sodium Fluoride Solutions"