

DOROTHY W. MAINA



Personal Information

Nationality: Kenyan

Occupation/Position: Chemical Engineer and Lecturer, Gas & Petroleum Engineering,
Kenyatta University

Profession: Chemical Engineer

Experience: 16 years

Date of Birth: 16th January 1979

Place of Birth: Nairobi, Kenya.

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OBJECTIVE

A highly effective team player, hardworking and dedicated professional who wants to meet the training needs of budding professionals in the engineering fields of Chemical processing and the Oil and Gas sectors through higher education and Industry-University linkages. I have a passion to mentor young people acquire and develop hands-on skills to complement their professional training and contribute to contribute towards the growth of the Higher education industry.

Summary of Achievements

- A PhD Scholar at Dedan Kimathi University (DeKUT)
- Master of Science in Chemical Engineering (MUCT_Russia)
- Registered Graduate Engineer (Engineers Board of Kenya (E.B.K)-B05654)
- Served in Industry in different capacities, the last appointment as Production Manager in charge of 40 team members.
- Over 10years of teaching experience and service in the university as examination coordinator (4 years) and in different committees. Acting as Chairperson of department for a total of 3 months.
- Staff Mentor
- Feted twice as the most supportive faculty member by Society of Petroleum Engineers.
- Have the ability to handle large workloads, operate in high stress environment and deal extensively with customers and stakeholders
- AWARDED Russian government scholarship to undertake Bsc. and Msc. In Chemical Engineering
- Awarded AfDB-GOK PhD SCHOLARSHIP to undertake doctorate studies
- RECEIPIENT of the 2022 KENET research grants for early career PhDs different SIG areas. (2022 Cohort of Grantees.)

Professional Strengths:

- Educationist specializing in Teaching, Training and Examining in Engineering and Industrial Management.
- Participated in Grant Proposal writing
- Experience in research of organometallic derivatives of Amino acids used in antitumor research
- Ability to engage in new fields and a fast learner
- Strong communication and interpersonal skills.
- Self-motivated professional with a knack for detail.
- Energized, able to work long hours without supervision and work under strict deadlines.

- Possess a valid Driving License and a Kenyan Passport

Foundational competencies

- Commitment
- Integrity
- Team player
- Embracing diversity
- A good listener

Functional competencies

- Negotiation and problem solver
- Decisive and flexible
- Creative and focused
- Good communicator
- Mentor and Motivator
- Self driver

ACADEMIC/PROFESSIONAL QUALIFICATIONS:

PhD Mechanical Engineering, Dedan Kimathi University of Technology-ongoing-(course work completed).

2004: MSc. Chemical Engineering, **D.I. Mendeleyev University of Chemical Technology of Russia**

2002: BSc. Chemical Engineering and Biotechnology, **D.I. Mendeleyev University of Chemical Technology of Russia**

1998: Certificate in completion of Integrated Foundational Course in Engineering and Russian Language

Membership to Professional Bodies

- Engineers Board of Kenya (E.B.K)-Serial B05655
- Society of Petroleum Engineers (SPE)

Specialization and Interests: Industrial Chemical Processes, Industrial Unit Operations, Material science and Engineering Materials, Thermodynamics, Petroleum Production and Refinery and Oil and Gas downstream operations. Occupational Health and Safety,

EDUCATIONAL BACKGROUND:

Secondary Education	1993-1996	St. Francis Girls High School, (Mang'u), Kenya
	1996	Kenya Certificate of Secondary Education , Overall grade B (plain)
Primary Education	1985-1988	Madaraka Primary School
	1988-1992	Mt. St. Mary's Girls Boarding Sch.
	1992	Kenya Certificate of Primary Education, Overall grade A-

PROFESSIONAL EXPERIENCE:**INDUSTRIAL:**

1. 2nd /May/2007-Appointed **Production Manager** Clique Limited.

Duties

- Overall management of the Manufacturing, Packaging, Stitching and Printing Departments
 - Scheduling and timely completion of orders
 - Quality control and quality assurance
 - Maintenance of machines
 - Ensure cleanliness of Production area is maintained
 - Notify Purchasing Officer when raw materials and Packaging materials reach minimum stock levels
 - Preparation and submission of Management Information reports
 - Liaise with Administration on casual staffing requirements
 - Manage the staff in Manufacturing and Packaging Department
2. 2nd /Jan/ 2007- Appointed as a **Management Trainee and Departmental head** at Sphinx Pharmaceuticals Limited. Main duty was to oversee the daily operations of the Liquids packaging department. **2002-** INEOS

(Institute of Element and Organic Sciences), Moscow Russia - four week training in scientific research work.

3. 2005- Appointed R&D and Product Development Supervisor at Cosmos Limited Pharmaceutical Manufacturers.

Duties

- To develop formulations of new products
- To oversee implementation of new product formulations at pilot stage to mass production
- Undertake research in product development and improvement
- Suggest areas of product improvement with respect to market feedback

4. 18th /Oct/ 2004- Appointed as Production Supervisor at Cosmos Limited Pharmaceutical Manufacturers.

Duties

- To check the dispensed material against Batch production record before it is taken to production area
- To monitor each step of batch processing and document it properly
- Implement Good manufacturing Practices at each step of production
- To achieve production targets and optimize utilization of manpower and machinery to get maximum production output
- To write Standard operating Procedures for operation of the department and monitor strict implementation of the same.
- To take roll call of all permanent and casual workforce and submit timely wage work sheet for casual workers and extra working information for all permanent staff of the department
- To increase or decrease casual work force with respect to workload in department
- Write Quality Control Analysis slip as soon as a particular step of production is completed and send a sample to QC for analysis
- To check and ensure that batch production record is properly filed at each step of processing and packaging and batch production record is duly signed before it is released to QC for product release.

5. **2003-2004-** INEOS (Institute of Element and Organic Sciences) Moscow
Russia –research and laboratory assistant.

Duties

- Conducting research on organometallic derivatives of amino acids and their activity against tumors
- Undertaking experiments assigned with respect to area of current team's research and submitting samples for analysis. Compilation and tabling of results
- Writing and Translation of findings and research outputs of publication from Russian to English

6. **JUNE 2003-JULY 2003-** Receptionist and Front Office Manager, Embassy of the Republic of Kenya, Moscow Russia

7. **2002** – Kyrkovsky Plastic factory- Practical training for general engineering

ACADEMIC/TEACHING EXPERIENCE

1. **Feb/2013 –to date** Appointed **Lecturer**, School of Engineering, Kenyatta University.
2. **Jan/2012-April/2013-**Appointed **Project supervisor** Department of Chemical and Process Engineering, Technical University of Kenya
3. **May/2011-April/2013** Appointed **Sessional lecturer** at the Department of Chemical and Process Engineering, Technical University of Kenya
4. **May/2010- April/2011** Appointed **Sessional lecturer** at the Department of Mechanical Engineering, Kenya Polytechnic University College
5. **Jan/2009** – Appointed **Part time lecturer** at the Department of Mathematics, Kiriri Women's University of Science and Technology
Detailed task assigned: Lecturing. Setting and Administering Exams and CAT's. Under graduate supervision.
6. **April/ 2015 -**Appointed **Departmental Examinations' coordinator**.
7. **August/2015-**Participated in the preparation of School of Engineering Proposals for funding by African Development Bank.

ADMINISTRATIVE DUTIES (2013-TO DATE)

Kenyatta University

1. ISO Quality Team committee member
2. Departmental time-tabler.
3. Departmental Examination Coordinator. Coordinating examination process in the department. Ensuring that all examinations are set and processed on time. Ensuring proper safe keeping of all examination records.
4. 1st Year Academic Advisor
5. Chairperson Departmental Marks Verification Committee
6. Patron SPE Kenyatta University Chapter (2018-date)

Acting Positions

1. 18th -22nd June 2018, Stood in for Chairman, Gas & Petroleum Engineering Department
2. 10th-22nd April 2018, Stood in for Chairman, Gas & Petroleum Engineering Department
3. 4th-18th September 2017, Stood in for Chairman, Gas & Petroleum Engineering Department
4. 10th-18th June, 2017, Stood in for Chairman, Gas & Petroleum Engineering Department
5. 27th-12th September, 2016, Stood in for Chairman, Gas & Petroleum Engineering Department

Other institutions

1. Production Manager, Clique Ltd
2. Management Trainee, Sphinx Pharmaceuticals
3. Assistant Chairperson Women's Department. KSBC (2015-2017)
4. Conducted lectures and training on Occupational Health and Safety, Good Manufacturing practices at Sphinx Pharmaceuticals, Nairobi.

Appointment to Boards

- **2019-2021-Department representative and Patron Board of Advisors, Society of Petroleum Engineers, Kenyatta University Chapter**
- **2015-Member-Board of Undergraduate studies, School Of Engineering Kenyatta University**

Appointment to Committees

- 2018-Member, Inspection and Acceptance Committee- Gas & Petroleum Engineering Equipment, KU
- 2017- Member, Committee to Appraise the Performance of Kenyatta University Petrol Station, KU
- 2016- Member, London South Bank University Collaboration Committee
- 2016-Member, Library Committee, School of Engineering, KU.
- 2015-Chair, Departmental Marks Verification Committee
- 2015-Member, Office Accommodation Committee
- 2015-Member AFDB/HEST proposal writing Committee
- 2015-Member, Journal Committee, School of Engineering
- 2013-Member, Appointed to the Energy Conservation Committee, Kenyatta University
- 2013- Member of Secretariat, Biomedical engineering summer school. Kenyatta University
- 2013-Member of Corruption Presentation Committee

Other Appointments

1. Patron, Society of Petroleum Engineers Club (SPE) 2019-2021
2. Staff Mentor, Kenyatta University 13th November 2017
3. Co-Lecture with IOWA State University Professors, 3rd-5th November, 2015

Research Activities and Publications

Patents

- Christopher Maina Muriithi, Dorothy Wadhwa Maina, “MULTI-STOREY GARDEN WITH SOLAR POWERED AUTOMATED IRRIGATION SYSTEM”, KE/P/2020/3716; Field of Innovation: Automation, organic farming, food security, renewable energy. Industrial

Referred Journals

- **D.A Wadhwa**, Alexander A. Simenel .,Lubov' V. Snegur . "Synthesis of ferrocenylalkyl derivatives of β -Alanine and Glicine." *Modern Trends in Organoelement and Polymer Chemistry, Moscow, Russia 2004, P96.*

1. **D.A Wadhwa**, Alexander A. Simenel .,Lubov' V. Snegur . "Synthesis of ferrocenylalkyl derivatives of β -Alanine and Glicine." *Modern Trends in Organoelement and Polymer Chemistry, Moscow, Russia 2004, P96.*

2. **D.A Wadhwa**, Alexander A. Simenel .,Lubov' V. Snegur "Synthesis of potential biologically active ferrocene-containing amino acids." *Modern Trends in Organoelement and Polymer Chemistry, Moscow, Russia 2004.*

Other publications and research interests

3. How to transform existing energy systems so as so as to introduce new technologies and support large scale applications-Concept Note, Dedan Kimathi University, 28th March, 2018.

4. Syngas to Methanol Production- Concept Paper, 24th February, 2018, Dedan Kimathi University

5. Exploration of Bio algae as feedstock for Bioethanol production-ongoing

6. Syngas Production from coal and biomass-ongoing research

7. Application of Nanotechnology in the Oil and Gas Industry

8. Dorothy Wadhwa, Master of Science Thesis. Topic: Synthesis of Ferocenylalkyl derivatives of Amino acids and peptides, June,2004

9. **D.A Wadhwa**, Alexander A. Simenel .,Lubov' V. Snegur . "Synthesis of ferrocenylalkyl derivatives of β -Alanine and Glicine." *Modern Trends in Organoelement and Polymer Chemistry, Moscow, Russia 2004, P96.*

10. **D.A Wadhwa**, Alexander A. Simenel .,Lubov' V. Snegur "Synthesis of potential biologically active ferrocene-containing amino acids." *Modern Trends in Organoelement and Polymer Chemistry, Moscow, Russia 2004.*

Conferences and workshops

1. Stakeholder, Chemical Engineering Curriculum review committee, Kirinyaga University, 8th March, 2021.
2. Upstream oil and gas Instructor- HSE in collaboration with Wataalamu Oil Consultancy Limited March-April 2021
3. - Course facilitator and instructor, Morendant of Oil and Gas on upstream sector 9th-13th November, 2020.
4. Kentatta University Team nominee for application of KENGEN research grant, June 2019
5. Validation Workshop on the Transparency and Accountability Framework and Action Plan for Kenya's Petroleum Sector, 15th May 2019
6. Leadership Workshop for Deans and Heads of Section, Kenyatta University in collaboration with DePaul University, March 2019.
7. Training of Trainers workshop for Staff Mentors and growing Leaders Facilitators, 2018
8. Multi-Stakeholder Workshop on the Kenyan Transparency and Accountability in Petroleum, Strathmore University, 17th December, 2018
9. Training of Chairpersons of departments, KUCC Kenyatta University, 8th-9th January, 2018.
10. Zero Draft - Kenya Petroleum Transparency and Accountability Framework workshop, Strathmore University Extractives Sector, 16 October 2018.
11. Focus Group Discussion (Academic and Research Institutions, Civil Society Organizations and Faith Based Organizations) on Developing a Transparency, Accountability Framework, and Action Plan for Kenya's Petroleum Sector workshop, Strathmore University, August 2018
12. International Conference on Nanoscience, Nanotechnology & Advanced Materials (IC2NAM), Oxford, UK, 19-20th July 2018
13. 180507_International Women in Engineering Day, Kempinski Villa Rosa Nairobi, 23th June, 2018.
14. SPE week Seminar, Kenyatta University, 22nd November, 2017

15. Northern Nairobi Regional Consultative Forum for enhancing the Impact of Christian Faculty, staff and Post-Graduate Students in Universities and colleges, Kenyatta University, September, 2017
16. Women in Extractives Seminar, Her world Energy Forum 2017, Golden Tulip, 8th March, 2017.
17. 3D Printing for sustainable Manufacturing in Africa, KUCC, Kenyatta University, 26 - 27th May, 2016
18. Sensitization Seminar for Chairmen of Departments, KUCC Kenyatta University, 14th September, 2016.
19. Training workshop on Industrial Automation and Motion Control, 24th June, 2015
20. 6th International conference on Appropriate Technology, 25-29 November, 2014
21. IEEE workshop on publication. Nairobi, Kenya, April 2014
22. IEEE Academia-Industry Engineering Stakeholders Forum . Nairobi, Kenya ; October 22-June, 2013
23. Innovators Summer school, Nairobi Kenya August 12- August 16, 2013
24. Workshop on Appropriate Technology, Energy Department-Kenyatta University May25-27, 2013
25. Teaching Methodology, Centre for teaching Excellence & Evaluation, KU, 28th May- 14th November, 2013.
26. Simulation of Chemical Process using Matlab and Aspen Hysys
27. Biodiesel production from croton nut seed and use of egg shells as a catalyst- 2012, Technical University of Kenya.
28. Biofuel production from sweet potato husks and sugarcane bagasse-2012-2013, Technical University of Kenya
29. International Conference Dedicated to 50th Anniversary of A.N. Nesmeyanov Institute of Organoelement Compounds (INEOS), Russian Academy of Sciences. Moscow, Russia May 30-June 4, 2004.

Grant Proposal writing

1. The 2022 KENET research grants for early career PhDs different SIG areas. (2022 Cohort of Grantees.) Standard computational Approach for the design of doped

Carbonaceous materials for power generation.

2. Research collaboration - NEWTON UFATIFI FUND PROGRAMME, May/2017
3. National Research Fund (NRF)- Title of the Project: The Impact Of Oil And Water Discovery On Natural And Agricultural Resources In The Turkana County, 2017/2018 Financial Year
4. National Research Fund (NRF)- **Title of the Project:** Design and Implementation of a Self-Sufficient Energy System in Murang'a Town Slaughterhouse using a Biogas-Solar Hybrid System for Meat and Fruit Processing and Agronomy in Collaboration with KU and JKUAT, 2017/2018 Financial Year.
5. Kenyatta University School of Engineering Proposals for funding by AFRICAN DEVELOPMENT BANK. **August/2015.**

AWARDS AND RECOGNITION

1. RECIPIENT of the 2022 KENET research grants for early career PhDs different SIG areas. (2022 Cohort of Grantees.)
2. Award and certificate for the Most supportive Faculty member, Society of Petroleum Engineers, The Nairobi Safari Club, 7th December, 2018.
3. AfDB Scholarship in PhD in Mechanical Engineering at Dedan Kimathi University of Technology (DeKUT), 18th January, 2018
4. Award and certificate for the Most supportive Faculty member, Society of Petroleum Engineers, The Sarova Stanley Hotel, 24th November, 2017.
5. Recognition of exemplary performance and Leadership, Embassy of the Republic of Kenya, Moscow, Russia, July, 2004 and hard work
6. Certificate on leadership, Vice Chair-Kenya Students Union Russia, 16th March, 2002
7. Russian Government Scholarship-2002-2004-to pursue Msc. Chemical Engineering at D.I. Mendeleev Russian University of Chemical Technology
8. Russian Government Scholarship-1997/1998-to pursue undergraduate studies in Engineering.

Other Affiliations.

1. Patron, Society of Petroleum Engineers Club (SPE) 2019-2021
2. Strathmore University Extractives Center
3. Technical University of Kenya: Member, curriculum development committee (2011-2012)
4. Girls in Engineering Kenya
5. Women in Engineering, SA
6. Russia University of Chemical Technology (D.I. Mendeleev), Alumnus (1998-2004)

Trainings:

1. Training of Trainers for staff mentors and Leadership facilitators, March 2019
2. Training of Chairpersons of departments, KUCC Kenyatta University, 8th-9th January, 2018.
3. Awareness training on ISO 27001, ISMS-4th June, 2018
4. Sensitization Seminar for Chairmen of Departments-2016
5. Use of SPSS in data analysis-2016
6. Industrial Automation and motion control-2015
7. Gender policy sensitization-2014
8. Teaching Methodology-2013
9. Public complaints resolution-2013
10. Anti-plagiarism training- Turnitin
11. Bulk SMS system-2013
12. Occupational Health and Safety, Good Manufacturing practices at Sphinx Pharmaceuticals, Nairobi 2007

Computer Competencies

- MS office applications
- Chem Pro
- Latex
- Bulk sms systems-popote sms
- Aspen Hysys and SPSS software

Curriculum Development

1. Stakeholder, Chemical Engineering Curriculum review committee, Kirinyaga University, March, 2021.
2. PhD in Petroleum Engineering Programme, Kenyatta University
3. Member, curriculum development committee for Bsc. and B.Tech in Chemical Engineering, Technical University of Kenya (2011-2012)

COMMUNITY OUTREACH

1. PTA member, Emmanuella Mazolla School
2. Patron, SPE KU Student chapter
3. Patron, WIE (Women in Engineering)-IEEE, KU
4. Mentor, Creative ministries, Kenyatta University Students' CU
5. Students wellness champion-link with students' wellness centre, KU

LANGUAGES:

English, Swahili and Russian

Personal Interests

Mentoring young people in self and personal leadership. Team building activities and community outreach.

HOBBIES:

Singing, reading motivational and Christian literature, cooking, athletics and farming.

REFEREES:

1. Dr. Benson B. Gathitu

Senior Lecturer Department of Agricultural & Bio systems Engineering, JKUAT
(Formerly Chairman, Department of Chemical and Process Engineering, TU-K)

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2. Dr. June Madete

Senior Lecturer & Coordinator Biomedical Engineering Programme,

Kenyatta University

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3. Dr. Ciriaka Gitonga

Dean, School of Education and Social Sciences, University of Embu

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Cell: +254-722444094