

Prof. John Okumu
Telephone Number: 0720-716631
Email: okumu.john@ku.ac.ke

I. QUALIFICATIONS

University of Leeds, Leeds	Ph.D in Condensed Matter Physics	1992 – 1996
Kenyatta University, Nairobi	MSc in Condensed Matter Physics	1986 – 1988
Kenyatta University, Nairobi	B.Ed. (Sc), Physics, Maths and Education	1983 – 1986

II. PROFESSIONAL EXPERIENCE

Kenyatta University Professor, Department of Physics	2020 –
Kenyatta University Associate Professor, Department of Physics	2004 – 2020
Kenyatta University Senior Lecturer, Department of Physics	1999 – 2004
Kenyatta University Lecturer, Department of Physics	1992 – 1999
Kenyatta University Tutorial Fellow, Department of Physics	1988 – 1992

III. ADMINISTRATIVE EXPERIENCE

Kenyatta University Deputy Vice Chancellor (Academic)	2010 – 2020
--	-------------

Key Responsibilities

Charged to strategically provide leadership, direction and administration of programmes in the Academic Division of the University.

1) Teaching

- Oversee all tasks core to teaching thus ensure efficient delivery of all academic programs including;
 - Development of programmes and acquiring necessary approvals by Senate
 - Compliance with the Commission for University Education regulations
 - Admission of students to the University
 - Timetable preparation for all departments
 - Preparation and execution of examinations as per set standards
 - Preparation and issuing of certificates and transcripts
 - Preparation and execution of two graduation ceremonies annually

2) Quality Assurance

- Ensure quality of teaching and learning through the Centre for Teaching Excellence
- Ensure lectures start on time, lecturer/class attendance, and proper invigilation of exams
- Ensure all academic processes conform to the Quality Management Standards (ISO 9001:2008)

3) Students Affairs

- Design and oversee the implementation of programs that uphold the well-being of the entire students' community and the University through;
 - Efficient and effective admissions & records management process
 - Student welfare programs
 - Provision of counselling services
 - Disciplinary procedures to ensure fairness and orderliness

4) Academic Support Services

- Co-ordination of the allocation of resources for academic purposes
- Allocation of academically oriented buildings, rooms and offices in the University
- Formulation of the rules governing allocation and utilization
- Management of library services
- Smooth operation of the University bookshop

5) Chairman to Academic Statutory Boards

- Led the team members of the following committees;
 - Board of Postgraduate Studies
 - Dean's Committee
 - Students Welfare Committee
 - Students Disciplinary Committee
 - Bookshop Committee
 - Centre for International Programmes and Collaborations
 - Library Committee
 - Teaching Practice Board
 - Chairman, E-learning Board

6) Other Duties

- Ensure that targets in the Division are met as per the signed performance contracts by Deans, Chairmen and Section Heads in the Academic Division.

Key Achievements

1) Development of 77 new programmes

- School of Agriculture (6)
- School of Business (6)
- School of Economics (2)
- School of Education (11)
- School of Engineering and Technology (4)
- School of Medicine (1)
- School of Hospitality and Tourism (1)
- School of Humanities and Social Sciences (13)
- Institute of African Studies (13)
- Institute of Peace and Security Studies (4)
- School of Public Health (1)

- School of Pure and Applied Sciences (8)
- School of Visual and Performing Arts (1)
- School of Architecture and Built Environment (6)

2) Successful accreditation of 5 programmes

- | | |
|--------------------------------|--|
| ▪ Engineering | Engineering Board of Kenya (EBK) |
| ▪ Law | Council of Legal Education (CLE) |
| ▪ Medicine | Medical Board |
| ▪ Foods, Nutrition & Dietetics | Kenya Nutritionist & Dietitians Institute (KNDI) |
| ▪ Animal Health and Production | Kenya Veterinary Board (KVB) |

3) Successful accreditation of 5 campuses by the Commission for University Education

- Nyeri Campus
- Mombasa Campus
- Kitui Campus
- Kericho Campus
- Nakuru Campus

4) Establishment of the Kenyatta University Digital School

5) Successful implementation of the use of technology

- Online facilitation for regular, Institutional Based Programmes and e-Learning modes
- Development and implementation of online teaching
- Development and implementation of the evaluation tool for Students/Lecturer evaluation
- Implementation of an online application system
- Automation of fee payment by students
- Digitalization of the library and the use of e-resource platform

6) Successful installation and implementation of a New Student Management System (Campus Vue)

7) Contributing to the growth of the University

- Increase in the number of students from 45,000 to 74,000
- Increase in the number of schools from 13 to 17

8) Successful Formulation and Implementation of Policies

- New Examination Regulations Policy (2015)
- Post-Doctoral Policy (2015)
- Social Media Policy (2015)
- Revised Field Trips Policy (2015)
- E-learning Policy (2015)
- New Centralized Admissions Policy (2014)
- Extra Teaching Load for Teaching Staff Policy (2014)
- Gender & Sexual Harassment Policy (2013)
- University Collaborations Policy (2012)
- Policy on Minors and Majors (2012)
- Rationalization of Units Policy
- Revised University Internship/Practicum Policy
- New Student Mentoring Policy
- Policy on Plagiarism
- Disability Policy and Procedures
- Accommodation Policy

- Policy guidelines on Late Payment of Fee
- Kenyatta University Consultancy Policy

Kenyatta University
Director, Centre for Career Development and Placement

2008 - 2010

Key Responsibilities

- 1) Sharpen students' job-seeking skills and awareness in competitive, rewarding and upcoming local and international labour markets
- 2) Assist students manage their own learning, personal development and creativity in preparation for work
- 3) Provide information on career planning, further studies and employment opportunities
- 4) Provide resources and information to students regarding Attachment and Practicum Programs (APPs)
- 5) Provide assistance and support services to students seeking attachment
- 6) Maintain a database/catalogue of attaching advisory and facilitation services for internships at Kenyatta University for external students
- 7) Develop materials and reference resources for APPs
- 8) Coordinate the supervision and assessment of students on attachment

Key Achievements

- 1) Formulation and development of a curricular for Attachment and Practicum programmes (APPS)
- 2) Regular training for career pathing and employment opportunities for final year students
- 3) Successful training to students on job-searching skills, CV writing and job interview skills
- 4) Successfully sourcing funding to organize career week events in the University which are now regular University events.

East African Journal of Physical Sciences
Editor-in-Chief

2007 - 2010

East African Journal of Science
Deputy Editor

2004 - 2007

Kenyatta University
Deputy Director, Self-Sponsored Programs

2003 - 2004

Kenyatta University
Ag. Dean, School of Pure and Applied Sciences

2000, 2002, 2004, 2005 and 2010

Key Responsibilities

- 1) Academic and administrative Head of the School
- 2) Chairman of all the School's 6 Boards
 - School Academic Board
 - School Examination Board
 - School Executive Board
 - Undergraduate Board
 - Postgraduate Board
 - Full School Board
- 3) Attend departmental meetings in School of Pure and Applied Sciences as an ex-official member

Key Responsibilities

- 1) Academic and administrative Head of the School Department
- 2) Ensure proper and acceptable standards of teaching and instruction are maintained in the Department
- 3) Chief Examination Officer in the Department
- 4) Chairman of all Departmental Board Meetings

Key Achievements

- 1) **Development of 6 programmes/modules**
 - Introductory Nuclear Physics module 2007
Physics Department for Catholic University of Eastern Africa
 - BSc. (T.I.T) program (revised programme) 2006
Department of Physics
 - Telecommunications programme (new programme) 2006
Department of Physics
 - Quantum Mechanics (SPH 301) module 2006
Institute of Open, Distance & e-Learning-Kenyatta University
 - MSc. (Electronics and Instrumentation) (revised programme) 2005
Department of Physics
 - B.Sc. Telecommunication and Information Technology (T.I.T Programme) 1998 - 1999
Department of Physics School of Pure and Applied Sciences
- 2) Successful proposal leading to a research grant of US \$9,000 from the Third World Academy of Sciences (TWAS) to carry out research on Thin Films for Smart Window applications.
- 3) Establishment of the Thin Film Physics Research Unit with funding from Third World Academy of Sciences (TWAS), Germany Exchange Service (DAAD) and the Alexander von Humboldt Foundation (AvH). The project was successfully completed in 2006/2007.
- 4) Successful training of 5 staff at PhD level through a collaboration with RWTH-First Institute of Physics Aachen-Germany.

Kenyatta University
Departmental Examination Coordinator, Department of Physics

1996 - 1998

Kenyatta University
Departmental Computer Administrator, Department of Physics

1996 - 1998

IV. OTHER ADMINISTRATIVE EXPERIENCE AND RESPONSIBILITIES

1) Acting for the Vice Chancellor

Charged with running the University in the absence of the Vice Chancellor on various dates as follows;

- 1st to 14th July 2020
- 23rd and 24th January 2020
- 10th to 12th December 2019
- 1st to 7th December 2019
- 22nd to 29th November 2019
- 26th to 27th September 2019
- 14th to 21st September 2019
- 30th to 31st July 2019
- 12th to 15th July 2019
- 29th January to 2nd February 2019
- 12th and 13th September 2018
- 2nd to 5th September 2018
- 27th to 28th July 2018
- 8th to 22nd June 2018
- 25th to 26th June 2018
- 19th to 24th May 2018
- 22nd to 25th March 2018
- 9th to 11th March 2018
- 19th to 20th December 2017
- 30th November to 5th December 2017
- 17th to 19th November 2017
- 17th to 21st October 2017
- 18th to 22nd September 2017
- 11th to 14th June 2017
- 14th to 19th April 2017
- 9th to 12th April 2017
- 12th to 19th November 2016
- 4th to 19th October 2016
- 24th to 29th October 2015
- 18th to 26th September 2015
- 4th to 7th August 2015
- 2nd to 18th May 2015
- 12th to 13th February 2015
- 23rd October to 8th November 2014
- 22nd to 25th July 2014
- 15th to 26th May 2014
- 8th to 17th October 2013
- 8th to 13th July 2013
- 22nd to 27th July 2013
- 31st January to 1st February 2013
- 11th to 14th February 2013
- 2nd to 13th April 2012
- 15th to 23rd December 2011

2) Acting for Deputy Vice- Chancellor (Administration)

- 22nd February to 1st March 2011
- 14th to 17th February 2011

3) Membership of Boards and Committees

Boards

i.	Chairman,	Academic Board (Review and Monitoring for KU-Kigali Campus)	2015 – 2020
ii.	Co-Chair,	Kenyatta University Consultancy Services Board	2013 – 2020
iii.	Chairman,	E-learning Board	2013 – 2017
iv.	Chairman,	Centre for International Programmes and Collaborations Board	2010 – 2020
v.	Chairman,	Board of Postgraduate Studies	2010 – 2020
vi.	Chairman,	Students Disciplinary Committee	2010 – 2020
vii.	Chairman,	Teaching Practice Board	2010 – 2020
viii.	Chairman,	Institutional Based Programmes Board	2010 – 2020
ix.	Member,	University Management	2010 – 2020
x.	Member,	Centre for Gender Studies Board	2006 – 2007
xi.	Member,	University Senate	1997 – 2020

Committees

i.	Chairman,	Committee to Implement Recommendations in the report of the Joint Inspection by EAC Partner States National Medical and Dental Practitioners Boards and Councils	2020
ii.	Chairman,	Committee – Appointment to the MOD/KMA Contract Negotiation	2019
iii.	Chairman,	Committee – Global Tourism Resilience and Crisis Management Satellite Centre	2019
iv.	Chairman,	University Standing Committee on Competency Based Curriculum	2019
v.	Chairman,	Committee Spearheading the Transfer of School of Agriculture to Kitui Campus	2018
vi.	Chairman,	Committee – Rationalization of existing Schools, Teaching and Departments	2017
vii.	Chairman,	Committee – Development of Chairman’s Handbook	2017
viii.	Chairman,	Review of Accommodation Policy	2017
ix.	Chairman,	Committee – Assessment of the implications of 2016 KCSE results on the University Academic and Finance Sections	2017
x.	Chairman,	Committee on Academic Programmes for Mama Ngina University College	2017
xi.	Chairman,	Committee Rationalization of Directorates	2017
xii.	Chairman,	Committee – Development of Examination Policy	2016
xiii.	Chairman,	Rationalization of Field Trips and Practicums Committee	2015
xiv.	Chairman,	Committee on Establishment of a Chinese Teacher Training College	2015
xv.	Chairman,	Food, Nutrition and Dietetics Accreditation Committee	2015
xvi.	Chairman,	Committee for the Establishment of Kenyatta University Dairy Tech Farm	2014
xvii.	Chairman,	Committee for Implementation of Campus Vue	2014
xviii.	Chairman,	Middle-Level Medical Personnel Training Committee	2014
xix.	Chairman,	Committee – Negotiation of Revised Contract Terms with Ministry of Defence	2014
xx.	Chairman,	Engineering Accreditation Committee	2014
xxi.	Chairman,	Animal Health and Production Committee	2014
xxii.	Chairman,	Rebranding of the Institute of Open, Distance and e-Learning Committee	2014
xxiii.	Chairman,	Committee of the Implementation of the Student Teacher Mentoring Programme in the School of Education	2014
xxiv.	Chairman,	Rationalization of Academic Programmes Committee	2013
xxv.	Chairman,	Kenyatta University Consultancy Services Board	2013
xxvi.	Member,	Kenyatta University Tender Committee	2013
xxvii.	Member,	University’s Promotions and Appraisal Senate Committee	2004 – 2006
xxviii.	Member,	University’s Quality Assurance Interim Committee	2004 – 2006
xxix.	Member,	Student Welfare Senate Committee	1998 – 2002
xxx.	Member,	Faculty of Science Executive Committee	1998 – 2002

V. PROFESSIONAL TRAINING IN LEADERSHIP AND UNIVERSITY MANAGEMENT

- 1) **Management of Higher Educational Institutions** **2014**
Galilee International Management Institute, Israel
- Topics covered:
- Competitive Strategies & Marketing in Higher Education Institutions
 - Educational Leadership in a World of Management
 - Higher Education in the 21st Century: International Perspectives
 - Effective Team Building
 - Knowledge Management (KM): Managing in the Knowledge Era
 - Decision Making Under Uncertain Conditions: Behavioral Economics
 - The Road to Excellence
 - Change Management and Leadership
 - Strategic Resource Development Plan
 - The Impact of Technology in the Future of the University
- 2) **Training in Anti-Corruption** **2013 - 2014**
Training for members of the University Management at Kenyatta University Conference Centre
- 3) **Public Procurement Training** **2012**
KIPROD Consulting Group in Partnership with Public Procurement Oversight Authority
- Topics covered:
- Principles of Public Procurement
 - The Procurement cycles and planning
 - Procurement Methods
 - Supply Market Analysis /Vendor Management
 - The Tendering (Bidding) Process
 - Tender Evaluation and Selection
 - Negotiation
 - Orders and Contracts
 - Contract Management
 - Achieving Efficiency in Supply Chain Finance
 - Payables Financing
 - Ethical and Integrity Issues in Procurement
- 4) **Rule of Law and Governance in the New Constitutional (2010) Dispensation** **2012**
Implications for State Corporations
Sponsored by Council of Legal Education/Kenya School of Law & Ministry of Justice National Cohesion and Constitutional Affairs, held at Simba Lodge Naivasha
- Topics covered:
- Integrity
 - Honesty
 - Accountability
 - Discipline
 - Ethics

- 5) **International Dean's Course Africa 2011 - 2012 Part (3)** **2012**
Strategic and Practical Issues in Higher Education Management
 University of Addis Ababa, Ethiopia, sponsored by DAAD & Alexander Von Humboldt Foundation
- Topics Covered:
- Modern Higher Education Management and Leadership
 - Strategic and Practical issues in Higher Education Management
- 6) **International Dean's Course Africa 2011-2012 Part (2)** **2011**
Current Trends in Higher Education
 Kenyatta University- Nairobi, sponsored by DAAD & Alexander Von Humboldt Foundation
- Topics Covered:
- Quality and Strategic Management in Higher Education Institutions in Eastern Africa
- 7) **International Dean's Course Africa 2011-2012 Part (1)** **2011**
Higher Education Management / Leadership
 Hochschule Osnabruck University of Applied Sciences (Berlin- Germany), sponsored by DAAD & Alexander Von Humboldt Foundation
- Topics Covered:
- Module 1: Higher Education Systems in Germany and East Africa
 - Module 2: Changing Nature of University Governance
 - Module 3: Strategic Faculty Management
 - Module 4: Financial Management
 - Module 5: Project Action Plans
 - Module 6: Soft Skills workshop
 - Module 7: Leadership
 - Module 8: Quality Management
 - Module 9: Faculty Management, Berlin Case Study
- 8) **Quality Assurance in Higher Education** **2011**
 School of Monetary Studies, Nairobi sponsored by DAAD & Commission for Higher Education (CHE)
- 9) **Strategic Leadership and Change Management** **2010**
 Kenya Institute of Administration (KIA)
- 10) **Management of University Departments/Schools/Directorates** **2009**
 Kenyatta University
- 11) **Peace Building and Conflict Transformation Programme for Public Administrators** **2009**
 Sponsored by Amani Communities Africa (ACA)
- Topics Covered:
- Exploring Violence (Non-violence) barometer
 - Responding to Violence
 - Understanding Concept of Non-violence
 - Principles of Non-violence
 - Gender & Non-violence
 - Social Change

- Six Steps for Non-violent social change
- Non-violence and communication
- Active listening exercise
- Practical non-violent actions
- Power and conflict
- Consent theory of power
- Gender human rights and conflict
- Strategic framework
- The spectrum of allies
- Power mapping

VI. NETWORKING AND COLLABORATION WITH EXTERNAL ORGANIZATIONS

Established several collaborations and linkages that have communicated far and wide the value proposition of Kenyatta University as well brought additional value to the University's programs. Such include;

- | | | |
|-------|--|-------------|
| 1) | Member of the Alexander von Humboldt Foundation
Network to support young African Scientists in training and exchange of scientific information. | 2005 – date |
| 2) | Collaboration with RWTH Aachen 1 st Institute of Physics, Germany
Student training and staff exchange programme in material science | 2005 – 2009 |
| 3) | DAAD Alumni Network | 1989 - date |
| 4) | Established the following linkages as Deputy Vice- Chancellor (Academic) | |
| i. | CISP
Activities with the Department of Special Needs Education | 2015 |
| ii. | Catholic University of Daegu
Student Exchange Programmes | 2015 |
| iii. | University of Part Harcourt
Intra Africa Exchange Programme | 2015 |
| iv. | University of Zimbabwe
Intra Africa Exchange Programme | 2015 |
| v. | Pan African Federation of Film Makers
Capacity development with the School of Creative Arts, Film and Media Study | 2015 |
| vi. | Go sheng Services
Activities with the Institute of African Studies | 2015 |
| vii. | Peace doe Africa and Economic Development
Activities with Chandaria Business Incubation and Innovation Centre | 2015 |
| viii. | Start Up Africa INC. Delaware, USA
Activities with Chandaria Business Incubation and Innovation Centre | 2015 |

ix.	African Methodist Episcopal University, Monrovia, Liberia Proposal Intra Africa Exchange Programme Activities	2015
x.	Mbagathi Hospital Internship programmes with the Department of Foods, Nutrition and Dietetics	2015
xi.	Kiambu Hospital Internship programmes with the Department of Foods, Nutrition and Dietetics	2015
xii.	Parker University, Dallas Texas Activities with the School of Medicine	2015
xiii.	Regents University of Minnesota Activities with the Department of Gender Studies	2015
xiv.	Colombo Plan International Proposed academic programmes with the Department of Psychology	2015
xv.	Texas Tech University, USA Joint Proposal writing	2014
xvi.	Winston-Salem State University Summer Programmes	2014
xvii.	Aguaic Global Development Group Limited Joint Proposal Writing	2014
xviii.	Plasma University Kenyatta University Post Graduate Programmes	2014
xix.	Bremen University, Germany Activities with the School of Law	2014
xx.	Mathari Hospital Placement and attachments with the School of Medicine	2014
xxi.	Futures Group International Automation of medical records with the school of Public Health	2014
xxii.	University of Somalia Kenyatta University Post Graduate Programmes	2014
xxiii.	Somalia International University Kenyatta University Post Graduate Programmes	2014
xxiv.	Donation of Cloud computing equipment to the School of Engineering	2014
xxv.	St Francis Xavier University Student exchange with the Department of Nursing	2014
xxvi.	King Sejong Institute Offering Korean Language	2014

xxvii.	Children Hospital of Eastern Ontario Research Institute Inc Joint Research	2013
xxviii.	Administration Police Service (MoU & MoA) Course in music	2013
xxix.	Chosun University, S. Korea Development of a Dental Program with the School of Medicine	2013
xxx.	International Day of African Child and Youth (IDAY-INT'L) Joint Research	2013
xxxi.	Department of History, Archaeology Political Studies Students Exchange Programmes	2013
xxxii.	Orion East Africa Ltd Joint research Attachment of students Joint Seminars/Workshops	2013
xxxiii.	Seoul National University Teaching Capacity Development in the use of ICT for Teaching and Learning	2013
xxxiv.	Undungu Fair Trade Activities with the Department of Fine Art	2013
xxxv.	United Nation Economic Commission for Africa (UNECA) Activities with the School of Engineering	2013
xxxvi.	Sino Africa Centre of Excellence Foundation Activities with Confucius Institute	2013
xxxvii.	Global Peace Foundation Activities with the Industry Partnership	2013
xxxviii.	International Center for Research in Sustainable Development Joint proposal writing	2013
xxxix.	Harbin Normal PhD Scholarships through the Confucius Institute	2012
xl.	Hiroshima University Research Student Conferences	2012
xli.	Mount Saint Vincent University Student Exchange and Internship Agreement	2012
xlii.	Paris University Joint PhD Programme	2012
xliii.	Prince Edward Island University Research and Academic staff exchange Postgraduate (PhD) student exchange	2012
xliv.	University of Ilorin Intra Africa SAP	2012

xliv.	Volda University Student Exchange	2012
xlvi.	Weifang University Exchange of faculty members, exchange of students, joint research activities and cultural exchanges	2012
xlvii.	University of Nairobi Capacity Development with the School of Medicine	2012
xlviii.	Global Knowledge Initiative Collaborative research and innovation for development in integrated water harvesting and management	2012
xlix.	Uganda Martyrs University Intra Africa Exchange programme	2012
1.	Kenya Prisons Services Degree program with the Institute of Peace and Security Studies	2012
li.	Marine & Fisheries Research Institute Student Attachment Joint research activities	2012
lii.	University of Pavia Joint degree programme with the School of Economics	2012
liii.	School of Oriental and African Studies Student Exchange Programme	2012
liv.	Chung-Ang University, S. Korea	2011
lv.	Delta State University, Nigeria Intra Africa Exchange Program	2011
lvi.	St. Lawrence Egoji Teachers College-Degree Program	2011
lvii.	Katholieke University Student Exchange Internships and Placement, Research with the School of Environmental Studies	2011
lviii.	Kyambogo Institute of Teacher Education Student and Staff Exchange	2011
lix.	Ottawa University, Canada Summer Programme Research activities	2011
lx.	Rwanda Tourism University Curriculum Development	2011
lxi.	Tennessee University Preparing Graduates and Faculty for Global Competency in Enhancing Food Safety and Food Security through Organic Farming	2011

lxii.	United Nations University Student Internship Programmes	2011
lxiii.	Mahanaim Education Institute (Graceas Choir)	2011
lxiv.	Shandong Normal University Students Exchange Programme through Confucius Institute	2010
lxv.	Western Ontario University Benchmarking on internships and industrial Attachments	2010

VII. RESEARCH AND PUBLICATIONS

Internationally Refereed Journals

1. **J. Okumu**, C. Dahmen, A.N. Sprafke M. Lysberg, G. von Plessen and M. Wuttig; “Photochromic silver nanoparticles fabricated by sputter deposition”. *J. Appl. Phys.* **97**, 094305-1 (2005).
2. J.G. Gitonga, J.W. Waithaka. **J. Okumu**, and R.L. Stangl, “Gravity Survey of Lake Magadi Area” *East African Journal of Physical sciences*, **6**(2): 89-100 (2005).
3. **J. Okumu**, F. Koerfer, C. Salinga, T.P. Pedersen and M. Wuttig; “Gasochromic switching of reactively sputtered molybdenum oxide films: A correlation between film properties and deposition pressure.” *Thin Solid films*, **515**, 1327-1333 (2006).
4. E.U.O. Mapesa, J.M. Odote and **J. Okumu**, “Optical properties of indium-tin-oxide thin films prepared by non-reactive DC magnetron sputtering” *East African Journal of Physical sciences*, **7**(1/2): 13-23 (2006).
5. C.K. Wangati, W.K. Njoroge and **J. Okumu**, “Influence of Deposition parameters on the Optical properties of thin tungsten oxide films prepared by reactive DC magnetron sputtering”, *East African Journal of Physical Sciences*, **8**(1): 55-74 (2008)
6. **J. Okumu**, D. Kohl, A. Sprafke, G. von Plessen, and M. Wuttig, “Formation mechanism of noble metal nanoparticles in reactively sputtered TiO₂”, *Journal of Applied Physics* **108**, 063529 (2010).
7. E.O. Jobunga, **J. Okumu** and C.S. Singh, “Electron Impact Excitation of the lowest autoionization states of alkalis using distorted wave method”, *African Journal of Science and Technology* **11**, 24 (2010).
8. J.M. Linturi, **J. Okumu**, and C.S. Singh, “A distorted wave method applied to study the 2³P excitation of helium atom by electron impact”, *Indonesian Journal of Physics* **22**, 35 (2011).
9. Agumba J.O., Karimi P.M., **Okumu J.**, and Njoroge W.K., “Design and Fabrication of simple four point probe system for electrical characterization of thin films, *International Journal of Current Research*, vol. **3**, issues 7, 135-139 (2011).
10. E. Jobunga, **J. Okumu** and C.S. Singh, “Excitation cross section evaluation for the lowest autoionizing state of potassium”, *African Review of Physics* **7**, 0001 (2012).

11. Ochoo L.O., Migwi C.M. and **Okumu J.**, “Damping effect of the inner band electrons on the optical absorption and bandwidth of metal nanoparticles”, *Journal of Nanoparticle Research*, **14**, 1-14 (2012).
12. P.K. Kariuki, **J. Okumu** and C.S. Singh, “Calculation of cross-sections for elastic scattering of electrons at Intermediate energies by a magnetium atom”, *African Review of Physics* **9**.39 (2014)
13. W.M. Ndeke, **J. Okumu**, C.S.Singh, “Distorted Wave Method Calculations of Positron Impact Excitation of 2¹s State of Helium atom” *Advances in Physics Theories and Applications*, Vol **35** 49-57, 2014
14. P.K. Kariuki, **J. Okumu**, and C. S. Singh., “Distorted Wave Born and Optical Potential Calculation Methods for Electron-Sodium Elastic Scattering Cross-section at Intermediate Energies”, *The African Review of Physics*, **10**, 131-138, (2015)
15. Lawrence Ochoo, Charles Migwi and **John Okumu**, Impact Parameters for optimized metal nanoparticles – aided electromagnetic field (EMF) effect on cancer”, *Cancer Nanoparticles* (2018)**9:2**
16. G.J. Morgan, **J. Okumu**, J.M. Holender, D. Weaire and D. Hobbs; "Electron, Holes and the Hall Effect in amorphous silicon". *J. Non-Cryst. Solids*, **164-166**, 457-460 (1993).
17. G.J. Morgan and **J. Okumu**; "The nature of the band gap in amorphous Si:H". *Solid State phenomena*, **44-46**, 669-674 (1995).
18. **J. Okumu**, J.M. Holender and G.J. Morgan; "Hall Effect and Electronic conduction in amorphous silicon". *Phil. Mag. Lett.*, **72**, 135-142 (1995).
19. **J. Okumu**, ‘Electronic Properties of Amorphous Semiconductors and Liquid Metals’. Ph.D thesis, University of Leeds, UK (1996)
20. G.J. Morgan and **J. Okumu**; "Electron confinement in a-Si:H and effective mass theorem for amorphous semiconductors." *Phys. Rev. B*, **53**, 13254-13256 (1996).
21. J.M. Ngaruiya, J.M. Odote, **J. Okumu** and R.T. Kivaisi, " *Effects of Thermal Switching on Reactively Sputtered VO₂ Films.*" Pro. Regional Conference on Material Science, Makerere University, Kampala-Uganda (1999). p 29-37.
22. **J. Okumu** and G.J. Morgan; "Linear and non-linear optical properties of amorphous silicon." *J. Non-Cryst. Solids* **272**, 67-70 (2000)
23. Y.M. Wambua, **J. Okumu** and T.S. Dod; "Computation of Electronic properties of a-Si". *East African Journal of Science* **3**(1), 35-42 (2001)
24. **J. Okumu** and G.J. Morgan; " Calculation of linear and non-linear optical properties of amorphous silicon". *East African Journal of Science* **3**(1), 25-33 (2001).
25. **J. Okumu** and G.J. Morgan; ‘Electrical conductivity and the Hall Effect of liquid transition metals with particular reference to Fe.’ *Maseno Journal of Education, Arts and Science* **4**, 139-147 (2003).
26. **J. Okumu**, F. Koerfer and M. Wuttig; “In-situ measurements of thickness changes and mechanical stress upon gasochromic switching of thin MoO_x films” *J. Appl. Phys.* **95**, 7632-7636 June (2004).

Articles in Conference Proceedings

1. **J. Okumu** and M. Wuttig, Optical properties of TiO₂ loaded with silver nanoparticles, World Conference on Physics and Sustainable Development (31st October-2nd November 2005), Durban, South Africa.
2. E.U.O. Mapesa, J.M. Odote and **J. Okumu**, "Optical properties of indium-tin-oxide thin films prepared in a non-reactive ambient. Proceedings of the Ninth College on Thin Film Technology, July 24th to 4th August 2006, University of Dar es Salaam, Tanzania.
3. **J. Okumu**, C. Dahmen, A.N. Sprafke M. Lysberg, G. von Plessen and M. Wuttig, "Multicolor Photochromism in Silver nanoparticles in TiO₂ matrix". 1st International Conference on Solar Energy Materials, 13th-15th October, 2009, Dar es Salaam, Tanzania.
4. W.K. Njoroge, C.K. Wangati, and **J. Okumu**, "Influence of sputter power and Chamber pressure on the optical properties of tungsten thin films deposited by Magnetron sputtering". Pro. International Conference on Solar Energy Materials, 13th- 15th October, 2009, Dar es Salaam, Tanzania.
5. **J. Okumu**, C. Dahmen, A.N. Sprafke M. Lysberg., G. von Plessen and M Wutig, Photochromic Silver Nanoparticles in TiO₂ thin film. The 1st conference on Opto-Electronic Devices, July 8th-9th ,2010, University of Nairobi Kenya.
6. L. Ochoo, C. Migwi and **J. Okumu**, Influence of Opto-electronic properties of Silver Nanoparticles on the light absorption of Methylme blue dye. The 1st conference on Opto-Electronic Devices, July 8th-9th ,2010. University of Nairobi Kenya.
7. E.O. Jobunga, **J. Okumu** and C.S. Singh, "Electron Impact Excitation of the Lowest Autoionization States of Sodium using distorted wave method" 1st East African regional conference of Pure and Applied Sciences, 10th -14th August 2010, Kenyatta University, Nairobi-Kenya.
8. J.O. Agumba, P.M. Karimi, **J. Okumu**, and W.K. Njoroge, "Design and fabrication of a simple four point probe for electrical characterization of thin films", 1st East African regional conference of Pure and Applied Sciences, 10th -14th August 2010, Kenyatta University, Nairobi-Kenya.
9. **J. Okumu**, "Formation Mechanism of Noble Metal Nanoparticles in TiO₂ Thin Film", presented at 1st Alexander Von Humboldt Alumni Kenyan College Conference held on 24th-26th November 2010, Meridian Court Hotel, Nairobi, Kenya.
10. E Jobunga, **J. Okumu** and C.S. Singh, "Electron impact excitation of the lowest autoionizing state of potassium using distorted wave method. Presented in the XXVII international conference on Photonic, Electronic and Atomic collisions held in Belfast, Northern Ireland, UK on 27th July 2011.
11. J.M. Linturi, **J. Okumu** and C.S. Singh, paper presented in the 1st East African Regional Scientific conference of Pure and Applied sciences held at Kenyatta University, Nairobi, Kenya.
12. E. Jobunga, **J. Okumu** and C.S. Singh, "Electron Impact Excitation of lowest autoionizing state of Potassium using distorted wave method". Journal of Physics, Conference Series **388**,042031 (2012).
13. L. Ochoo, C. Migwi and **J. Okumu**, Thermal and Electric Field Enhancement effects of Metal Nanoparticles for Diagnostic and Therapeutic Application in Cancer and HIV Management 18th-21st July 2012 at Kenyatta University Conference Centre.

14. **J. Okumu**, "*Theory of the band gap formation in amorphous silicon.*" Proc. Regional Conference on Developments in material science and Physics Education (Nairobi) (1996).
15. **J. Okumu**, H. Weis, T. Petersen and M. Wuttig, "*Hydrogenation of Mg films for Optical Switches*". Pro. Regional workshop of Thin film Technology -Dar es Salaam (2000) p 52-56.
16. G.A. Ibitola **J. Okumu** and P.K. Karimi, "*High electron mobility Transistors: A review.* Proc. 5th Regional Conference on Material Science and Device Technology. Nairobi (2000).
17. **J. Okumu**, C. Salinga, and W. Wuttig, "*Gasochromic Switching in MoOx Thin Films* Deutschen Physikalischen Gesellschaft (German Physical Society) meeting, Dresden (24th -28th March 2003) Dresden (Germany).
18. **J. Okumu**, C. Dahmen, A.N. Sprafke M. Lysberg, G. von Plessen and M. Wuttig, "*Photochromic silver in TiO₂ matrix*, 8th European Vacuum Congress Berlin 2003 (23rd -26th June 2003)-Berlin (Germany).

Books

1. James Mugambi Linturi, Singh CS and **J. Okumu**, Electron Impact Excitation of Helium Atom, published by Lambert Academic publishing ISBN: 978-3-8433-7517-7 (2010)
2. Erick Ouma Jobunga, J. Okumu and C.S. Singh, Electron Impact: Excitation of the lowest autoionizing States of Alkalis using the Distorted wave method. VDM Verlag Dr. Muller Publishing Company, Germany (2010) ISBN 978-3-6392-9573-3

VIII. CONFERENCES / SEMINARS / WORKSHOPS

Participation in Workshop/Conferences

- 1) 2nd International Conference of the AVU, 2nd -3rd July 2015, "Linking open Education & e-learning Research Practice", Crown Plaza, Nairobi (Kenya).
- 2) Alexander Von Humboldt Alumni conference- The Power of Excellence in Science Enhancing Academic Capacities in Africa, held on 6th -8th March 2014, at Safari Park Hotel Nairobi (Kenya).
- 3) 1st Alexander Von Humboldt Alumni Kenyan College Conference-Synergy and Networking to Enhance Research and Development, held on 24th-26th November 2010, Meridian Court Hotel Nairobi (Kenya).
- 4) Capacity Building Workshop on implementation of the Constitution of 2010. Rule of Law and Governance in the new Constitutional Dispensation: Implications for state Corporations, 19th-20th January 2012 at Simba Lodge, Naivasha (Kenya) by Council of Legal Education.
- 5) Strategic Leadership and Change Management Workshop for Directors of State Corporations held at the Kenya Institute of Administration, 12th-13th Nov 2010, Nairobi (Kenya).
- 6) Management of University Departments/Schools/Directorates, held on 17th-19th March 2009, at Kenyatta University Conference Centre, Nairobi (Kenya).
- 7) 9th IEEE AFRICON Conference, 23-25 September, 2009, Safari Park Hotel, Nairobi (Kenya).

- 8) Workshop on Non-violence and Peace building for Public University Administrators, 21st-26th September 2009, Methodist Guest and Conference Centre, Nairobi (Kenya).
- 9) Knowledge and Research for Development in East Africa, 24th-25th October 2008, Nairobi Kenya, Laico Regency Hotel. (DAAD/AvH Alumni Seminar).
- 10) A Regional Workshop Held in Celebration of Scientific Revival Day of Africa, “The Role of Parliamentary Office of Science and Technology (POST) and Pairing Scheme between Parliamentarians and Scientists in East Africa”, June 29-30, 2007, Sarova Panafric Hotel, Nairobi (Kenya).
- 11) 25th General Assembly –International Union of Pure and Applied Physics, 26-28 October 2005, Cape Town, South Africa.
- 12) European Vacuum Congress, 23rd -26th June 2003, Berlin (Germany) - *Photochromic silver in a TiO₂ matrix*
- 13) DeutschenPhysikalischen Gesellschaft (German Physical Society) Meeting, 24th -28th March 2003, Dresden (Germany)- *Gasochromic Switching in MoOx Thin Films*
- 14) Kenya Physical Society National workshop on Physics Education: Challenges and Trends, 2000, Nairobi (Kenya).
- 15) Kenya Physical Society Regional Conference on Material Science and Device Development, 2000, Nairobi (Kenya).
- 16) 6th College of Thin Film Technology Workshop, 2000, University of Dar es Salaam (Tanzania).
- 17) Kenya Physical Society Regional Conference, 1996, Nairobi (Kenya).
- 18) 15th International Conference on Amorphous Semiconductors, Science and Technology, 1993, Cambridge (UK)/
- 19) Meeting on Amorphous Semi-Conductors, 1993, Kings College-London (UK).
- 20) 5th Annual Conference of Kenya National Association of Physicists, 1990, Nairobi (Kenya).

Presentation of papers at Academic and Professional Conferences

- 1) Thermal and Electric Field Enhancement effects of Metal Nanoparticles for Diagnostic and Therapeutic Application in Cancer and HIV Management, presented 18th-21st July 2012 at Kenyatta University Conference Centre.
- 2) “Induction Programme for New Academic Staff for Quality Management”, presented 8th-9th November 2011 during the International Deans’ Course Africa Part (2) held at Kenyatta University Conference Centre.
- 3) Gravity and Ground Magnetic Survey to Map the Subsurface Structure of Menengai Geothermal Area, presented in 2010 at the Geothermal Conference Kenya.
- 4) Photochromic Silver Nanoparticles in TiO₂ thin film presented at the 1st conference on Opto-Electronic Devices, held on 8th-9th July 2010, University of Nairobi Kenya.

- 5) Influence of Opto-electronic Properties of Silver Nanoparticles on the Light Absorption of Methylm Blue Dye presented at the 1st conference on Opto-Electronic Devices, held on 8th-9th July 2010. University of Nairobi Kenya.
- 6) 1st East African Regional Conference of Pure and Applied Sciences, presented 10th -14th August 2010, Kenyatta University, Nairobi-Kenya.
- 7) Formation Mechanism of Noble Metal Nanoparticles in TiO₂ Thin Films - presented at 1st Alexander Von Humboldt Alumni Kenyan College Conference held on 24th-26th November 2010, Meridian Court Hotel, Nairobi, Kenya.
- 8) Influence of Sputter Power and Chamber Pressure on the optical properties of tungsten thin films deposited by Magnetron sputtering presented at the 1st International Conference on Solar Energy Materials, held on 13th- 15th October, 2009, Dar es Salaam, Tanzania.
- 9) Multicolour Photochromism in Silver Nanoparticles in TiO₂ Thin Film Matrix presented on 1st International Conference on Solar Energy Materials, held on 13th- 15th October, 2009, Dar es Salaam, Tanzania.
- 10) Evidence- Based Advice to policy –A regional workshop held in Celebration of the Scientific Revival of Africa, June 27th to 28th 2008 organised by the Kenya National Academy of Sciences
- 11) Effective Testing and Evaluation in Science presented on 3rd March 2007, Catholic University of Eastern Africa, Nairobi-Kenya.
- 12) European Vacuum Congress Berlin 2003 (23rd -26th June 2003)-Berlin (Germany): *Photochromic Silver in a TiO₂ matrix.*
- 13) Deutschen Physikalischen Gesellschaft (German Physical Society) Meeting, presented on 24th -28th March 2003, Dresden (Germany): *Gasochromic Switching in MoOx Thin Films*
- 14) Kenya Physical Society National workshop on Physics Education: Challenges and Trends- presented in 2001 in Nairobi (Kenya)
- 15) Kenya Physical Society Regional Conference on Material Science and Device Development, 2000, Nairobi (Kenya)
- 16) 6th College of Thin Film Technology workshop, 2000, University of Dar es Salaam (Tanzania)
- 17) Kenya Physical Society Regional Conference, 1996, Nairobi (Kenya)
- 18) 15th International Conference on Amorphous Semiconductors, 1993, Science and Technology, Cambridge (UK)
- 19) Meeting on Amorphous Semi-Conductors, 1993, Kings College-London (UK)
- 20) 5th Annual Conference of Kenya National Association of Physicists, 1991, Nairobi (Kenya)
- 21) Kenya National Association of Physicists Regional Conference, 1990, Nairobi (Kenya)

Convening and Coordinating Conferences

- 1) Convener, DIES International Dean's Course, held in November 2011, Africa 2011-2012-Part II at Kenyatta University
- 2) Convener and Host of the Kenya Physical Society (KPS) National Conference held on 13-14th September, 2001 at Kenyatta University
- 3) Member of the local organizing committee of Kenya Physical Society (KPS) national, regional and international conferences (1999-2001).

IX. TEACHING AND MENTORSHIP

Teaching and Students Supervision

1) Courses taught at undergraduate level:

- Mechanics
- Waves and Optics
- Electricity and Magnetism I
- Modern Physics
- Quantum Mechanics
- Advanced Quantum Mechanics

2) Courses taught at Postgraduate level:

- Quantum Mechanics
- Mathematical Physics
- Condensed Matter Physics
- Thin Film Physics
- Advanced Quantum Mechanics

Ph.D Supervision

Completed

1. Dr. L.O. Ochoo
Thesis Title: Influence of Silver Nanoparticles on the Optical Properties of Methylene Blue and Curcumine.
Graduated 2013
2. Mr. Kariuki Peter Kinuthia (I84/25565/2011)-
Thesis Title: Comparison of the Optical Potential Method and the Distorted Wave Born approximation method in electron-atom elastic scattering.
Graduated 2015
3. Mr. Stanley Wambugu
Thesis Title: Effects of Hermanson's Spatial Dielectric Function on the total Energy of a Cubic Quantum Dot and Frequency Dependent Dielectric Function in Binary Semi-Conductors.
Graduated 2020

MSc. Supervision

Completed

1. Mr. Y.M. Wambua
Thesis Title: Computation of Electronic properties of amorphous Silicon". **Graduated 1996**
2. Mr. C.M. Mwiti
Project Title: The Hall Coefficient in Liquid Iron. **Graduated 1997**
3. Mr. J.M. Kamau
Project Title: Calculation of the Imaginary part of the Dielectric Constant in amorphous Silicon. **Graduated 1997**
4. Mr. E. O. Omondi
Project Title: Calculation of the Real Part Integral of the Density of states in Liquid Iron. **Graduated 1999**
5. Mr. J. W. Waithaka
Thesis Title: Gravity survey in Magadi Geothermal area. **Graduated 1999**
6. Mr. J.B. Ngaruiya
Thesis Title: Multiple Thermal switching Effects on the Stability of VO₂ Films. **Graduated 2000**
7. Mr. J.M. Kadima-
Thesis Title: A magnetic Survey of Banded Iron Formations in Migori Segment of the Nyanza Greenstone Belt. **Graduated 2001**
8. Mr. Emmanuel. Mapesa
Thesis Title: Optical properties of indium-tin-oxide thin films prepared by non-reactive DC magnetron sputtering. **Graduated 2005**
9. Mr. Nyaga Evanson Munene - I56/5065/2003
Thesis Title: A Numerical Model for Determining the Dispersion of Hydrogen Sulphide Plume from a Stationary Point Source. **Graduated 2006**
10. Mr. Joshua Rume Sangoro
Thesis Title: A numerical Model for Simulating the Flow of Reactive Ground Water Contaminants. **Graduated 2006**
11. Mr C. Wangati Kiama
Thesis Title: Optical Properties of DC Sputtered WO₃ Thin Films. **Graduated 2008**
12. Mr Erick Ouma Jobunga-I56/10294/06
Thesis Title: Electron Impact Excitation of Lowest Autoionizing States in Alkalis using Distorted Wave Born Approximation. **Graduated 2009**
13. Mr. Linturi James Mugambi- I56/10286/06
Thesis Title: A Distorted Wave Method Applied to Study the 2³S and 2³P Excitation of Helium Atom by Electron Impact. **Graduated 2009**

14. Mr Kariuki Peter Kinuthia-I56/CE/12353/04
Thesis Title: Calculation of Cross sections for Elastic Scattering of Electrons by Magnesium Atoms in the Intermediate Energy Region. **Graduated 2009**
15. Mr. Job Oqhoyho Mayaka
Thesis Title: Electron Impact Double Excitation of $(2s^2)^1S$ and $(2s2p)^1P$ states of Helium atom using a Distorted Wave Method. **Graduated 2009**
16. Mugah C. Onyango – I56/CE/11181/07
Thesis Title Characterization of $\text{Sn}_x\text{Se}_y\text{-ZnO}$: A1 P-N Junction for Solar Cell Application. **Graduated 2011**
17. Mr. Wilson M. Namasaka – I56/15633/2005
Thesis Title: Simulation of the Cosmic Ray Muon Charge Ratio at High Energy From 3 to 10 TeV. **Graduated 2012**
18. Mr. Langat G. Kipkemoi – I56/CE/11175/2007
Thesis Title: Gravity Survey for Geothermal Exploration in Menengai Area, Kenya. **Graduated 2013**
19. Mr. Ndeke William Murithi-I56/CE/14139/09
Thesis Title: Positron impact Excitation of 2^1S State of helium atom using a Distorted Wave Method. **Graduated 2013**
20. Mr. Kimei Josphat Kiprotich- I56/CE/11176/07
Thesis Title: Ground Magnetic Survey for Geothermal exploration in Menengai area. **Graduated 2013**
21. Mr. Paul Ngigi Kinyanjui-I56/CE/14141/09:
Thesis Title: Elastic scattering of Electron by calcium - atom using Distorted Wave Method. **Graduated 2013**
22. Mr. Peter Gitutu Mbugua - I56/10933/2004
Thesis Title: Differential cross section calculation for 2^1p magnetic sublevel excitation of helium atom by positron impact using a Distorted Wave method. **Graduated 2013**
23. Mr. Ntabari W.D Mururu - I56/CE/12243/2009
Thesis Title: Distorted Wave method applied to elastic scattering of electron by magnesium atom. **Graduated 2013**
24. Mr. Oketch Fredrick Omboga - I56/CE/14135/2009
Thesis Title: Distorted Wave method applied to electron impact excitation of the lowest autoionizing state of rubidium. **Graduated 2013**
25. Mr. Marucha Alex Magembe - I56/CE/14111/2009
Thesis Title: Positron impact excitation of lowest autoionizing state in rubidium atom using Distorted Wave method. **Graduated 2014**
26. Mr. Gichobi Peterson Muriithi - I56/CE/22406/2010
Thesis Title: Electron impact excitation of the lowest autoionizing state in cesium using Distorted Wave method. **Graduated 2015**

Ongoing

1. Mr. Ogembo Phelix - I56/CE/24432/2010
Thesis Title: Effect of exchange and absorption potential in the Distorted Wave calculation for electron impact elastic scattering of calcium.
2. Mr. Daniel T. Poghon - I56/CE/23136/2010)
Thesis Title: Electron impact excitation of autoionizing state of potassium using a distorted wave method with exchange and absorption potential.
3. Mr. Vincent O. O. Agutu - I56/CE/23526/2011
Thesis Title: Effect of exchange and absorption potential in the Distorted Wave calculation of electron impact excitation of autoionizing state of rubidium.
4. Mr. Aguyo A. Ochieng - I56/CE/26607/2011
Thesis Title: Effect of exchange and absorption potential in the Distorted Wave calculation of electron impact excitation of autoionizing state of cesium.
5. Mr. Suleiman M. Mwakwina - I56/CE/26609/2011
Thesis Title: Effects of exchange and absorption potentials in the Distorted Wave calculation of electron impact elastic scattering of magnesium.
6. Mr. Simon M. Paul - I56/CE/26620/2011
Thesis Title: Effect of exchange and absorption potentials in the Distorted Wave calculation of electron impact excitation of lowest autoionizing state of sodium.
7. Mr. Abednego W. Munywoki - I56/26173/2011
Thesis Title: Positron impact excitation of the lowest autoionizing state in cesium using Distorted Wave method.
8. Mutuku F. Kyalo - I56/26627/2011
Thesis Title: Positron impact excitation of lowest autoionizing state of lithium using a Distorted Wave method with absorption potential.
9. Elvick M. Onyancha - I56/24498/2012
Thesis Title: Positron impact elastic scattering of magnesium using Distorted Wave method.

X. MEMBERSHIP OF PROFESSIONAL BODIES

Kenya Physical Society (KPS)	1990 – 2005
German Physical Society) (Membership No. 030307)	2003 – to date
Member of the Kenya National Academy of Sciences (Membership No. KNAS/136/2007)	2007 – to date

XI. GRANTS, HONOURS AND FELLOWSHIPS

Internal and External Grants

- 1) Equipment Award from **Alexander von Humboldt Foundation** of €13,000 2005
- 2) **DAAD** equipment grant of €8,000 1999
- 3) Research Grant Award of \$9,000 from the **Third World Academy of Sciences (TWAS)** to carry out research on Thin Films for Smart Window applications 2000

Scholarship Awards

- 1) British Council Scholarship (PhD Studies) 1992 – 1996
- 2) German merit scholarship award for MSc Studies 1986 – 1988

Fellowships

- 1) **Alexander von Humboldt Foundation** renewed Research Fellowship 2008
- 2) **Alexander von Humboldt Foundation** Research Fellowship 2002 – 2003
- 3) **DAAD Fellowship** award for Research visits for Senior Academic staff 2000

XII. LOCAL, REGIONAL, INTERNATIONAL CONTRIBUTIONS

Appointment to Regional Committee

- 1) Re-appointed as a member of Quality Assurance Committee of the Inter-University Council for East Africa (IUCEA) July 2015
- 2) Quality Assurance committee member of the Inter-University Council for East Africa (IUCEA) 2013 - 2015

External Examiner in other Universities

- 1) Department of Physics, Jomo Kenyatta University of Agriculture and Technology
(**Alternative Degree Program**) 2000 – 2005
- 2) Department of Physics, Jomo Kenyatta University of Agriculture and Technology
(**Regular Degree Program**) 2006 – 2010
- 3) Department of Physics, University of Nairobi. 2007 – 2010
- 4) Department of Physics, Maseno University 2008 – 2011
- 5) Narok University College, Department of Physics 2010 – 2011

Networking and Collaboration with External Organizations

- 1) Training of 5 staff at PhD level through a collaboration with a German University
- 2) Collaboration with RWTH Aachen 1st Institute of Physics, Germany
Student training and staff exchange programme in material science 2005 – 2009
- 3) Member of the Alexander von Humboldt Foundation Network
Offer support young African Scientists in training and exchange of scientific information 2005 – date
- 4) DAAD Alumni Network 1989 – to date

Consulting for External Academic/Professional Organization/Institutions

- 1) Consultant in the Somali Higher Education Support Project (sub-contracted) 2018

Editorial Board of an International Journal

- 1) **Chief Editor**, East African Journal of Physical Sciences 2007 – 2009
- 2) **Associate Editor**, East African Journal of Physical Sciences 2005 – 2007

Referee for Professional Periodicals

- 1) Referee for the Journal of Discovery and Innovation 2000 - 2005

Visiting Scientist/Resource Person

- 1) Physikalisches Institut der RWTH, Aachen, Germany
Collaborative research in optical properties of Nanoparticles April – July. 2008
- 2) Physikalisches Institut der RWTH, Aachen, Germany
Collaborative research in Switchable Magnesium Hydrides April – July 2000
- 3) Physikalisches Institut der RWTH, Aachen, Germany
Sabbatical leave August 2002 – September 2003

XIII. COMMUNITY OUTREACH

- 1) Participated in **fund raising** activity for St. Joseph's Secondary School (Gul Kagembe), Rangwe Constituency in 2011
- 2) **Patron** of St. Joseph's Secondary School (Gul Kagembe) –Rangwe Constituency from 2009 to date
- 3) **Founder member** of St Joseph's Secondary School and participate in the development of the school from 2009 – to date
- 4) Participated in **fundraising** activities for the construction of Orero - SDA Church Homa-Bay in 2005
- 5) Participated in **fundraising** activities for the construction for KU- SDA Church