**DR. ROBERT BIRUNDU ONYANCHA**

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**PROFILE SUMMARY**

I am a steadfast lecturer with over 5 years’ experience at various high-learning institutions with diverse cultural and social backgrounds. Fast-learning, self-motivated professional with an ability to work independently or as part of a team and possess a strong verbal and written communication skills coupled with constructive and effective teaching and research techniques.

**EDUCATION**

June 2015 - Oct. 2018

**University of South Africa (UNISA)**

Ph.D. Physics (*graduated on 29th oct. 2018*)

Superconductivity and Energy PhD Fellowship Grant Recipient

**University of South Africa (UNISA)**

June 2012 – Oct. 2015

Masters in Physics *(Achieved with distinction ‘Cum Laude’ 81 %)*

Superconductivity and Energy Masters fellowship Grant Recipient

Sep. 2006 to Dec.2010

**Moi University**

BSc. Physics (*achieved with 2nd class upper honours of 67 %*)

**RESEARCH EXPERIENCE**

June 2015 – Oct. 2018

**University of South Africa (UNISA)**

*Ph.D. Research Fellow*

* Spearheaded collaboration between STEM group in UNISA and department of Applied Chemistry in the University of Tokyo
* Used electron spin resonance (ESR) spectrometer, physical properties measurement system (PPMS) and scanning electron microscope (SEM) to study iron pnictides superconductors
* Investigated Low Field Microwave absorption (LFMA) phenomenon in the normal and superconducting states of iron pnictides materials.
* Observed a novel LFMA in the normal state (observed for the first time in superconductors) of iron pnictides superconducting materials.
* Presented research work during ‘The 5th international conference of superconductivity and magnetism’ held in Fethiye, Turkey.

June 2012 – Oct. 2015

**University of South Africa**

*Masters in Physics*

* Synthesized and characterized SmFeAs(0,F) superconductor meant for Non-resonant microwave absorption (NRMA) studies
* Conducted NRMA in SmFeAs(O, F) superconductor and investigated its dependence on temperature, magnetic field and microwave power
* Established a structure of two-peaks, and line shape structure which was adequately interpreted based on damped motion of fluxons and microwave losses on Josephson junctions.
* Presented results during ‘The ninth international conference on vortex matter in nanostructured superconductors’ held in Rhodes, Greece

Feb. 2015 – Mar. 2015

**University of Tokyo**

*Summer Postgraduate Researcher*

* Acquired training on SEM, TEM and XRD equipment
* Synthesized iron-pnictides superconductors
* Characterized iron-pnictides materials: investigated granularity and calculated fundamental parameters like the critical magnetic field, transition temperature and critical current density
* Presented the results to the Applied Chemistry group at Tokyo University

**LEADERSHIP EXPERIENCE**

**Technical university of Kenya**

Nov. 2018 – to date

*Lecturer*

* Prepared course material and developed strategies to teach the course units by meeting the universities standards.
* Presented lectures and facilitated group learning in lecture rooms.
* Utilized appropriate educational technology to engage students and enhance learning.
* Connected students' current study to real-world applications, using lab and research assignments and linking coursework to previous/future study in related disciplines.
* Ensured that the content and level of material included on exams correspond to the course terminal objectives, that the material has been adequately addressed in the course, that concepts have been demonstrated.
* Demonstrated consistency and fairness in the preparation and grading of exams, making certain that all tests are formatted with proper instructions – and provide timely feedback to students.
* Provided multiple evaluative formats for students to demonstrate their knowledge and earn their grades in the course.
* Created an atmosphere of mutual respect in the lecture rooms by avoiding inappropriate comments about any individual, social group, or the college.
* Maintained proper records, grades, reports, and other documents and deliver them in a timely fashion to the appropriate academic administrator.
* Provided successful, active mentoring to university community
* Served on faculty committees as appointed or elected, and confer with advisory groups in order to modify course content.
* Completed other duties as assigned.

May 2018 – Oct. 2018

**Technical university of Kenya**

*Assistant Lecturer/Tutorial Fellow*

* Appointed to teach: 1st year course; Acoustics and Waves, Mechanics I: 2nd year courses; Physics of Polymers, Material Science and Modern Physics: 4th year courses; Solid State Physics and Physics of Materials
* Drafted interactive course material for undergraduate units which observed conformity and quality standards
* Drafted interactive teaching material for undergraduate units
* Developed, planned and implemented high quality curriculum for undergraduates
* Formulated, moderated, administered, marked and complied assessment tests and exams
* Ensured quality standards were observed by ensuring students strictly adhered to policies and regulations governing the institution
* Supervised and advised five 4th year honors students during their final year projects
* Coordinated and expedited meetings between Kenya National Hospital (KNH) and Technical University of Kenya (TUK) during Masters of medical physics curriculum development.
* Monitored student’s performance, progress and provided timely feedback on possible ways/areas of improvement
* Established linkages for student exchange programs and industrial attachment

Jan. 2018 – June 2018

**Machakos University**

*Part-time Lecturer*

* Selected to teach modern physics (2nd year course) and physics for engineers (1st year course) units
* Executed weekly class lectures and group discussions
* Prepared teaching and instructional materials for learners to ensure high standards and uniformity was maintained
* Arranged and demonstrated practical sessions at the laboratory
* Developed and administered assessment tests and exams
* Prepared, moderated, administered, marked, complied and reported assessment and exams
* Provided career guidance and student mentorship programs during consultation hours
* Participated in placements of students to attachment units and field trips which equipped them with on job skills

2015 – 2018

**University of South Africa (UNISA)**

*Ph.D. Research Fellow*

* Planned and developed yearly schedules for ESR and PPMS measurements that aided in smooth and efficient operations of STEM laboratory
* Trained 10 postgraduate students on the procedure and use of ESR spectrometer
* Organized BRICS international Symposium on Energy and Materials Innovation where 100 attendees graced the meeting
* Coordinated and performed ESR and PPMS measurements for collaborations

2015 – 2017

**University of South Africa (UNISA)**

*E-tutor and Face to face Tutor*

* Assigned a group of 50 students from SMI 181Q and PHY1506 modules
* Coordinated and conducted classes and laboratory sessions
* Marked and graded assignments and exams
* Supervised, mentored and advised students
* Designed and demonstrated models relating to physical phenomenon

**SKILLS AND INTERESTS**

Computer: MS office, Matlab, Origin, basic Linux and basic adobe Photoshop

Interests: Python, Java

**PUBLICATIONS**

* Novel normal-state low field microwave absorption in SmFeAsO1 xFx iron pnictide superconductors (Solid state commun. (2020) **307**: 113800
* R. B. Onyancha , J. Shimoyama , Jayashree Das, H. Ogino , U.O. Aigbe and V. V. Srinivasu: Novel normal-state Low Field Microwave Absorption in Iron Pnictide Superconductors; submitted to solid state communication journal.
* **R.B. Onyancha**, J. Shimoyama, J. Das, K. Hayashi, V. V. Srinivasu ‘Non-Resonant Microwave Absorption in SmFeAsO0.80F0.20: Line Shape and Structure Evolution with Temperature’ J. Supercond. Nov. Magn **30**:2429-2434 (2017)
* **R.B. Onyancha**, J. Shimoyama, S. J .Singh, H. Ogino, V. V. Srinivasu ‘Temperature Dependence Low-Field Microwave Absorption in a Powder Sample of SmFeAs(O,F) Iron Pnictide’ Superconductor (J. Supercond. Nov. Magn. **30** 1097 (2017)
* **R.B. Onyancha**, J. Shimoyama, S.J. Singh, K. Hayashi, H. Ogino, V. V. Srinivasu ‘Anomalous non-resonant microwave absorption in SmFeAs(O, F) Polycrystalline Sample (Physica C: Supercond. Appl. **533** 49 (2017)
* **R.B. Onyancha**, J. Shimoyama, S.J. Singh, H. Ogino and V.V. Srinivasu ‘Observation of a structure and line shape evolution of non-resonant microwave absorption in SmFeAs(O,F) polycrystalline iron pnictide superconductor’ (J. Supercond. Nov. Magn. **28**:2927–2934 (2015)

**REFEREES**

Professor V.V. Srinivasu **(**PhD Supervisor) Dept. of Physics-UNISA, Preller St, Muckleneuk, Pretoria

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Prof. George Amolo (CoD) Dept. of Physics and Space Science-Technical University of Kenya (TUK)

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