

YVES HERI KIMBELE

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RESEARCH AREAS

Space charge effects on short pulses beam profile

Space charge effects on the dynamics of short pulse gaussian and top-square beam profiles, phase-space trajectories of electrons in the diode vacuum gap, high-power vacuum devices.

Ultrafast phenomena

Ultrashort pulse transport, plasma-laser interaction, plasma-material interaction, plasma discharge and instabilities.

Machine learning and computational plasma physics

Machine learning algorithms to analyze large datasets of plasma simulation, and developing new machine learning methods for predicting plasma behavior or optimizing plasma simulations.

EDUCATION

Doctoral Student <i>Electrical and Electronics Engineering</i> Michigan State University (NanoPATH Group / Prof. Peng Zhang)	First year East Lansing, MI, USA
Master of Science <i>Mathematical Sciences</i> African Institute for Mathematical Sciences	August 2021 – June 2022 Kigali, Rwanda
Master of Science <i>Electrical Engineering</i> University of Lubumbashi	October 2015 – July 2017 Lubumbashi, Congo DR
Bachelor of Science <i>Electrical Engineering</i> University of Lubumbashi	October 2012 – July 2015 Lubumbashi, Congo DR

WORK EXPERIENCE

Assistant Lecturer University of Lubumbashi <ul style="list-style-type: none">Lecturing and student supervisionResearch	Started in May 2018 Lubumbashi, Congo DR
Intern Engineer CHEMAF Usoke <ul style="list-style-type: none">Engine preventive maintenanceCalculation of electrical conduits	May 2017 – October 2017 Lubumbashi, Congo DR

PROJECTS AND RESEARCH

Computational plasma physics and engineering <i>Doctoral Research</i> Michigan State University	Started in August 2022
Data analytics to identify electricity theft <i>Master Research</i> African Institute for Mathematical Sciences	January 2022 – June 2022
Design of an embedded solution for the detection of cardiac pathologies University of Lubumbashi	July 2020
Design and realization of an optimized PV system <i>Master Research</i> University of Lubumbashi	October 2017 – April 2018
Comparison of classical PID tuning methods <i>Bachelor Thesis</i> University of Lubumbashi	April 2015 – December 2015

PAPERS AND CONFERENCES

Space charge effects on the short pulse beam profile 50th IEEE ICOPS 2023	For May 2023
Price dynamics for net electric energy metering on a distribution network 2021 IEEE PES/IAS PowerAfrica	August 2021
Modelling of LV distribution network with preassembled aluminum cables ISTE OpenScience	June 2020
State of the energy sector in Congo Tabora Center Engineers' Conference	April 2017

HONORS AND AWARDS

AIMS Rwanda Excellence Award For the best performance of the AIMS Rwanda 2022 cohort	2021 - 2022
MasterCard Foundation Scholar The program aims to develop a cohort of ethical, enterprising and energetic young leaders who will lead and direct socio-economic transformation in Africa	February 2022
AIMS Rwanda Scholarship Merit-Based Scholarship to Pursue Masters Program in Mathematical Sciences	August 2021
MMG Scholarship for academic excellence Merit-Based Scholarship to Support Engineering Students with High Achievements at University of Lubumbashi	2016
Best Laureate in Electronic for the State Exam in the Katanga Province	2012

TEACHING EXPERIENCE

Programmable logic systems - ESI University of Lubumbashi	2020 – 2021 Lubumbashi, Congo DR
Power distribution networks - ESI University of Lubumbashi	2019 – 2020 Lubumbashi, Congo DR
Physics - Electromagnetism University Katumba-Mwanke	2018 – 2019 Kasenga, Congo DR

COMMUNITY INVOLVEMENT

Mount Hope tutoring program Assisting student of public schools with their weekly assignments and homework	Started in November 2022
Head of the scientific department of the cultural center of ESI In charge of organizing lectures given by various guest researchers and personalities	2015 – 2017 Lubumbashi, Congo DR
Soccer team manager Manager of Kids from my neighborhood who wanted to enroll in a soccer tournament but lacked adequate supervision	2015 Lubumbashi, Congo DR
Teacher of the basics of programming microcontrollers and robotics Teaching the basics of programming microcontrollers and robotics to several categories of young people ranging from elementary school to university level	Started in 2020 Lubumbashi, Congo DR

SKILLS

Languages: English, French (Native), Swahili
Programming: Python (NumPy, SciPy, Matplotlib, Pandas), MATLAB, Mathematica, Java
Document Creation: Microsoft Office Suite, LaTeX, Markdown