

# **CURRICULUM VITAE**

**EMMANUEL WENDSONGRE RAMDE**

**Nov 2021**

## Short Biography



Dr Emmanuel Wendsongre Ramde is a mechanical engineer, an energy specialist and project management, monitoring and evaluation expert. He is presently a senior lecturer and the immediate past director of The Brew-Hammond Energy Centre, Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana. From 2012 to 2019, Ing. Dr Ramde has served as the Ghana National Representative of the African Network for Solar Energy (ANSOLE) but from 2012, he has been serving as the Vice Regional Representative of ANSOLE in West Africa. He reads, writes and speaks both English and French fluently in addition to his mother tongue, Mooré.

Ing. Dr Ramde has about seventeen years of experience in designing, implementing, managing, monitoring and evaluating energy projects. He has been working with all the major regional and international development partners and national stakeholders. He has been teaching, consulting and conducting research in Energy including Renewable Energy and Energy Efficiency, Thermodynamics, Fluid Mechanics, Heat transfer, Refrigeration and Air Conditioning, Internal Combustion Engines, Turbo-machinery, Aerodynamics, Pneumatics and Hydraulics. He is also serving as visiting scholar, moderator of programmes, external examiner and scientific board member in a number of universities within and outside Ghana. He is a reviewer in a number of journals including Renewable and Sustainable Energy Reviews, African Journal of Science, Technology, Innovation and Development and British Journal of Applied Technologies.

Ing. Dr Ramde has been managing a number of energy projects and conducting consultancy jobs in the energy sector. Dr Ramde has been consulting for UNIDO, USAID, GIZ, AFREC, ECREEE through The Brew-Hammond Energy Centre and Arthur Energy Advisors, The World Bank through Danish Energy Management, The European Commission through AETS, etc.

Ing. Dr Ramde has completed all requirements for a Master's in Business Administration (MBA) in Finance at the School of Business of Kwame Nkrumah University of Science and Technology. He is waiting to graduate in the coming weeks

In November 2020, Ing. Dr Ramde has been made "Chevalier de l'Ordre de l'Étalon" (Knight of the Order of the Stallion), the highest national award of Burkina Faso conferred to people by the president for outstanding personal merit and distinguished service to the nation.

**Personal details**

Family name: RAMDE  
 First names: Emmanuel Wendsongre  
 Date of birth: 24-12-1971  
 Nationality: Burkinabe living in Ghana since 2001  
 Civil status: Married

**Education: PhD degree in Energy/Mechanical Engineering**

Institution (Date from - Date to)	Degree(s) or Diploma(s) obtained:
Kwame Nkrumah University of Science and Technology (KNUST) - Kumasi, Ghana 2017-2021	MBA Finance
Institut International d'Ingénierie de l'eau et de l'environnement/ KNUST 2009-2013	PhD degree in Energy/Mechanical Engineering
KNUST; Kumasi, Ghana 2001-2003	Master's degree in Mechanical Engineering
Joseph Ki-Zerbo University, Ouagadougou, Burkina Faso 1997-1998	Master's degree in Pure Physics (Maitrise)
Joseph Ki-Zerbo University, Ouagadougou, Burkina Faso 1996-1997	Bachelor's degree in Pure Physics (License)
Joseph Ki-Zerbo University, Ouagadougou, Burkina Faso 1993-1996	Second-year diploma in Physics and Chemistry

**Language skills:** Indicate competence on a scale of 1 to 5 (1 - excellent; 5 - basic)

Language	Reading	Speaking	Writing
English	1	1	1
French	1	1	1
Mooré	5	3	5

**Membership of professional bodies /Boards:**

- Member, Ghana Institute of Engineers (GhIE)
- Member, International Solar Energy Society (ISES)
- Member, African Network for Solar Energy (ANSOLE)
- Former member of American Society of Heating, refriger. and Air-Conditi. Engineers (ASHRAE)
- Steering Committee member, GIZ Project "Market Entry into Renewable Energy and Energy Efficiency for the Productive Sector in Ghana"
- Member of scientific and pedagogical advisory board of "Ecole supérieure des Métiers des Energies Renouvelables, ESMER", Cotonou, Benin
- Moderator of Programmes, Department of Energy and Environmental Engineering, University of Energy and Natural Resources, Sunyani, Ghana

**Honours and awards**

- November 2020: Chevalier de l'Ordre de l'Etalon (Knight of the Order of the Stallion), the highest national award of Burkina Faso conferred to people by the president for outstanding personal merit and distinguished service to the nation.
- February 2010: University of Michigan Presidential Award

**Other skills:**

- Excellent knowledge of ICT tools: hardware and software including programming and modelling, advanced internet searching, Microsoft office, etc
- Financial Modelling and Analysis of energy projects, off-grid and Grid-Connected Renewable Energy systems, solar PV and Concentrating Solar Power (CSP), Stand Alone Power System Design and installation; Solar thermal Technologies including Solar cooling, etc

**Present position:** Fellow of The Brew-Hammond Energy Centre and Senior Lecturer, Department of Mechanical Engineering

**Years within KNUST till 2021:** 17 years

## Curriculum Vitae-Emmanuel W. Ramde

### Teaching and Research focus

Renewable Energy and Energy Efficiency, Thermodynamics, Fluid Mechanics, Heat transfer, Refrigeration and Air Conditioning, Internal Combustion Engines, Turbo-machinery, Aerodynamics, Pneumatics and Hydraulics

### Key qualifications:

<p><b>Master's and PhD degrees in Energy/ Mechanical Engineering</b> from Kwame Nkrumah University of Science and Technology and from The International Institute for Water and Environmental Engineering, two of the leading tertiary institutions in the area of energy in Africa.</p>
<p>More than 17 years of professional experience in the energy sector</p>
<p>- <b>More than 17 years of professional experience in the field of renewable energy and energy efficiency</b> (technology, management and policy): grid-connected and off-grid renewable energy, solar PV, solar thermal technologies, wind energy, bioenergy, waste to energy, energy storage, smart energy systems, regulatory and institutional issues, Green entrepreneurship and business development, development and delivery of trainings.</p> <p>I also have about seventeen years of experience in designing, implementing, managing, monitoring and evaluating energy projects.</p>
<p><b>High proficiency in English and French</b></p>
<p><b>Proficiency in information communication technologies(ICT):</b> Excellent knowledge of ICT tools: hardware and software including programming and modelling, advanced internet searching, Microsoft office, Financial Modelling and Analysis of energy projects</p>
<p><b>Experience with Monitoring, Evaluation and data analysis:</b> Some of my research and consultancy services required data acquisition, validation, storage, processing and analysis. Examples of such experience are the EndDev evaluation and the evaluation of the USAID West African Energy portfolio.</p>
<p><b>Knowledge of the sub-Region and the issues and problems facing its energy sector:</b></p> <ul style="list-style-type: none"><li>• I am a Burkinabe resident in Ghana for the past 20 years. I have done and continue to do consultations in the energy sector affecting all of Sub-Saharan Africa in general and West Africa in particular.</li><li>• I have worked on projects that cumulatively cover almost all West African countries.</li><li>• I have a deep knowledge of the African and especially the West African energy landscape.</li></ul>
<p><b>Ability to lead the development, management/review of reports and papers on technical and policy issues:</b> Being a senior lecturer and a research fellow, having been Sectional Head, Thermo fluids and Energy Systems (2012-2014) and then Director of The Brew-Hammond Energy Centre (2017-2019) for which I am a founding member, having managed projects and conducted consultancy services, I have an excellent track record in developing and reviewing high quality and timely analytical reports and scientific publications.</p>
<p><b>Experience working with development partners</b></p> <p>More than 30 years of experience in development cooperation projects: I have been a youth leader in The Catholic church, member of the International Young Catholic Students (IYCS) and as early as my secondary school days, I have developed and implemented projects funded by development cooperation partners. Moreover, the centre that I headed has collaborated through projects and consultancy with almost all the major development partners which operate in the Developing World. I therefore have the exposure, the experience and the ability to manage relations with development partners.</p>
<p><b>Team leadership, teamwork and interpersonal skills</b></p> <p>The Brew-Hammond Energy centre that I have headed is multidisciplinary drawing its fellowship base across a wide range of departments within the university with over 60 fellows. This required excellent interpersonal and communication skills, human resource management techniques and team work which I possess.</p> <p>Furthermore, the knowledge that I have acquired during the MBA programme, in addition to my strong technical know-how, has really equipped me with the necessary soft skills to work in any challenging multi-disciplinary and multi-cultural environment.</p>

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**Specific experience in Africa:**

<b>Country</b>	<b>From – To (Date)</b>	<b>Country</b>	<b>From – To (Date)</b>
Ghana	2001- to date (resident)	Cameroun	September 2004
Burkina Faso	1971-to date(Citizen)	Cape Verde	Mai 2012; Juin 2015
Bénin	2015- to date	Cote d'Ivoire	November 2018
Gambia	July 2014	Kenya	December 2014
Morocco	February 2017	Sénégal	Oct. 2010, Nov. 2019
Egypt	December 2015		

**Other Countries**

<b>Countries</b>	<b>From – To (Date)</b>
Belgium, England, France, Germany, India, Italy, Poland, Spain, United States	2004-2020

## Professional experience

Date from - Date to	Location	Company & reference person <sup>1</sup> (name & contact details)	Position	Description
Feb. 2021-present	Benin	Application Européenne de Technologies et de Services (AETS) working for the EDF Funded RECASEB, Benin Joël YAO, AETS Afrique, Responsable Projets <a href="mailto:joel.yao@aets-consultants.com">joel.yao@aets-consultants.com</a>	Team Leader	EuropeAid/14029111H/SERIBJ: Support the Republic of Benin in acquiring a detailed atlas of the relevant renewable energy resources (solar, micro-hydro, wind, biomass, geothermal energy, tidal power) and to present the most attractive technologies for potential investors in line with national sector policies.
July 2015-Present	Burkina Faso	E.G. Energy Consult (EGEC)	Managing Director	EGEC strives to provide reliable, affordable, sustainable and innovative modern energy services, products and solutions to individuals, groups and organizations in the world at large and in Sub-Saharan Africa in particular. The vision of EGEC is to become a leading provider of sustainable and innovative modern energy services, products and solutions in Sub-Saharan Africa and beyond
Dec. 2018-Jan 2020	Ghana	Arthur Energy Advisors (AEA) Mrs. Harriette Amisssah-Arthur, Executive Partner of AEA Tel: +233 (0) 244235929 e-mail: <a href="mailto:harriette@arthuradvisors.com">harriette@arthuradvisors.com</a>	Associate Partner	Technical Assistance for the Implementation of the West African Solar Corridor, (ECREEE). I was a technical Team member that worked with the AEA project team in the preparation of concept notes and full funding application for the implementation of the West African Solar Corridor. The project seeks to assist some member countries (Burkina Faso, Sierra Leone, Nigeria) to advance their project ideas to the next stage such that they may attract the interest of investors for pre-appraisal or appraisal missions towards implementation.
Feb. 2019-Jan. 2020	Ghana	KNUST, Kumasi, Ghana Prof. Robert Abaidoo, Director, Office of Grants and Research; <a href="mailto:abaidoorc@yahoo.com">abaidoorc@yahoo.com</a> ;Tel: (+233) 243164323	Principal Investigator	Principal Investigator for the research project, Optimization of a Solar Tracking System for a Piloted Concentrated Solar Power. The general objective of this research study was to optimize the solar tracking system of a multi-faceted heliostat systems which forms an integral part of the CSP4Africa pilot system at Wa in the Upper West region of Ghana.
Aug. 2018-July 2019	Ghana	Danish Energy Management (DEM) working for The World Bank Morten Søndergaard for DEM and Aditya Alexander Lukas for World Bank; Email: <a href="mailto:mos@dem.dk">mos@dem.dk</a> and <a href="mailto:alukas@worldbank.org">alukas@worldbank.org</a> Tel: +4522486607 (Morten) +12022129012 (Aditya)	Consultant	The World Bank has initiated a project in Ghana aimed at identifying a set of demand-side electricity efficiency investments opportunities in public buildings. The objectives of the project are: to provide a concrete demonstration of the potential for energy saving in public buildings, to reduce the financial burden on public sector budgets, to reduce the peak load on the country's electricity supply infrastructure, to reduce the carbon footprint of public buildings and to provide a demonstration of leadership by the public sector.

<sup>1</sup> The Contracting Authority reserves the right to contact the reference persons. If you can not provide a reference, please provide a justification.

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June – Aug. 2019	Ghana	GiZ Gideon Plange, Technical Officer, Energising Development (EnDev): Email: <a href="mailto:gideon.plange@giz.de">gideon.plange@giz.de</a> Tel +233 540113375 / 209016786	Consultant	GIZ has contracted a 4-member team, of which I was a member, to independently conduct a rigorous and critical evaluation of the “Energising Development” project (EnDev) in order to measure its success or otherwise, as the project draws to a close. The objective of the evaluation is to assess the relevance, efficiency, effectiveness, sustainability and impacts of EnDev Ghana regarding productive use of electricity. EnDev Ghana had focused on economic development and energy access for small businesses until 2014, with emphasis on job creation. Since 2014, and in response to Ghana’s action plan under the Sustainable Energy For All (SE4ALL) initiative, the focus of EnDev Ghana was redirected to “Productive Use of Energy in Agriculture and Agro-processing” to increase productivity and profitability in small-scale intensive agriculture, linking energy to water and food security.
June 2019- May 2022 (ongoing )	Ghana, Germany	German Federal Ministry of Education and Research (BMBF) Prof. Dr Katja Bender, Executive Director, International Centre for Sustainable Development; Bonn-Rhein-Sieg University of Applied Science; Email: <a href="mailto:katja.bender@h-brs.de">katja.bender@h-brs.de</a> Tel +49 2241 865 9660	Co-Principal Investigator	Research Project “Energy-Self-Sufficiency for Health Facilities in Ghana, EnerSHelF” This research project is being funded by the German Federal Ministry of Education and Research (BMBF) to the tune of Euros 1,991,000. The main objectives of the project are to (1) develop and implement context specific market-based hybrid PV-energy solutions for health facilities in Ghana and improve their reliability and integrability into the local energy system, (2) develop context specific options and recommendations to strengthen governance structures within the energy and health sector to accelerate the diffusion of market-based hybrid PV solutions in Ghana’s health sector (3) derive at an integrated understanding of the interaction of institutional and technological change in the health-energy nexus by strengthening interdisciplinary collaboration between technical disciplines (engineering) and social sciences (development economics) and (4) facilitate the adoption of PV-based energy solutions in Ghana’s health sector and inspect the intersectoral and international transferability of research results by engaging in a process of evidence-based learning with all relevant stakeholders
Jan-Dec 2019	Ghana, France	Embassade de France au Ghana, France-Ghana NKABOM Programme Dr Sonia Couprie Technical Advisor in charge of France-Ghana Higher Education Cooperation and Research; Email: <a href="mailto:sonia.couprie@expertisefrance.fr">sonia.couprie@expertisefrance.fr</a> ; +233 507 14 91 27	Principal Investigator	This research deals with the analysis of the heat transfer enhancement (using passive methods) in flat-plate solar collectors (air or water) and their optimization for hot water production. The study is performed for a typical tropical climate (Kumasi, Ghana) as well as a typical temperate climate (Douai, France). The main goal is to passively increase the flow mixing in the solar collector ducts employing passive turbulators embedded in the flow (in a first step) and optimize the shape of these turbulators (in a second step) for heat transfer enhancement with low pressure drop penalty.
Sept. 2018- Sept. 2019	Ghana	Global Challenges Research Fund, UK through The Brew-Hammond Energy Centre Dr Eunice Akyeroko; Principal Investigator; Email: <a href="mailto:euniceaa@googlemail.com">euniceaa@googlemail.com</a> ; Tel +233 555241880	Co-Principal Investigator	The Implementation of Bio-Rural Energy Scheme (IBRES) for Ghana project is a collaboration between the University of Nottingham, UK (lead partner), The Brew-Hammond Energy Centre (TBHEC-KNUST), Centre for Energy Environment and Sustainable Development (CEESD, Kumasi), and the Cocoa Health and Extension Division of the Ghana Cocoa Board. IBRES is a research project which is investigating appropriate technologies for the sustainable conversion of Cocoa Pod Husk (CPH) into electricity and other alternative energy sources. It is funded by the Global Challenges Research Fund, UK.

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June 2016- Dec. 2019	Ghana, Morocco, Germany, Poland	UN Environment (UNEP) Richard Munang; UN Environment Climate Change Coordinator for Africa; Email: <a href="mailto:richard.munang@un.org">richard.munang@un.org</a> ; Tel +254714888918 / +254733430460	Board member of the Africa LEDS Project	The Africa LEDS Partnership (AfLP) is a partnership of individuals, organizations and African Governments working to promote low-carbon, climate-resilient development to support poverty alleviation, job creation and environmental management in Africa. The Brew-Hammond Energy Centre (TBHEC, KNUST) as the lead partner, hosted the Secretariat of the AfLP and spearheaded the overall coordination of activities of the Partnership. NREL (National Renewable Energy Laboratory, USA) supported TBHEC. The activities and Secretariat services were funded by US State Department, Department for International Development (DfID), UK, and the European Commission.
Oct-Dec 2018	Ghana	GIZ Dennis Turkson; Technical Advisor, Energy Efficiency; Email: <a href="mailto:dennis.turkson@giz.de">dennis.turkson@giz.de</a> ; Tel +233243500064/+233556489190	Consultant	The Brew-Hammond Energy Centre (TBHEC), under the leadership of Ing. Dr Ramde, was contracted by GIZ to implement in Kumasi a project called 'Energy Efficiency for households and SMEs. The objectives of the project were to increase energy efficiency in households and SMEs by giving free energy efficiency advice directly to them. As part of the project, TBHEC trained 200 young men and women in energy efficiency and energy auditing, who subsequently spread their knowledge by conducting up to 6,000 walkthrough energy audits in households and SMEs in Kumasi.
2013 – 2018	Ghana	North Rhine Westphalia State, Germany Belinda Knorr, Project manager; Email <a href="mailto:belinda.knoerr@giz.de">belinda.knoerr@giz.de</a> ; Tel: + 49 0211 8689-182	Team leader	Ing. Dr Ramde was the Team Leader for Solar Thermal and Air Conditioning for the project "Climate and Resource Protection for Sustainable Economic Development in Ghana". The objectives of the project were to (1) ensure a reliable, stable energy supply at KNUST through integration of renewable energies and to develop innovative measures for this purpose, (2) establish exemplary pilot and demonstration plants in the fields of renewable energies as well as energy and resource efficiency on KNUST campus in order to strengthen practice-oriented, applied tuition and research in these areas, (3) expand the competencies of University teaching staff and students.
March-May 2018	Ghana	Kwame Nkrumah University of Science and Technology Tel +233 (0)322060316/Email: <a href="mailto:provc@knust.edu.gh">provc@knust.edu.gh</a> Rev. Professor Charles Ansah	Consultant	Conducted a walk-through Energy Audit of Students' Halls of Residence at Kwame Nkrumah University of Science and Technology and recommended energy savings and energy efficiency measures.
August 2017 - July 2019	Ghana	The Brew-Hammond Energy Centre, Kwame Nkrumah University of Science and Technology (KNUST) The Registrar, College of Engineering, Lawyer Appiah Nkyi Tel: +233 (0) 208186138 Email: <a href="mailto:rappiahnkyi@yahoo.com">rappiahnkyi@yahoo.com</a>	Director	<ul style="list-style-type: none"> <li>Created in 2009, The Brew-Hammond Energy Centre (TBHEC) is a novel institutional mechanism which allows researchers from different disciplines in the university to work on energy related issues of national and international relevance. TBHEC provides training, research and advisory services to public and private actors in energy technology, policy and management.</li> <li>The centre is project-based and is financially autonomous.</li> <li>The responsibilities of Ing. Dr Ramde as director included defining the strategic direction and budget of the centre, implementing policies and making decisions, raising and managing the resources of the centre, overseeing the day-to-day running of the centre and implementation of all projects, reporting to the management board, to the University authorities and to the project partners, calling and chairing fellows' meetings, developing new project proposals and responding to calls for proposals, etc.</li> </ul>



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May 2017	Ghana	USAID -ASSESS Fedelis Dadzie, Chief of Party Tel: +233244797868 / +233 (0) 540113073 e-mail: <a href="mailto:fedelisdadzie@gmail.com">fedelisdadzie@gmail.com</a> <a href="mailto:fdadzie@assess-wa.org">fdadzie@assess-wa.org</a>	Strategic Planning Technical Rapporteur Expert	Ing. Dr Ramde was designated to Facilitate Power Africa Conference Participated fully in the meeting and performed the following: <ul style="list-style-type: none"> <li>• Took comprehensive notes of proceedings of the meeting;</li> <li>• Submitted to USAID-ASSESS a report, based on the notes taken, that precisely reflects the proceedings of the meetings;</li> <li>• Revise and finalize the report based on reviewers comments.</li> </ul>
December 2016	Ghana	USAID -ASSESS Fedelis Dadzie, Chief of Party Tel: +233244797868 / +233 (0) 540113073 e-mail: <a href="mailto:fedelisdadzie@gmail.com">fedelisdadzie@gmail.com</a> <a href="mailto:fdadzie@assess-wa.org">fdadzie@assess-wa.org</a>	Consultant	Ing. Dr Ramde led the learning sessions on West Africa's Regional Energy Institutions: West African Power Pool, WAPP, ECOWAS Centre for Renewable Energy and Energy Efficiency, ECREEE, ECOWAS Regional Electricity Regulatory Authority, ERERA
May 2015	Benin, Cape Verde, Ghana	USAID -ASSESS Fedelis Dadzie, Chief of Party Tel: +233244797868 / +233 (0) 540113073 e-mail: <a href="mailto:fedelisdadzie@gmail.com">fedelisdadzie@gmail.com</a> <a href="mailto:fdadzie@assess-wa.org">fdadzie@assess-wa.org</a>	Consultant	Ing. Dr Ramde was part of a two-member team who conducted the performance evaluation of USAID regional energy portfolio programs and projects which were implemented in West Africa between 2009 and 2014. <ul style="list-style-type: none"> <li>• Contributed technical input for executing the evaluation and provided input for assessing achievements and impact of the USAID/WA Energy program portfolio as well as the extent of the program's contribution to the objectives of the Power Africa initiative.</li> <li>• Assessed the relevance of the Energy program to regional partners, and the extent to which the program has contributed to the objectives of the regional Power Africa initiative for West Africa.</li> <li>• Based on analysis, provided information on major challenges faced by the energy program and suggested corrective actions to promote achievement of results.</li> <li>• Participated and contributed to working sessions to further analyze and triangulate information gathered related to energy production, efficiency and trade in West Africa. Participated in the review and provided timely input to team leader.</li> </ul>
August 2014- July 2016	Ghana	Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana Prof. Ahmad Addo; Director, The Brew-Hammond Energy Centre (2013-2015): Email: <a href="mailto:addoahmad@yahoo.com">addoahmad@yahoo.com</a> ; Tel: (+233) 244518346	Coordinator or MSc/MPhil in Renewable Energy Tech.	Coordinator of the MSc/MPhil programme in Renewable Energy Technologies: Course content development, selection of candidates, scheduling, budgeting and supervision. The course includes subjects like Energy Policy and Planning, Energy and Environment, Renewable Energy Project Analysis and Management, Solar thermal and solar PV, Wind power, Biogas, small hydro technology, Biofuels, etc

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2012- November 2016	Burkina Faso, Cape Verde, France, Ghana	African Union Prof. Ahmad Addo; Director, The Brew-Hammond Energy Centre (2013-2015). Email: <a href="mailto:addoahmad@yahoo.com">addoahmad@yahoo.com</a> Tel: (+233) 244518346	Principal Investigator and Project Coordinator	Ing. Dr Ramde co-developed the CSP4Africa Project proposal and served as the principal investigator and the project coordinator in Ghana. The project objective was to mainly develop a pilot cost effective concentrating solar power plants for electricity generation by designing and experimenting their components using local low-cost materials. This project started in June 2012 and lasted for 36 months. It was 74% funded by the African Union to the tune of 743, 096.16 €. The main beneficiary was the International Institute for Water and Environmental Engineering (2iE), Ouagadougou. Other partners in the project were The Brew-Hammond Energy Center, KNUST, the ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE) and SIREA, a private company in France.
April 2014	Ghana	African Network for Solar Energy (ANSOLE) Prof. Daniel Egbe, International Coordinator of ANSOLE Email: <a href="mailto:daniel.egbe@ansole.org">daniel.egbe@ansole.org</a> Tel: +4917620925862	Chairman of the Organizing Committee	The ANSOLE Regional scientific meeting for West Africa (ARMWA 2014) was held from 25 <sup>th</sup> to 26 <sup>th</sup> April 2014 at Kwame Nkrumah University of Science and Technology, Kumasi, Ghana. About 50 renewable energy experts, non-experts, scientists, researchers, industry experts from Austria, Burkina Faso, Canada, Cote D'Ivoire, Ethiopia, Ghana, and Togo attended ARMWA 2014 and presented oral communications on various Renewable Energy topics. The articles were subsequently published in the African Journal of Science, Technology, Innovation and Development; Volume 7, 2015 - Issue 6
September 2013- June 2014	Ghana, Gambia	UNIDO Lawrence Darkwah / Alois P. Mhlanga; Email: <a href="mailto:ldarkwah@gmail.com">ldarkwah@gmail.com</a> / <a href="mailto:A.MHLANGA@unido.org">A.MHLANGA@unido.org</a> ; Tel +233 246168726	RE Training Expert and Curriculum Developer	The purpose of the assignment was to build and strengthen technical capacity of relevant institutions within The Gambia with respect to renewable energy through both a "train-the-trainers" approach and through direct training. I assisted Dr Lawrence Darkwah, the international consultant, and developed training materials for both "Train-the-Trainers RE Expert Training" and "RE Curriculum Developers training" on solar thermal technologies. I also facilitated the training in The Gambia.
2012- 2014	Ghana	Kwame Nkrumah University of Science and Technology (KNUST), Kumasi, Ghana Samuel Sackey; Head of Department, Mech. Eng (2012-2014) Email: <a href="mailto:sackeyism@yahoo.com">sackeyism@yahoo.com</a> Tel: 0242232239	Head of Section, Thermo-fluids and Energy Systems; Dept of Mech. Engineering	The Department of Mechanical Engineering is organized into sub-departmental sections: Thermo-fluids and Energy Systems Engineering; Design and Manufacturing Engineering; Applied Mechanics and Automobile Engineering and Industrial Engineering. Ing. Dr Ramde was the head of section, Thermo-fluids and Energy Systems Engineering. His responsibilities included assisting the Head of Department, Mechanical Engineering, leading, managing and developing the section, setting and advancing the Department's strategic plan in consistence with the University strategic plans, developing new courses and improving the curricula, organizing the teaching and research agenda of the section and ensuring the highest levels of quality, integrity and ethics.
1 June – 31 July 2014	Ghana, Kenya	African Energy Commission (AFREC) Tel: +213 21 69 48 68/Email: <a href="mailto:marzouka@africa-union.org">marzouka@africa-union.org</a> Mr. Atef Marzouk, Executive Director	Consultant	Ing. Dr Ramde led a team at The Brew-Hammond Energy Centre to develop two Technical Guides for the Design, Installation, Operation and Maintenance of (1) Solar PV-Based Mini-Grid for Rural Electrification in Africa and (2) Grid Connected Small Wind Farms in Africa. The technical guides provide a step-by-step guide on how to plan, design, install and operate a wind based and Solar PV-Based Mini-Grid power systems that will feed an Africa village (or group of villages) with electric power.

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2012 to date	Ghana	Department of Mechanical Engineering, KNUST The Registrar, College of Engineering, Lawyer Appiah Nkyi Tel: +233 (0) 208186138 Email: <a href="mailto:rappiahnkyi@yahoo.com">rappiahnkyi@yahoo.com</a>	Senior Lecturer	Ing. Dr Ramde has been lecturing the following modules Air conditioning and Refrigeration, Renewable Energy Conversion, Solar Thermal and solar PV Technologies, Wind energy Technology, Energy conversion and utilization, Thermodynamics, Heat transfer, Internal Combustion Engines, Fluids Mechanics, Turbo-machinery, Aerodynamics, Pneumatics and Hydraulics, Mechanical Engineering Laboratory. In addition he organizes and facilitates workshops for the students and other stakeholders in the energy sector.
October 2010	Ghana, Senegal	ECOWAS Regional Centre for Renewable Energy and Energy Efficiency (ECREEE) Mr. Mahama Kappiah, Executive Director of ECREEE Tel +238 26 04630 +2389801317/Email: <a href="mailto:MKappiah@ecreee.org">MKappiah@ecreee.org</a>	Consultant	Ing. Dr Ramde co-wrote a discussion paper on "Potentials, Opportunities and Barriers for the Deployment and Usage of Solar Energy Technologies and Services in West Africa" for the ECREEE/UNIDO Regional Forum on the ECOWAS Solar Energy Initiative (ESEI) held in Dakar, Senegal from 18th to 21st October 2010. The paper highlighted the potentials, benefits, costs and feasibility of solar energy-based solutions for electricity generation, heating and cooling services and its deployment in the ECOWAS region.
Aug. 2008 - Dec 2011	Ghana, Burkina Faso, France	European Union Dr David Anipa; Project coordinator Tel: (+233) 208165502 Email: <a href="mailto:davidanipa@yahoo.com">davidanipa@yahoo.com</a>	Deputy project coordinator	Renewable Energy Education Project (REEP) Ing. Dr Ramde assisted in the following tasks <ul style="list-style-type: none"> <li>• Co-wrote the proposal for this project with award amount of 417, 528.57 Euros.</li> <li>• Conducted training programmes in renewable energy technologies for field engineers and technicians, undergraduate and postgraduate students, and employees of public institutions and private enterprises.</li> <li>• Implemented a distance learning Master's programme in Renewable Energy Technologies</li> </ul>
Aug-Dec 2011	Ghana	UNIDO Patrick Nussbaumer: Department of Energy; Email: <a href="mailto:p.nussbaumer@unido.org">p.nussbaumer@unido.org</a> ; Tel +43 1 26026 3812	Consultant	Ing. Dr Ramde coordinated and managed the assessments of national capacity for measuring and reporting on energy poverty in 5 countries in 5 West African countries (Burkina Faso, Gambia, Ghana, Senegal, Sierra Leone). I provided guidance and ensured consistency in the treatment and presentation of the information throughout the 5 countries, as well as organised and contributed to the review of the national assessments. From the 5 national assessments, I then distilled the information into an overall report. The findings of the report served as input to an expert group meeting during which lessons learned, gaps identified, and possible ways forward were discussed
Jan-March 2008	Ghana	Ministère des Mines, des Carrières et de l'Énergie, Burkina Faso Projet MEPREB-European Commission Theresa Osei-Tutu; Consultant; Email: <a href="mailto:akos@thclr.com">akos@thclr.com</a>	Consultant	Under MEPRED (Mainstreaming Energy for Poverty Reduction and Economic Development) two consultants namely Abeeku Brew-Hammond and Theresa Osei-Tutu were hired in order to (1) review the modalities for aid and support for capital mobilization by a number of international banking groups, (2) review the existing financing means and their effectiveness, (3) formulate proposals for financing from public and private fund providers to improve access to Basic Energy Services for individuals and communities and (4) develop financing models for Basic Energy Services at the individual and community levels (purchase of equipment, leasing/outright sales, payment for services, notions of service companies, concessions, etc). Ing. Dr Ramde assisted the two experts in conducting this consultancy work

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June- July 2007	Ghana	African Union Philippe Niyongabo; Head of Energy Division; Email: <a href="mailto:niyongabo@africa-union.org">niyongabo@africa-union.org</a>	Consultant	Writing of a background paper titled "Biofuels Industry Development in Africa" for the African Union (AU)/ Brazil/ UNIDO High Level Seminar on Biofuels in Africa, 30 July – 1 August 2007, Addis Ababa, Ethiopia. The paper presented issues such as the available conversion technologies, the benefits of biofuels, global market trends, sustainable means of production, lessons to be learnt from Brazil and other countries like India and Malaysia, frameworks and policy guidelines for adoption by African Governments, etc.
Aug.- Dec 2004	Ghana Cameroun	GEF through Kumasi Institute of Technology and Environment (KITE) Ishmael Edjekumhene; Exec. Director; Email: <a href="mailto:iedjekumhene@kiteonline.net">iedjekumhene@kiteonline.net</a> Tel +233204368574 / +233244268574	Consultant	With the support of some development partners such as GEF, UNDP, UNEP, AfDB, UNIDO, 11 francophone countries in Sub-Sahara Africa have put their efforts together in a project called « regional project capacity building in micro/mini hydropower and investment for the supply of basic services in rural area ». Different consultancy firms were contracted to conduct the technical, financial, environmental, legal and institutional feasibility studies. Kumasi Institute of Technology and Environment (KITE) was also contracted to perform quality control on all reports submitted by the various consultants. Ing Dr Ramde was part of the three-member team working for (KITE) under this project.

## Some selected Publications

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3. Vinci de Dieu Bokoyo Barandja, Bienvenu Magloire Pakouzou, **Emmanuel Wendsongré Ramdé**, Jean M'boliguipa, Mamoudou Saria, Martial Zoungrana, Issa Zerbo, Modeling the response of an illuminated polysilicon solar cell under the influence of radio waves, a 3D approach, *Energy Reports*, Volume 7, 2021, Pages 2094-2100, ISSN 2352-4847, <https://doi.org/10.1016/j.egy.2021.04.015>
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