

ANSOLE e-Magazine 4/2018



Safiatou Nana



Dear ANSOLERS, Friends and Network Partners,



At the beginning of 2018, I want to wish all of us, a successful new year full of peace, happiness, health and forgiveness. 2017 was the year that most of our fellows completed their PhD and some of them got married. We congratulate and are very proud of them! We also congratulate Clarisse Nibagwire, our National Representative in Rwanda for her wedding at the beginning of January this year.

God turned the trials and difficulties that I went through in 2017 into blessings for our network: ANSOLE e.V. was privileged to initiate and co-organise the maiden Africa Day in the City of Jena. This served as a base to apply for funds to create a focal point for migrants of African origin with the German acronym AMAH (*Anlaufstelle für Menschen afrikanischer Herkunft*). After obtaining the funding approval, on the 12th of January 2018 we were able to hire a manager for the AMAH project. Ms Simona Fofie from Ghana is the very first employee of ANSOLE! The AMAH project allows us for the first time to have our own office at the Wagnergasse 25, 07743 Jena, Germany. ANSOLE is grateful to Ms Rea Mausberger from Brazil, the City of Jena and the State of Thuringia for making AMAH possible. As such, ANSOLE is built on two pillars. On the one hand, we focus on our traditional African-based capacity building activities and, on the other hand, we contribute in the integration and acceptance of African migrants into the German society through the AMAH initiative.

I thank all of you who contributed in keeping ANSOLE alive in 2017.

This issue reports mainly on activities in 2017 and urges African ladies and others to support African products by

purchasing “Yiri accessoires” of the young Burkinabe Designer and ANSOLER Safiatou NANA (front cover).

Your contribution will help sustain our e-Magazine. Please submit it at editorial@ansole.org.

I invite you all to celebrate with me the 7th anniversary of ANSOLE on Sunday, February 4. For those living in Linz Austria, the celebration will take place in the Evangelische Gemeinde Freistädter-Str 10, 4040 Linz, with a testimony and thanksgiving service as from 9.30 am. We thank God for bringing us so far! Stay blessed

Daniel A. M. Egbe
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Publishing date:
26.01.2018



Join the ANSOLE LinkedIn group now

This new LinkedIn group will allow you to easily share news about jobs, funding and conferences related to renewables in Africa with the other > 1000 members of the African Network for Solar Energy. Info: <https://www.linkedin.com/groups/13573724>

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About ANSOLE:

The African Network for Solar Energy (ANSOLE) promotes research, education and training in the field of solar energy among Africans as well as non-Africans with a special focus on - and relationships with - Africa.

As outlined in its by-laws, ANSOLE supports non-profit activities in the field of development aid and cultural exchange with the aim of strengthening the dialogue between the North and African countries (north-south) and among African countries (south-south) on renewable energy.

It endorses the use of solar energy to the benefit of the social and economic development of Africa as well as environmental protection through:

- Education and training of African scientists, experts and students
- Exchange of students and visiting scientists
- Workshops, conferences and meetings in Africa
- Organising and implementing projects and programmes on renewable energy
- Promoting capacity building in the use of renewable energy in Africa for all

ANSOLE members and those acting in the name of ANSOLE accept and act in accordance with the association's by-laws.

Mention of conferences, companies, or products in this document does not automatically constitute an endorsement.

Donations to:

ANSOLE e.V: Bank: Sparkasse Jena,

IBAN: DE52830530300018025668,

BIC: HELADEF1JEN

ANSOLE e.V.: Register of Associations at the Local Court Jena N°: VR 231505

Publishing information:

ANSOLE: African Network for Solar Energy

Wagnergasse 25, 07743 Jena, Germany

Websites: www.ansole.org /www.ansole.com/www.baleware.org/

www.facebook.com/ANSOLE.Africa/

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Editorial board of ANSOLE e-Magazine 4: Sarah Holliday, Priscillia M. Manjoh and Daniel A. M. Egbe



Reporting on...

ANSOLE Activities in 2017

By **Daniel A. M. Egbe**

Local focus in Jena

In addition to its traditional mainly Africa-based international capacity building activities, ANSOLE began in 2017 to direct its attention on local activities in Jena, Germany, where it has been registered as an NGO, especially after becoming part of *MigraNetz Thüringen*, a network of migrant organisations in the German Federal State of Thuringia. A focal point for African migrants in Jena has been created through the AMAH project. From now on, Africans in Jena can turn to ANSOLE e.V. for counselling in cases of racism and discrimination and for issues pertaining to their day-to-day life. The AMAH project, through cultural and educational activities, aims to facilitate the acceptance and integration of African migrants within the local German society.

6th anniversary celebration

As co-supervisor of the PhD thesis of Dr. Sameh Boudida, I was invited by the University of Tebessa to attend her PhD defense on "*Matériaux Conjugués Contenant de l'Anthracène pour des Applications dans l'Optoélectronique: Synthèse et Etudes des Effets des Chaines Latérales.*" The defense was held on February 2nd. While waiting for my return flight in Algiers, I was able to celebrate the 6th anniversary of ANSOLE together with local ANSOLE members in the morning period of the 4th of February. In the afternoon of the same day I visited the biggest Algerian University, *Université des Sciences et de la Technologie Houari Boumediene* (USTHB). This was upon invitation of our member Professor Nadia Saidi (née Amroun), *Directrice de Recherche, Chef de l'équipe Matériaux Diélectriques*. We discussed the possibility of organising a scientific event at USTHB at the beginning of July 2017, which did not materialize due to time constraint.



Left: Ms Sameh Boudida (2nd from the right) after her PhD defense on the Feb 2nd. Right: Celebrating ANSOLE's 6th anniversary in Algiers on Feb 4th.

Membership

Through capacity building activities and networking, ANSOLE gained 137 new personal members and 2 new institutional members (SIREA Group and MedTech) making it to 1060 members located in 44 African and 30 non-African countries. We presently have 7 institutional members:



UPPSALA
UNIVERSITET



Deutsches Zentrum
für Luft- und Raumfahrt
DLR
Institut für
Vernetzte Energiesysteme



- DLR Institut für Vernetzte Energiesysteme, Oldenburg Deutschland
- International Science Programme (ISP), University of Uppsala, Sweden
- Institute of Polymeric Materials and Testing (IPMT), Johannes Kepler University Linz, Austria
- ACWA POWER, Dubai
- Ecole Supérieure des Metiers des Energies Renouvelables (ESMER), Cotonou, Benin
- SIREA Group, France
- Mediterranean Institute of Technology (MedTech), Tunisia

We thank the 87 members (8.20 % of 1060) who paid their membership fee in 2017. In total 194 members (18.21 %) have paid at least once their membership fee. We hope to see an increase in 2018 in the percentage of paying members.

Activities

1. Fellowship Programmes

In 2017 the ICTP (The Abdus Salam International Centre for Theoretical Physics) decided to terminate its financial support to our fellowship programmes (INEX, ANEX and ANSUP). ANSOLE is, however, very grateful to the support received between 2011 and 2015 from the ICTP, which has enabled us graduate 11 PhDs and 1 MSc between 2014 and 2017 as depicted in the Table below.

Name/Sex	Nationality	Institution	Type of fellowship	Graduation
Safae Aazou (female)	Morocco	University of 'El Jadida/JKU Linz	ANEX (PhD)	21 May 2014
Shaimaa Ali Mohamed (female)	Egypt	Benha University/ JKU Linz	ANEX (PhD)	23 May 2015
Alain Kossoun Tossa (male)	Benin	2iE, Ouagadougou Burkina Faso	ANSUP (PhD)	26 February 2017
Mohamed Izzedine Serge Adjibade (male)	Benin	Cheikh Anta Diop University, Dakar Senegal	ANSUP (PhD)	9. October 2016
Araba Amo-Aidoo (female)	Ghana	KNUST, Kumasi Ghana	ANSUP (Masters)	August 2016
Mariem Guesmi (female)	Tunisia	Faculté des Sciences de Tunis-Elmanar/ JKU Linz,	ANEX	6. October 2017
Hervé Tchognia	Cameroon	Université de	INEX (PhD)	26 October 2016

(male)		Yaoundé I/ Université de Mohammedia		
Duvalier Pené (male)	Cameroon	Université de Ngaoundéré /Université de Mohammedia	INEX (PhD)	19. June 2017
Sameh Boudiba (female)	Algeria	Université de Tebessa /JKU Linz	ANEX (PhD)	2. February 2017
Nassima Bougerra (female)	Algeria	Université de Bejaia/ JKU Linz	ANEX (PhD)	3. July 2017
Vivian Suru John (female)	Nigeria	University of the Western Cape/ JKU Linz	ANEX (PhD)	August 2017
Serge Nitedem (male)	Cameroon	2iE, Ouagadougou Burkina Faso	ANSUP (PhD)	December 2017



Some of ICTP-ANSOLE graduates. From left: Araba Amoo, Nassima Bougerra, Mariem Guesmi, Serge Adjibade, Serge Nitedem, Vivian John, Duvalier Pene and Alain Tossa.

One last supported male student, Mr Aimadji Moudarinan from Chad, presently studying at the Hassan II University of Casablanca, is expected to complete his PhD in 2018.

We presently halted the fellowship programmes until we get new sponsors. I will be grateful to our members and friends who will be actively involved in the search for new sponsors of all kinds.

2. Co-Organisation of Events

In 2017 ANSOLE (co)organized the following gatherings:

- VolkswagenStiftung sponsored Summer School on “Sustainable Energetics for Africa” (SE4A), 27.02-03.03.2017, 2iE, Ougadougou, Burkina Faso
- ANSOLE DAYS 2017, 5-8. May 2017, Hamammet, Tunisia
- VolkswagenStiftung sponsored Summer School on “Sustainable Energetics for Africa” (SE4A), 31.07-04.08.2017, PkFokam Institute of Excellence, Yaounde & FET, University of Buea, Cameroon
- Africa Day 2017 in Jena, 20 May 2017, Jena Germany
- 1st ANSOLE General Assembly in Rwanda, 08.12.2017, Kigali, Rwanda
- 7th ANSOLE e.V. General Assembly, 09.12.2017, Jena, Germany
- 3rd ANSOLE General Assembly in Cameroon, 18.12.2017, ENSTP Yaounde, Cameroon

- 4th ANSOLE National Conference in Cameroon (ANSOLECAM 2017), 19.12.2017, ENSTP, Yaounde, Cameroon

A. Summer Schools

With funding from VolkswagenStiftung, ANSOLE and partners organised two summer schools in 2017 on the theme “Sustainable Energetics for Africa (SE4A)”.

The first school was held from the 27th of February till the 3rd of March 2017 at 2iE, Ouagadougou, Burkina Faso. It was attended by 65 participants from 18 nations and officially inaugurated by the Burkinabe Minister of Energy, Prof. Alfa Oumar Dissa, who is an active ANSOLE member. It consisted of 4 days of lectures and poster presentations, 1 day tour of the RE experimental facilities of 2iE, and rehearsals of a piece on Theater for Development (TFD) during the first 4 evenings under the supervision of Dr Emelda Ngufor Samba. We also held discussions on the energy scenario in 2050 under the leadership of Prof. Dieter Meissner (also during the first 4 evenings), and finally the conference dinner, which saw the performance of the TFD piece, presentation of the energy scenario in 2050, award of 3 poster prizes (all won by 3 ladies: Ms Vivian Nwadiaru Ogechi of PAUWES, Tlemcen, Algeria, Ms Fatou Ndiaye of Gaston Berger University, Saint-Louis, Senegal and Ms Sibiath Osséni of the University of Abomey-Calavi, Benin) and award of gifts and certificates of participation by the ANSOLE coordinator.



Group picture of the Summer School in Ouagadougou (27.02-03.03.2017) together with the Burkinabe Minister of Energy, Prof. Alfa Oumar Dissa.



Left: Theater for Development rehearsal session. Right: Professor Dieter Meissner explaining the functioning of a solar cooker to the students.

The second school was held in two Cameroonian institutions, PKFokam Institute of Excellence in Yaounde and the University of Buea, from the 31st of July till the 4th of August 2017.

The 2nd school witnessed the attendance of 75 participants from 26 nations, It was covered by 3 TV stations (Vox-Africa, Canal 2 and CRTV) and many local Cameroonian newspapers. 7 lecturing participants and a female student participated at the production of two TV broadcasts in French (<https://www.youtube.com/watch?v=34e-gE6Qq68&t=3542s>) and English on “Sustainable Energetics”. The School consisted of 2.5 days of lectures and poster presentations at PKFokam Institute of Excellence in Yaounde, 1.5 days practical sessions (9 groups of students rotated through 9 experimental platforms namely, outdoor wind station, indoor wind station, hydroelectric station, outdoor solar energy station, indoor solar energy station, a PLC control system for load and battery, labview simulation of a hybrid solar-mini hydro system, solar thermal station, and indoor hydrogen station) at the Faculty of Engineering and Technology of the University of Buea (UB) (after spending 6 hours travelling from Yaounde to Buea and checking-in at the Buea Mountain Hotel, which recently “went solar” during its renovation), an excursion to Limbe to the Bimbia slave trade shipping port and a conference dinner, which was held similar to that of Ouagadougou, in addition to the performance of a live music band sponsored by UB. All 3 poster awards were also won by ladies: Ms Nothando Ndlovu from Zimbabwe, Ms Asma Saaidia from the Faculty of Science Tunis, Tunisia and the Kenyan Ms Jacinta Akoth Okwako from PAUWES, Tlemcen, Algeria.



Group pictures of summer school 2 in Yaounde (left) and Buea (right) in Cameroon.

The first part of the 2nd school was inaugurated by the Rector of PKFokam Institute of Excellence, while the second part was inaugurated by the Vice-Chancellor of UB, Prof. Ngome Horace Manga, in the presence of his deputies and a representative of the Mayor of the city of Buea. The ceremony was highlighted by song performances of the UB choir.

The lectures of both schools were filmed in order that they could be placed online for a broader impact.



Opening Ceremony of 2nd part of School 2 at the University of Buea. Left: opening speech of the Vice-Chancellor of UB. Right: Music performance of the UB Choir.

I thank the University of Buea for financial support and for putting at our disposal 3 minibuses. I also acknowledge the support received from the Advanced School of Public Works (ENSTP) in Yaounde by also putting at 2 buses at our disposal in during our stay in the capital city.



Summer school 2 in Buea. Left: Practical training session. Right: Excursion in Limbe at the Bimbia slave trade shipping site.

B. ANSOLE DAYS 2017

ANSOLE DAYS 2017 (International Conference on Solar Energy Materials and Applications) was held from the 5th to the 8th of May 2017 in Hamammet Tunisia. It was co-organised by ANSOLE and the Centre de Recherches et des Technologies de l'Energie (CRTE) of Tunisia. More than 260 scientists from 27 countries submitted abstracts to the event and around 160 actually traveled to Tunisia.



Group Picture of ANSOLE DAYS 2017

The event was highlighted by the organisation of a science and entrepreneurship slam sponsored by RECP (Africa-EU Renewable Energy Cooperation Programme) and the Finnish universities entity UNIPID and colorful and joyful conference dinner.

The event gave an opportunity for ANSOLE members present to reflect on the future of the network. Most of them were sad after learning that the ICTP has terminated its financial support to our fellowship programmes. Some suggested to make ANSOLE website a match-making platform.



Slam competition. Left: Jury members listening to the various presentations. Right: Slam contestants together with UNIPID and RECP representatives.

3. Africa Day 2017 in Jena

The African student community in Jena in collaboration with ANSOLE e.V., MigraNetz Thüringen and Iberoamerica e.V. organised the maiden „Africa Day“ on the 20th of May 2017, which was my 51st birthday! This resulted from the desire to create a platform of expression of students and migrants from Africa at the city of Jena. Prior to the event, a series of consultation meetings (6 in total) were held with African students and migrants, local authorities and representatives of migrant organisations to discuss the role of African students and migrants as bridge builders and facilitators of a multicultural society in Germany with the aim to contribute in the fight against racism.

The Africa Day consisted of two parts:

Part 1: Mini-conference on Africa and Photo exhibition, 13.30-17.00 pm, Haus auf der Mauer, Jena

After a general presentation of ANSOLE, 7 lectures were held by African students in Jena. The topics were: “21st Century Africa: The Ludwicks, Kelvins and the Chimamandas”, “An Africa Beyond Aid“, “The relation between modernisation and poverty in Ghana”, “Dictatorship, Democracy, Development: African Case”, “Energy Transition in Morocco”, “Renewable Energy Situation in Africa” and “Climate Change and Migration: Case Study of The Gambia”. Intensive discussions followed each lecture underlining the great interest of the audience. Stark and controversial discussions arose after one lecturer mentioned the negative influence of the self-made Pentecostal churches in the African society. The audience wished more time for discussions in the upcoming conferences on Africa.

During the coffee break, the participants admired the exhibited photos emanating from my solar energy research.



Africa Day 2017 in Jena: Mini-conference and photo exhibition

Part II: Evening Gala “Africa Today and Beyond“ 19.30pm - 2.00 am, Mensa Ernst-Abbe-Platz 8, Jena

The second part of the event offered the possibility of cultural exchange between African students and migrants living in Jena and the general public. It was attended by approximately

400 participants from Jena and surrounding cities (Weimar, Erfurt, Ilmenau, Berlin). It consisted of speeches from representatives of the state of Thuringia, the city of Jena and migrant organisations, of musical contributions, African food, a book presentation by an African author, fashion parade and dancing.

The organisers are grateful for financial support from the state of Thuringia, the Studierendenwerk Thüringen and DAAD (through the University of Jena). I am mostly indebted to Rea Mausberger and Janny Guevara of Iberoamerica e.V. as well as Bismark Appiah and Cristelle Audrey Tchentcheu and others who put a lot of time and energy to make the event a success.



Africa Day 2017 in Jena: Gala Evening

4. 7th ANSOLE e.V. General Assembly in Jena

The 7th ANSOLE e.V. general assembly was held on the 9th of December. Only 9 members attended the gathering, which is due to various occupations of our members during that period of year. Two new members were elected to board, namely Ms Cristelle Audrey Tchentcheu in replacement of Ms Marlyse Strosche as Vice-chairperson, and Ms Rea Mausberger in replacement of Dr Anne Egbe as Treasurer. Dr Harald Hoppe led the assembly. The board of ANSOLE e.V. consists presently of the following persons:

- Daniel A. M. Egbe, Chairperson
- Cristelle Audrey Tchentcheu, Vice-Chairperson
- Rea Mausberger, Treasurer
- Niklas Hayek, member



Participants at the 7th ANSOLE e.V. General Assembly in Jena

5. Participation to other events

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Upon invitation ANSOLE (ANSOLE e.V) was (re)presented at the following gatherings in 2017:

- Erstes Netzwerktreffen MigraNetz Thüringen, 01.04.2017, Erfurt, Germany
- 22 Solarkochertagung, 1-2. 04.2017, Altötting, Germany
- Séance de travail sur la mise en place d'un master en energies renouvelables avec Monsieur le Professeur Egbe Ayuk Mbi Daniel, Coordonnateur International d'ANSOLE, 21-22.06. 2017, Faculté des Sciences, Université de Ngaoundéré, Cameroun



Visit of the ANSOLE Coordinator at the University of Ngaoundere 21-23 June 2017

- The Green Africa Innovation Booster, 12-13.07. 2017, Marrakech, Morocco: The organiser IRESEN (Institut de Recherche en Energie Solaire et Energies Nouvelles) signed a cooperation agreement with ANSOLE and 8 other higher education institutions in Africa to create a Green Innovation research partnership.



Visit at the IRESEN Green Energy Park (research facilities) on the 14.07.2017

- "Thüringen global nachhaltig? EineWeltPolitik gestalten!", 15. 09. 2017, Haus Dacheröden Erfurt, Germany.
- Meeting at GIZ Uganda, Promotion of Renewable Energy Efficiency Programme (PREEEP), 20.09.2017, Amber House, Kampala, Uganda: Ms Lukia Nabawanuka, ANSOLE national representative in Uganda presented the network.
- Auftaktveranstaltung zur Interkulturellen Woche, 22.09.2017, Haus der Sozialen Dienste, Erfurt, Germany.
- Afrikatage Kiel, 6-8.10.2017, Kiel, Germany.
- International Workshop on "Effective promotion of green innovation-New ways of interagency cooperation", 23-25.10.2017, Bonn, Germany.
- MSSEESA Network Evaluation & Workshop on Solar Energy Materials for Energy Need in Africa, in honor of the late Prof. Rogath Kivaisi, 31.10-02.11.2017, Dar Es Salaam Tanzania.



MSSEESA Workshop 31.10-02.11.2017. Left: Group photo. Right: ANSOLE coordinator with Prof. Mohamed Gharib Bilal, Physicist and former Vice-President of the United Republic of Tanzania (2010-2015).

- Eröffnung MensalInternational, 08.11.2017, Mensa Carl-Zeiss-Promenade, Jena, Germany



African students coordinated by ANSOLE e.V. serving African dishes during the Eröffnung MensalInternational at the Ernst-Abbe University of Applied Sciences in Jena, 08.11.2017

- Abschlussfeier International Year of Global Understanding (IYGU), 21.11.2017, Aula, FSU Jena, Germany.
- 3rd Meeting of African Future Earth Committee (AFEC), 27-28.11.2017, Kempton Park, South Africa: Prof. Cesar Kapseu, ANSOLE Regional Representative in Central Africa ANSOLE presented the network.



3rd AFEC Meeting 2017. From left: Family photo, Prof. Kapseu presenting ANSOLE in the presence of the Director of ICSU Dr Daniel Nyanganyura, Prof Kapseu meets Dr Robinson Juma, ANSOLE Representative in Kenya, during a stop in Nairobi on his way back to Cameroon.

6. Applications

A. Contact point for Migrants of African Origin

ANSOLE e.V. wants to act as a bridge-builder between Africans living in Jena and German society. This necessitates the creation of a contact point for migrants from Africa and for non-Africans interested in Africa and desiring to interact with Africans living in Jena. Two applications requesting funding of a 50 % position were submitted online to the City of Jena

and to the Ministry of Migration of the State of Thuringia. Both institutions were favorable to our request. ANSOLE is grateful to Rea Mausberger, our new treasurer who was instrumental in making this contact point possible.

B. Energy Globe Award

Upon invitation of the Austrian organisers, ANSOLE submitted an application for the Energy Globe Award 2018. Let's hope to be among the winners for this second attempt!

C. Summer School within the frame of BALEWARE platform

After successful (co)organisation of 3 green energy related summer schools in Tanzania, Burkina Faso and Cameroon, the VolkswagenStiftung is favorable for the submission of an additional application requesting funding for a summer school on SDG 6 "Ensure access to water and sanitation for all", this within the frame of BALEWARE (Bridging Africa, Latin America and Europe on Water and Renewable Energies Applications). The venue is the Namibian University of Science and Technology (NUST). We are presently involved in the application process.

7. JKU Development Plan 2019-2024

The development plan 2019-2024 of Johannes Kepler University Linz adopts some of the capacity building activities of ANSOLE and BALEWARE in its activities relating to sustainability. This accentuates the importance of our network. We thank our active member Professor Reinhold Lang for making this possible.

8. Personal story and opinion

On personal basis, 2017 was very tough for me. God used the situation to teach me a lot and to open new venues for ANSOLE. The tough situation triggered the organization of the first AFRICA DAY in Jena on the 20th of May 2017, which was my birthday. The best birthday gift were the reassuring Biblical words from the *Losung*:

„ Is the LORD's arm too short?“ Numbers 11:23

„ God has the power to do what He had promised“ Romans 4:21

One thing led to another: The organization of the Africa Day encouraged us to apply and get funding for the AMAH project, which enables us have an official ANSOLE e.V. office at the Wagnergasse 25, 07743 Jena.

In this period I learned to understand the deep meaning of the „parable of the good Samaritan“(Luke 10:25-37) and especially the role of the „Priest“ and the „Levite“ in that story. In my opinion, this role is nowadays incarnated by some church-goers. For instance, I was not allowed to publicly invite for the Africa Day other Africans in a Pentecostal church in Jena, whose American Pastor is a strong proponent of the so-called *Toronto Blessing* in its multiple manifestations. (backward falling after being touched (pushed) on the forehead by the “anointed Man of God?” , “holy” laughing, crawling, barking, groaning, etc).

I have been very sceptical about the Toronto movement from the start, especially after our German Pastor and Missionary Peter Schneider of the Full Gospel Mission Church in Tsinga Yaounde warned us against the bizarre manifestations related to that movement .That was in 1992. However, I could not really bring forth strong arguments to defend my denial of the same, until I was obliged to seek shelter at a friend's place during my “tough time” in 2017. That friend and I watched a Youtube Video of Andrew Strom presenting the content of his book:

“Kundalini Warning: Are false spirits invading the church?”

One can watch the Youtube video here:

<https://www.youtube.com/watch?v=WfXmDkQiE2o>

According to Andrew Strom and many others, the *Toronto manifestations*, Kundalini and Yoga have the same source, which is Hinduism: The worship of the Serpent... The missionaries of Hinduism in the Western World, Africa, Latin America and elsewhere are various Yoga institutions and some of the „Pentecostal?“ churches propagating the *Toronto Blessings*. There is no „Christian Yoga“, There is no Yoga without Hinduism. Yoga is the expression of Hinduism. *(A note to African believing Christians: There are a lot of Youtube videos addressing the link between Kundalini, Yoga, Toronto manifestations and modern Christianity. Please watch them and make up your own opinion!)*

My tough time was an eye-opener by revealing to me what hospitality really means and who are real hospitable persons in my surroundings. It is shocking to realize that the “priest-like” and “levite-like” attitude (according to Luke 10: 25-37) of many so-called Christians, make them inhospitable and hard-hearted....

Acknowledgements

I am grateful to the institutions with the following logos, which supported our activities in 2017:



I thank all those who contributed in the running of our activities in 2017. The list is too long for me to mention each one of you. God knows you and will reward you. ANSOLE needs your support also in 2018 and beyond.

Strategies for Sustainable Energy Development in Africa

by Manuela Attouh



The king has finally accepted ANSOLE's proposal.

The king has finally accepted ANSOLE's proposal. But this was not before his own daughter was raped and murdered in an unlit street. Neither the death of a child caused by the toxic fumes of a kerosene lamp, nor the passing of a newborn baby whose mother had received improperly stored vaccines during her pregnancy, got him to call the representative of the non governmental organization back. Despite the pain felt by those left behind, he would not commit the sin of sacrilege by green-lighting the use of the sun's energy, God's energy, to electrify his village. The curtain falls. Thank goodness! This was only a play, which received a standing ovation from the audience of renewable energy engineers gathered to watch it.

We are in sun-drenched Ouagadougou, the capital city of French-speaking Burkina Faso. Colloquially called Ouaga, the largest city of this landlocked West African country lies geographically in the Sahel zone. From 25 February to 4 March 2017, it hosted the Pan-African film and television festival (Fespaco), Africa's leading cultural event.

Despite its artistic merit, our opening tragedy was not selected for the

festival's 26th anniversary. Rather, it was performed at the closing ceremony of the first summer school (School 1) organized by the African Network for Solar Energy (ANSOLE) and its partners including the Justus Liebig University Giessen, Germany, the Johannes Kepler University Linz, Austria, and 2ie - *Institut International d'Ingénierie de l'Eau et de l'Environnement*, Ouagadougou on the theme of **Sustainable Energetics for**

Africa (SE4A). Planned for participants from West Africa and Germany, it was held at Zie from 27 February to 3 March 2017.

“Sustainable energetics or the use of sustainable energy for Africa is a necessity and is important for us.” With these words, Professor Alfa Oumar Dissa, Minister of Energy, Mines and Quarries of Burkina Faso set the tone of SE4A whose aim was threefold: “build capacities, share experiences and strengthen networks.” This aim was achieved through the discussions which took place during the various stages of the event and which centered on strategies for sustainable energy development in Africa and beyond.

The lecture session was the first stage and started with the clarification of key concepts. While energetics was defined as the scientific study of energy flows under transformation, being sustainable was described as meeting the needs of the present without compromising the ability of future generations to meet theirs.

The ‘sustainable’ aspect of the energy produced is important because it takes into account the socio-economical issues (affordable and suitable energy to population needs) and the environmental issues (energy production should not create significant negative environmental impacts). This explains why sustainability gained a lot more attention in the new 2030 Agenda for Sustainable Development (2030 ASD) than it had in the Millennium Development Goals.

Across the world, strategies are established for sustainable energetics. Indeed, countries resort to sustainable energy solutions including biomass, solar power and hydropower. Here are some concrete examples. In Africa, in addition to its traditional use for cooking and heating in the residential sector, biomass is used in industries that consume large amounts of heat (either hot water or steam) and have large volumes of biomass residue at their disposal, such as the paper and pulp industry and the wood-processing sector.

In Cameroon, the design and installation of reproducible prototype domestic, community, health center and boarding school solar systems, within the framework of a partnership between the University of Buea and thirty-one local authorities, is sure to accelerate rural electrification.

In West Africa, hydropower is the most well established and widely used renewable energy technology. In most member states, it represents the only renewable energy technology currently being implemented on a commercial scale.

In the efforts towards a reduction of the global energy demand and carbon dioxide emissions, the building sector too has an active role to play as energy consumption in this sector is steadily increasing with the world population.

In all tropical regions, including in sub-Saharan Africa, passive air conditioning building designs are employed to cool internal air by way of inducing air circulation inside houses through the use of local winds, the thermosiphon process, solar chimneys, the Venturi effect, evaporative coolers, patio cooling, building compactness, building directions, Canadian wells, masks and sunscreens.

In Europe, building-integrated photovoltaics modules are replacing conventional building materials in parts of the building envelopes to reduce buildings’ environmental impact.



Lecturing at SE4A School 1

In arid regions like the Gulf, electricity from solar photovoltaics has become increasingly attractive to power desalination systems. More than half of growth in the desalination market is in the MENA region.

Among the strategies in place to support climate change mitigation, improving energy efficiency feature prominently as it leads to a broader access to it for all users. In West Africa, the Supporting Energy Efficiency Access in West Africa (Seea-WA) initiative is contributing to access to efficient, sustainable and modern cooking fuels and devices for the entire Economic Community of West African States (ECOWAS) population.

To push forward with the above-mentioned efforts, a new generation of engineers is needed combining thorough applied and practical interdisciplinary skills in science, engineering, economics and social sciences, alongside complementary skills such as project management and quality control. These skills are better gained through a problem-based learning approach where students create solutions to complex and real problems. For example students may be asked to find the appropriate organic photovoltaics small-scale application to electrify a village, based upon their preexisting knowledge and the information they gathered or were provided with. Such an approach should be innovation-driven to bring about a transition to an all-circular sustainable plastics economy where the

material will be realigned to Sustainable Development Goals (SDGs), moving from being (perceived as) a problem to becoming part of the solution!

Coming back to renewable energy higher education programmes, especially in Africa, they should be complemented by e-Learning for students to be provided with modern teaching methods and up-to-date knowledge in order to help them successfully enter the job market as renewable energy entrepreneurs or policy makers. In order to orient policies and strategies, the latter will need to consider three crucial energy project planning methodologies that influence their long term sustainability and success, notably the Performance and Impact Assessment Model, Project Cycle Management and Comprehensive Energy Solution Planning. The SDGs cannot yet be labelled as sustainable solutions to global problems. The challenge now lies in implementing these goals. And this is eventually a question of transnational political will. As the industrialized world is now addressed in the 2030 ASD, let's hope that cosmopolitanism will further the discursive and practical treatment of global environmental risks.

Africa getting big on Solar Energy

By Manuela Attouh

Rural areas in sub-Saharan Africa are regions where only 14% of the population have access to electricity. Electricity generation systems based on renewable energy remain a preferred solution to increase the electrification rate in these areas. The abundance of solar insolation in some regions makes it one of the most attractive renewable energy sources. However, the technology must be reliable, sustainable, profitable and at the same time respectful of the environment.

In the research works presented during SE4A poster session, most students showed interest in factors affecting the performance of solar energy systems, be they photovoltaic or concentrated-solar-power (CSP)-based, in a view to improve it. Below is the full list of the studies they carried out along with the most important findings they come up with:

- **Sustainability of solar mini-grids in Nigeria.** Based on the multidimensional factors identified to be responsible for the failure of solar mini-grids in Nigeria, the adoption of standards for PV system components imported into the country and the development of a national curriculum for training of installers are recommended.



Winners of the posters' session with some members of the jury. From left to right: Prof. Dr. Reinhold Lang, Mrs Vivian Nwadiaru, Mrs Sibiath Osseni, Mrs Abibatou Fall, Prof. Dr. Veronika Wittmann, Prof. Dr. Angeles Agüera, Prof. Dr. Daniel Egbe, Prof. Emmanuel Tanyi.

Mauritania. Water resources are identified as a factor limiting the development of CSP technology in the Sahel.

- **Side chain engineering of anthracene-based polymers: Applications in photovoltaics.** The synthesis of a series of anthracene-containing polymers with an increase in side chain length was presented to investigate the effect of this variation on the semi-crystalline nature of the polymers and on resulting photovoltaic cells. The results show that light absorption and charge mobility is possibly hindered in polymers with longer side chains, thereby lowering the efficiency of the solar cells.
- **Natural thermal energy storage material from laterite stone for concentrated solar thermal power plant in West Africa.** An investigation into the potential of laterite to be used as a thermal energy storage material (TESM) in concentrating solar power plants shows that a low cost dense ceramic, a material obtained from a new way of manufacturing ceramics, can be used as an alternative TESH for many kinds of CSP processes (from low, up to high temperatures) with properties in the same range as other available materials, but with lower cost and without conflict of use.
- **Development of a new doping method for silicon solar cells.** The diffusion of phosphorus on the monocrystalline silicon substrate of a solar cell using a fabricated gel precursor composed of Phosphorus Oxide (P_2O_5) led to the improvement of a p-type to n-type silicon doping, offering a new method for the realization of a p-n junction to manufacture solar cells.



Poster session

- **Study of a low power off-grid solar parabolic trough concentrator with an Ericsson engine.** This paper aimed at demonstrating the feasibility of a mini solar power system for generating electrical energy based on the coupling of a parabolic trough concentrator with an Ericsson engine, which is an external heat supply engine working according to a Joule thermodynamic cycle with recuperator, led to the sizing of a thermodynamic mini-plant.
- **The synergetic effect of graphene on Cu_2O nanowire arrays as highly efficient hydrogen evolution photocathode in water splitting.** This study focused on the photostability of graphene modified photocathodes or water splitting. It reveals that this inexpensive photocathode, prepared free of noble metals, showed enhanced high photocurrent density with good stability and is a highly promising photocathode for solar hydrogen production.
- **A comparative study of MPPT approaches based on ANN and Fuzzy Controllers.** This comparative study of MPPT (Maximum Power Point Trackers) approaches based on an Adaptive Neuro-Fuzzy Inference System and a hybrid neural network RBF (Radial Basis Function)/MLP (MultiLayer Perceptron) allows to optimize the maximum power point of a photovoltaic generator for sunny and cloudy days.
- **Design of a solar cavity receiver for a central receiver system.** For the purpose of this study on the design and manufacturing of a solar receiver for CSP4Africa, a project that aims at developing a central receiver system plant in 2iE in Burkina Faso, a cavity tubular receiver was chosen and a cylindrical geometry was set as shape. A helical coil, which represents the lateral part, was adopted as the absorbing surface of the receiver.
- **Optimal operation of hybrid photovoltaic/diesel system for cost effective rural electrification: Case of Bilgo located in Burkina Faso.** The optimization and experimental analysis of energy management in hybrid photovoltaic/diesel-without-battery-systems using dynamic programming (DP) highlights a reduction in operation costs, fuel consumption, carbon emissions and cost of energy.
- **Characterization and modeling of hybrid organic-inorganic-based perovskite solar cells.** The realization of hybrid organic-inorganic-based perovskite solar cells, using a two-step procedure consisting of spin-coating and dip-coating, led to the development of a new theoretical model that allows to evidence the influence of paramount physical parameters such as the perovskite layer thickness, the monochromatic wavelength of the incoming irradiation of the spectrum of the visible on the performance of the cell.
- **Study of Czochralski silicon (CZ-Si) wafer optoelectronic behavior under light exposure.** This research reveals that wafer illumination steps can be a suitable

method to confirm the electrical quality of Cz-Si wafer and also contribute to attaining higher efficiencies in solar cells.

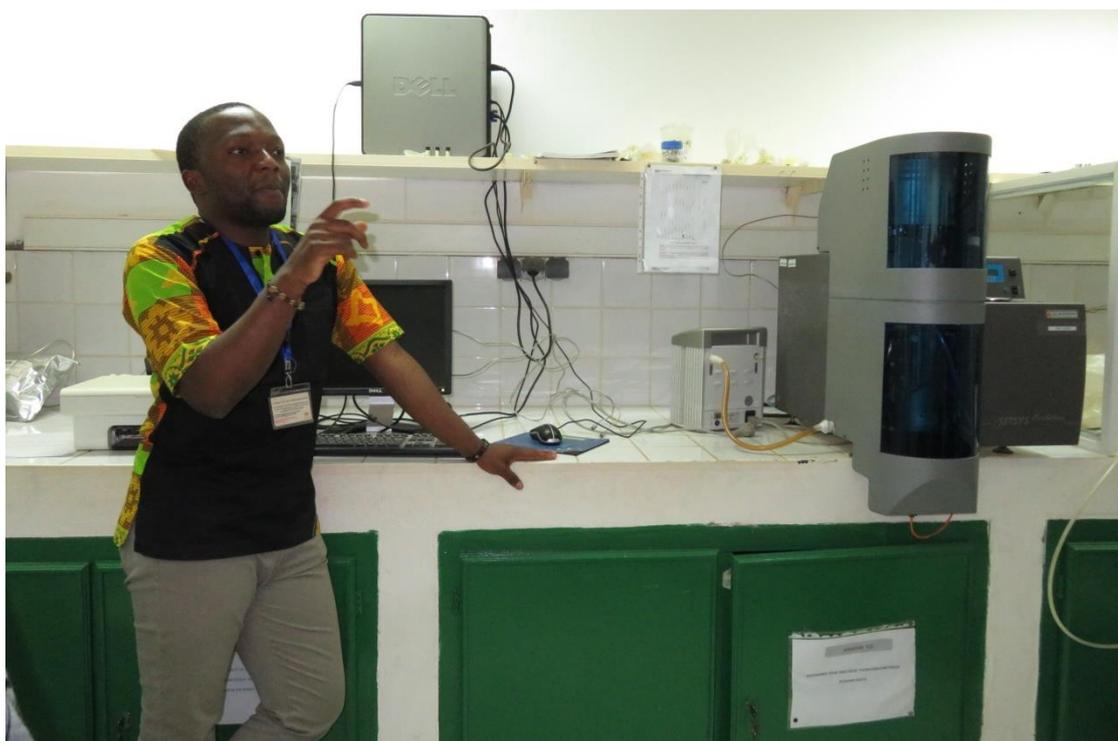
- **Comparison of economic criteria for the optimal design of a photovoltaic/diesel hybrid system.** The comparison of the profitability criteria applied to optimally design a photovoltaic/diesel hybrid system with an application to 2iE-K1 campus (Ouagadougou) shows that Discounted Payback Period and Internal Rate of Return give optimal solutions that limit the investment cost and the maximum debt amount, while Net Present Value/Life Cycle Cost/Levelized Cost of Energy maximizes the benefit.



Visit of LESEE

- **Design of a linear Fresnel collector in Sub-Saharan region of Africa.** The identification of linear Fresnel technology as a good candidate for the implementation of a low cost power plant station in rural areas of Sub-Saharan region of Africa due to its simplicity and its adaptability led to the building of a low cost linear Fresnel collector in Burkina Faso using local labour and materials.
- **Isolation and characterization of natural dyes for possible application in dye sensitized solar cell (DSSC).** Natural Ghanaian dyes or blends of Ghanaian natural dyes with broader absorption bands were explored for possible application in dye sensitized solar cells in order to enhance their performance.
- **Elaboration and characterization of thin films dyes for photovoltaic application.** In the context of this research on the design and characterization of thin films dye for photovoltaic applications, the chemical and physical properties of the molecular dyes were established, and the extracted dye was tested in the active layers of DSCCs or BHJ organic solar cell.
- **The prediction of PV module performance ratio with artificial neural networks.** The modeling of the performance ratio (PR) of four photovoltaic modules including one monocrystalline, two polycrystalline and one micromorph (α -Si/ μ c-Si) modules using artificial neural networks (ANN) shows that only one hidden layer, with at most five neurons, accurately models the PR regardless of PV technology.
- **Exergetic optimization of absorption chiller single stage $\text{H}_2\text{O-NH}_3$ by experimental design method.** Students also investigated the performance of single stage absorption chillers, which are tri-thermal machines used for negative temperature refrigeration. One presentation showed that the cycle is more thermodynamically efficient when the absorption cooling system is operated at a low evaporation temperature (lower than 0°C).

- **Assessment of a slow biomass pyrolysis technology using the Artificial Neural Network model.** The application of the Artificial Neural Network (ANN) model in a technical-scale fixed-bed reactor allows the behavior of the system to be predicted by measuring the mass and energy fractions of pyrolysis products controlled by temperature and the percentage retention of fuel (pyrolysis gas) as well as the char formation.
- **Investigation on the use of the cement mortar containing banana fibers as thermal insulator in building.** This investigation shows a strong relationship between the fiber content and the thermal properties of new composite materials that can be used, for example, to fill a carrier structure.
- **Contribution of Community-based Organizations (CBOs) to the promotion of renewable energy in Senegal.** This study proposes a business model that is cost-effective, eco-friendly and community-focused based on research in the form of needs analysis conducted with CBOs. This model will guarantee greater access to energy, stable jobs, as well as providing funds to undertake sustainable activities through a “Teek” system.
- **Sustainable energy, renewable credentials and economic growth.** This paper, which considers trend analysis of energy availability levels and their corresponding effects on economic growth and development, reveals that the growth of any nation is critically dependent on the sufficiency of its energy sector, creating a necessary dependence on sustainable, renewable and reliable energy.



Visit of LBEB

- **Integrating anaerobic digestion (bio-energy) into our culture: Is it a panacea for sustainable energy supply in Ghana?** In addition to solar energy, it has been established that redeployment of bioenergy power generation technologies into the Ghanaian culture could be the solution to providing a sustainable power supply, mitigating climate change, utilizing locally available resources, and providing employment opportunities for indigenes of local communities.
- **Investigation on the utilization of slaughter waste potential towards energy self-sufficiency at Kumasi Abattoir Company Limited in Ghana.** The installation of a biogas plant at the Kumasi Abattoir Company Limited in Ghana will contribute to the

treatment of waste generated by this slaughterhouse. Besides, the plant will generate electricity for self-consumption, residues will be used as fertilizers and energy surpluses will be fed into the grid.

Of course, the aforementioned research works are relevant only if they ultimately contribute to improving the living standards and/or incomes of the populations. Yes, a project should transform the lives of the beneficiaries like the **“Rural electrification study of the villages of Amprondrahazo and Ambavarano and cold room installation”** did.

The day after the poster session was dedicated to visiting the campus of **Kamboinsé and two of its research labs**: the Biomass Energy and Biofuels Laboratory and the Laboratory for Solar Energy and Energy Savings.



Frames for experiment photovoltaic modules of different sizes – LESEE.

The Biomass Energy and Biofuels Laboratory (LBEB) has two objectives. The first objective is to develop biomass conversion processes for the production of heat, electricity and motive force, as well as bioproducts and materials, taking into consideration Africa's specific realities and challenges. The second objective is to identify the potential impacts and the requirements for the emergence of these technologies and the related sectors. LBEB includes tools such as a thermogravimetric analyzer, a Micro GC Gas Analyzer, a gas chromatographer, a muffle furnace, a tube furnace, a platform for biofuel production, a surface area and porosimetry analyzer, and a thermochemical platform.

The main objective of the Laboratory for Solar Energy and Energy Savings (LESEE) is to help build industrial innovation capacities in Africa in the field of solar energy for the production and use of electrical, thermal and mechanical energy (on both a small and large scale). LESEE is equipped with four weather stations, a prototype PV-generator hybrid system without storage, a PV-generator-battery hybrid platform, a test bench for PV modules, a 100 kWth concentrated solar power tower pilot plant, a prototype solar-powered air-conditioning unit and a prototype linear Fresnel solar concentrator.

Both labs are supervised by a highly qualified team of teacher lecturers, research engineers, associate professors, teaching and research assistants, support technicians and doctoral students.



Manuela Attouh is a translator and conference interpreter by profession. She specializes in the translation of texts in the field of environment from English into French and vice versa. Contact: manuelaattouh@gmail.com.

First ANSOLE General Assembly Meeting in Rwanda

By **Clarisse Nishimwe NIBAGWIRE**



Participants at the 1st ANSOLE General Assembly Meeting in Rwanda

The meeting took place on Friday the 8th of December 2017, at around 04:40 p.m. in the building of the African Centre of Excellence in Energy for Sustainable Development (ACE-ESD), hosted at the University of Rwanda-College of Science and Technology. It was chaired by Clarisse Nishimwe NIBAGWIRE, ANSOLE National Representative in Rwanda and Innocent NKURIKIYIMFURA, ANSOLE Vice-National Representative in Rwanda

The meeting started with introduction of ANSOLE Members and some of the PhD students at the ACE-ESD who are willing to join ANSOLE. The introduction was followed by a brief presentation of ANSOLE history and experience sharing from members who have already benefitted from ANSOLE support. There were three testimonies from:

- Jean D Amour Mwongereza who participated at ANSOLE Summer School in Cameroon (in 2017)
- Innocent NKURIKIYIMFURA, who got a fully sponsored event organized by ANSOLE in Arusha-Tanzania (in 2015)
- Clarisse N. NIBAGWIRE, who participated in an academic trip in Germany coordinated by ANSOLE (in 2016).

The testimonies were followed by discussions on the forthcoming event in the second half of March at ACE-ESD

The Deputy Director of ACE-ESD Dr. Kabiri Charles, who was representing the Director, informed the participants that the centre is committed to fully support the event in case this may be organized as a training. Under this condition, the following tentative program was suggested:

- The 1st and 2nd days are dedicated to a short training
- 3rd day is dedicated for PhD exhibition and official launching of ANSOLE in Rwanda.

The exhibition will be made up of poster sessions from PhD students, the University's community and, if possible, local companies

It was also suggested that ACE-ESD be actively involved in the organization of the event. The PhD students present to the meeting committed themselves to prepare posters related to their current research topics.

The meeting ended at 5:30.p.m.



Clarisse Nishimwe NIBAGWIRE is a Rwandese engineer, graduated in Master of Science in Energy Engineering "Renewable Energy" from the Pan African University Institute of Water and Energy Sciences (PAUWES), located in Tlemcen Algeria. Besides that, Clarisse has a bachelor degree in Electronics and Telecommunication Engineering obtained from Kigali Institute of Science and Technology, located in Kigali Rwanda.

She is a very passionate woman in Renewable Energy sector and Energy Efficiency, and much interest to assist developing countries in achieving a sustainable development. She is currently a professional intern at Rwanda Regulatory Authority in Electricity and Renewable Energy and ANSOLE National Representative in Rwanda. Contact: Email: ninisi04@gmail.com, Skype: nibagwireclarisse. Cell:

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Minutes of the 3rd ANSOLE General Assembly (GA) in Cameroon

By *Bertrand Asobo Ngonla*

The GA meeting was held on the 18th of December 2017, one day prior to the 4th ANSOLE National Conference in Cameroon (ANSOLECAM 2017). 90% of the participants of the GA meeting were also participants of ANSOLECAM.

The registration process of the participants started around 1:25 pm with badges and the conference booklets being handed to the participants in front of the conference hall of the Advanced School of Public Works (ENSTP), Yaounde. The third ANSOLE General Assembly in Cameroon started at 2:23 pm prompt with 34 participants. The meeting was coordinated by the National representative of ANSOLE Cameroon, Dr. Claude ALOYEM who started by presenting his excuses to the Director of ISPIM, Dr. Kadji for the last minute changes made with respect to the venue of the meeting. Mylene Mbeutoum gave the opening prayer and the Director of ENSTP, Prof. George ELAMBO welcome the ANSOLE participants to his institution. He said "the issue of renewable energy is now on how fast can we go to implement it because it is no longer in the debate, since it is an important aspect in the country, continent and the world". Dr. Kadji, the director of ISPIM took over the floor to welcome the participants and gave a brief description of his institution. The school has 8 fields of study which includes:

- Petrochemistry and refining
- Renewable energy
- Industrial chemistry and environment

- Mines and applied geology
- Statistics
- Computer science, cryptology
- Accounting and business management
- Air conditioning and refrigeration



Participants at the 3rd ANSOLE general assembly meeting in Yaoundé

These fields of study follow the LMD system of education he precised. The school also offers professional courses in renewable energy and presented some specificity of certain fields. He further requested the help and collaboration of ANSOLE in the installation of a state-of – the-art renewable energy lab. He ended by thanking Dr. Claude ALOYEM and the ANSOLE team in Cameroon for involving him in the organisation of the 3rd GA.



During the ANSOLE General Assembly, 18.12.2017 in Yaounde, Cameroon

The international coordinator of ANSOLE, Prof. Daniel EGBE took over the floor. He thanked Prof. George ELAMBO and Dr. Kadji, welcomed the rest of the participants and still presented his excuses to Dr. Kadji, Director of ISPIM for the last minute changes made. Prof. Daniel presented a brief history of ANSOLE, which was initiated on the 4th November 2010 at Tunisia and later launched on the 4th February 2011 in Linz, Austria. He said ANSOLE is 7 years old with more than 1000 members in 44 African countries and 30 non-African countries. Cameroon has the largest number of members in a country and he encouraged institutions like ISPIM and ENSTP to join as institutional members. He emphasized that everyone can become a member of ANSOLE whether he/she is working on renewable energy or not, it just suffice for the individual to support the ideas of ANSOLE. He later gave the formalities of being an active member of ANSOLE with its benefits, and the goals of ANSOLE with the main focus being capacity building on renewable energy in Africa. Egbe presented 2 Cameroonians, Dr. Herve Joel and Dr. Armel PENE who had benefitted from the ICTP-ANSOLE scholarship in order to complete their PhDs. He presented the future plans which include:

- Facilitating entrepreneurship among young ANSOLE graduates
- Match making platform

The main principle of ANSOLE is “passing it on and sharing”. The principle simply means you receive and you give which makes you alive, that is you are a blessing. He explained how the second law of thermodynamics has a biblical meaning. He also showcased the BALEWARE platform and that a summer school on water and sanitation will be organized in 2018 or early 2019 under the platform of BALEWARE. Prof. Egbe later invited those who have not joined ANSOLE to become members and those who are members to become active members by paying their yearly membership fee of 20 Euro/13100 FCFA. He ended by thanking Prof. KAPSEU Cesar, Prof. George ELAMBO who have been by his side since the beginning, Dr. André TALLA, Dr. Claude ALOYEM and Germaine for the sacrifices they made for the proper functioning of the 4th National ANSOLE Conference and lastly, ASOBO Bertrand and TALLA Armel for accepting to be the secretaries during the General Assembly meeting.

The National representative of ANSOLE, Dr. Claude ALOYEM took over the floor and gave a summary of ANSOLE Cameroon activities from November 2016 to December 2017. He said for the year 2017, 15 active members joined the network and ANSOLE was represented at the “Salon Promote”. Dr. Claude ALOYEM said that this was his 1st GA and 2th conference he is organizing since his appointment as National Representative of ANSOLE in Cameroon. He

also said that the nomination of the ANSOLE Focal Points (AFP) in various universities has been completed. An innovation this year was the nomination of ANSOLE Youth Representatives (AYR) in various state universities. He also made a presentation of the census of actors of renewable energy, which includes NGOs and enterprises in the national territory.

Ange Roussel TIENTCHEU, a student from the University of Ngaoundere, did a presentation of ANSOLE activities in Ngaoundere. The supervisors are Prof. KAMTA Martin and Prof. KAPSEU Cesar. The general focuses of the ANSOLE activities in Ngaoundere are to foster a link between:

- Teachers and researchers
- Students and researchers
- Operators and consumers

The Cameroon Renewable Energy Network (CAMREN) was initiated by Prof. EGBE Daniel, Prof. KAPSEU Caesar, Prof. George ELAMBO and Germaine ASHU in order to have a legal local institutional representation of the network in Cameroon. Prof. KAPSEU Cesar, who is the current president of CAMREN and also drafted the constitution of CAMREN, took over the floor and did a brief presentation of the board members of CAMREN. He also elaborated on projects carried out so far and proposed the creation of an association of ANSOLE alumina, made up of those who had benefitted from ANSOLE scholarships and different funding mechanisms. Prof. George ELAMBO who is the 1st vice president and Prof. FON ABI who is the Adviser of CAMREN, respectively, also took over the floor to talk about the creation of CAMREN, the ideology and the barriers faced so far. One of such barriers was the lack of financial means, since there was no source of funding and most of the board members had to carry out activities using money from their personal pockets. Prof. EGBE mentioned the fact that the African Development Bank (ADB) is ready to fund renewable energy projects in Africa. CAMREN is the proper platform which can be used to seek for such funding from the ADB, since ANSOLE has its headquarter in Germany.

Mr. Daniel NGWANOU, Director of Centre Polyvalent de Formation (CPF) de Mbouo-Bandjoun, came up and spoke about the organization of ANSOLECAM 2018 in his institution. Since he became head of the institution in 2009, the institution has a partnership with the University of Dschang and The University of Bamenda. He also did a brief presentation of the installation of solar panels by students of his institution. The main instructor with respect to the installation of solar panel is a German. 50 solar panels in total have been installed by the students in the laboratory and other sections of the campus. He also said his institution welcomes ANSOLE members who are interested in carrying out research in renewable energy and also welcomes cooperation ties in his institution. He decided to join ANSOLE as an active member.

Dr. Vidal ALOYEM proposed the launch of an ANSOLE Journal. Prof. KAPSEU Cesar made clear that this will not be an easy task, since it requires having a certain number of relevant and interesting articles, reviewers and an International Standard Serial Number (ISSN). Prof. Daniel EGBE proposed that ANSOLE can contact other World renowned publishers like ELSEVIER, WILEY, etc. to publish under their umbrella before becoming independent. With respect to CAMREN, Prof. Daniel EGBE proposed that the yearly membership fee should increase from 13.100 FCFA per year to 20.000 FCFA. This amount can be shared equally, that is 10.000 FCFA for ANSOLE and 10.000 FCFA for CAMREN in order to facilitate the activities of both ANSOLE and CAMREN. Dr. Jean de Dieu proposed 15.000 FCFA instead since currently most members of ANSOLE do not even pay the yearly dues of 13.100 FCFA.

Yolande MOUGANG said it is important to have a journal since it will encourage a lot of PhD students to register and attend ANSOLE conferences. She cited the example of how she encouraged some of her PhD colleagues to attend, and they asked her what next after their presentation. Yolande ended by saying that the benefits of being ANSOLE active member and CAMREN should be given and it should be at the discretion of the individual to decide whether to belong to the network or not.

Prof. KAMTA Martin proposed that the best presentations made during ANSOLE conferences should be selected and published in a well renowned journal for a start. This will pave way to the creation of an ANSOLE Journal. Dr. Claude ALOYEM proposed that as from the next ANSOLE conference, extended extracts (about 5 pages) should be submitted and the scientific committee should look at it in order to determine whether they are publishable.



Mr. **ASOBO NGONLA Bertrand** has a DIPES-I, BSc, DIPES-II in Chemistry and an MSc in Natural Resource Management. He is currently a PhD student in Natural Resource Management in the Dschang School of Agriculture and Environmental sciences, University of Dschang, Cameroon. He is a trained chemistry teacher under the Ministry of Secondary Education in Cameroon teaching General Chemistry the first cycle and Organic Chemistry in the second cycle. ASOBO NGONLA Bertrand is a member of the North-West Chemistry Teachers Association in Cameroon and also an active member of the African Network for Solar Energy (ANSOLE). He is the Ansole Youth

Representative in the University of Dschang, Cameroon. Mr. ASOBO NGONLA Bertrand research is focused on biogas production from municipal solid waste and energy efficiency. Contact: momgemma@gmail.com

4th ANSOLE National Conference in Cameroon- ANSOLECAM 2017

By Vidal Aloyem Kaze

The day started with the welcome addresses from Prof. George Elambo Nkeng, Director of ENSTP and President of ANSOLECAM 2017, Prof. Thomas Njiné, Rector of PkFokam institute of Excellence and Co-organizer of ANSOLECAM 2017, and finally Prof. César Kapseu, the Ansole Regional Representative in Central Africa. 19 presentations were programmed for the day but only 16 were presented due absence of some participants. The first session entitled “**Photovoltaic Materials, Devices and Applications**” started with the presentation of Prof. Daniel Ayuk Mbi Egbe, who lectured on “*Recent advancements in organic photovoltaics*”, followed by Mr. Fabrice Mbakop of the National Advanced School of Engineering of the University of Maroua who used a “*Theoretical study and the numerical simulation to analyze the general design of the various one-dimensional photonic crystal (1D-PC) multilayer structures.*” In terms of application, Mr. Aldrin Bogning of the National Advanced School of Public Works of Yaounde presented his works on “*The feasibility studies and the optimization of a photovoltaic installation for electrification at Mbam-and-Inoubou.*” This session ended with the presentation of Yolande Ketchanji of the University of Douala on “*The meteorological acquisition station and experimental characterization of a monocrystalline photovoltaic module.*”



Left : Participants at ANSOLECAM 2017. Right : Award of best entrepreneurial idea to Mr Jean Materne Ango of the University of Maroua

The second session entitled **“Solar Energy and Applications”** was opened by Prof. César Kapseu of ENSAI, University of Ngaoundere who proposed *“hybrid solar drying (Biomass/solar) to reduce post harvest losses.”* Dr. Aloyem Kaze of the University of Bamenda then presented the *“Artificial neural network as the solution to predict solar irradiation in the North-west region of Cameroon.”* After a short break, the participants followed with attention the presentation of Prof. Mathias Bashahu of the University of Burundi, Bujumbura on the *“Estimation of the daily distribution of the mean hourly global solar irradiance on a horizontal surface for clear days.”* He also informed the audience about the recent start of Masters and PhD study programmes in his country. Finally, Mr. Jean Materne Ango from the National Advanced Polytechnic School of the University of Maroua presented his work on the *“Realization of a mixed solar cooker for the cooking of the Must of Sorgho (Bili-Bili).”*



Lecture (left), award of certificate (middle) and conference dinner (right) during ANSOLECAM 2017

Jean Materne Ango started the last session entitled **“Wind, Biomass and Sustainable Development”** by presenting on behalf of his supervisor Prof. Noël Djongyang on *“The multi-sectorial approach of climate change challenge and adaptation in the Sudano-Sahelian region of Cameroon.”* In the same way of fighting against climate change, Prof. César Kapseu gave a second talk on the needs of the society to set up successful projects in Renewable Energies. The problem of inadequate access to environmentally-friendly, modern energy sources was presented by Bertrand Asobo Ngonla from the University of Dschang and Ms. Marie C. Ngonono from the University of Ngaoundere. The only topic on wind energy

was presented by Alix Dountio Tchioffo of the Faculty of Science of the University of Ngaoundere. Mr. Gabin Mbopda Tcheum and Mr. Ariel Teyou Ngoupo from the University of Yaounde presented their research on the way to improve the efficiency of solar cells.

At the scientific part of the day, an entrepreneurial slam was organized by Pof. Cesar Kapseu. 7 projects were presented each for 1 minute. Mr Jean Materne Ango from the University of Maroua was the lucky winner. The day ended with the award of certificates of participation and dinner was offered by ANSOLE.



Dr. Vidal Aloyem Kaze was born in 1972. He is married and father of five children. He received a PhD from the University of Dschang, Cameroon in 2012. He is the author of many publications in the fields of thermodynamics and exergy. He lectures at Bambili Higher Technical Teacher Training College, University of Bamenda, Cameroon, and is the National Representative of ANSOLE in Cameroon. Contact: kazealoyem@yahoo.fr

Zimbabwe Renewable Energy Scenario

By *Nothando Ndlovu*



This document depicts the energy scenario of Zimbabwe as presented to the Sustainable Energetics for Africa Summer School 2 in Yaounde and Buea Cameroon

Introduction

The reliable supply of energy is one of many important requirements for economic growth in any country. Energy plays an invaluable role in social and economic development and it is a critical factor in industries that drive the economy. In Zimbabwe, coal has been the main source of energy provision, however, in the past years the coal supply has been failing to meet increasing demand, resulting in some industries importing coal. The energy projection as project by the Zimbabwe Electricity Transmission and Distribution Company (ZETDC) and are as shown below.

Table 1: Power and Energy Demand Projections

Year	Energy Demand forecast (GWh)	Power demand forecast (MW)
2016	8,526	1,842
2017	9,073	1,968
2018	9,535	2,067
2019	10,270	2,165
2020	11,097	2,267
2025	14,602	3,018
2030	17,438	3,598

Source: Zimbabwe Electricity Transmission and Distribution Company (ZETDC), 2016.

Zimbabwe has a vast amount of renewable energy source potential, with an annual daily average solar radiation of 20 MJ/m² (Mega joules/square metre) received over the country (Ministry of Energy and Power Development, 2012). An estimated 1.5 million tons of bagasse are produced annually from waste in the processing of sugar cane in the Lowveld at Triangle and Hippo Valley Estates. With a strong agricultural base, Zimbabwe also produces large quantities of agricultural waste, which can be efficiently utilized as biomass energy. The sustainable use of biomass resources (e.g. wood fuel, industrial waste such as bagasse and pulp), hydropower, solar power and wind can be fully maximized, as it can bring both access to energy and environmental benefits. Renewable energy sources in particular promote socio-economic development in a safe, sustainable, and environmentally friendly manner. The sections below present the scenarios of renewable energy technologies in Zimbabwe currently.

Solar energy

The most abundant renewable energy source in Zimbabwe is solar radiation. Per annum an average of 2000 kW/h per square kilometre, spread over roughly 3000 hours per annum is received. Until recently, solar photovoltaics (PVs) were installed mainly in remote locations such as rural service centres e.g. clinics/hospitals and schools as well as individual homes. In rural areas PV is used for lighting, radio and television. Since the drafting of the National Energy Policy in 2010, there has been a widespread use of PV systems in urban and rural areas. Cities such as Harare, Bulawayo, Gweru and Masvingo have successfully installed solar street lights in the cities' main roads. The country has seen a growth in solar technology business owners supplying products such as household solar lanterns, and PV systems for residential and commercial use. Mini-grid solar systems have been installed in different parts of the country to complement the rural electrification program. However, there has still been limited success in solar light and solar water pumping installations in many regions in the country despite the abundant solar resource. In 2014, the Zimbabwe Power Company engaged investors to construct 3 x 100 MW grid connected solar installations at Gwanda, Insukamini and Munyati, respectively. However, these projects are still at preliminary stages of feasibility studies. Several Non-Governmental Organizations (NGOs) notably UNDP, Practical Action, SNV, HIVOS and Oxfam have also funded solar lantern lighting, solar home systems and solar water pumping projects in remote rural communities. The projects are collectively aimed at improving rural livelihoods and addressing climate change using renewable energy technologies.

Solar thermal technologies have not been widely adopted in Zimbabwe although solar water heaters are installed in some households and learning institutions. Installed units have capacities ranging from 50 litres each to 1000 litres of water per unit. These units are mainly afforded by the middle to high-income groups in the country due to high capital costs of over US\$1000. The greatest market potential for these units however exists in low-income households who however do not have the capital to acquire such units. It is expected that with the finalization of the Nation Solar Water Heater (SWH) Programme there will be

increased SWH installation across the country. Below is the summary of the candidate solar power plants that have been proposed based on the available energy resources.

Table 2: Candidate Power Plants

Plant Name	Units	Installed capacity (MW)	Realistic Commissioning Dates
Solar PV	10x50 MW	500	2017
Solar Concentrated	4x50 MW	200	2019

Source: System Development Report, 2016.

Biomass

Biomass energy encompasses energy from fuel wood, forestry and agricultural wastes (including bagasse); ethanol from sugar cane; biogas and biodiesel. Triangle and Hippo valley are the major producers of biomass, producing over 70 MW of electricity from bagasse in total (Ministry of Energy and Power Development, 2010). The two sugar plantations at the south-eastern part of the country have been producing electricity from the bagasse produced during the processing of the sugarcane. On average 72.5 MW is currently being produced for own consumption, with 10 MW being supplied to the grid (Zimbabwe Electricity Transmission and Distribution Company, 2016). According to the Ministry of Energy and Power Development production levels could be improved through the integration of novel biomass conversion technologies and high efficiency steam utilisation technologies.

All the major cities in Zimbabwe treat their sewage anaerobically, producing biogas. Although a small share of the produced gas is used in some instances to preheat the digesters, most of the gas is just vented into the atmosphere. The table below shows the potential of biogas production from sewage treatment works in four major towns.

Table 3: Potential of Biogas Production from Sewage Treatment Works in Four Major Towns

Cubic Meters/day	Sewage	Biogas	Methane produced
Harare	300000	140000	70000
Mutare	30000	1107	554
Masvingo	16800	621	311
Bulawayo	35000	2951	1475

Source: Southern Centre for Energy and Environment, 2001

The types of digesters being promoted in Zimbabwe are the Chinese and the Carmetec but the former is the most popular. The units are located at schools, rural homes and selected industries. All these small digesters use livestock dung, especially cow dung, as the feed. Briquetting and gasification are most commonly used. Other type of technologies such as micro turbine technology that utilises the Brayton cycle, as utilized in countries such as Germany, can be utilized in Zimbabwe as well (Zimbabwe Electricity Transmission and Distribution Company, 2016). Rural schools in particular can benefit from biogas utilization using animal waste.

Hydro energy

Hydropower is presently being used in the country, contributing significantly to the national grid. Hydropower potential is concentrated along the Zambezi River, where Zimbabwe and Zambia share a hydroelectric power station on the Kariba dam that was built on the Zambezi River in 1955 - 1960. The present total capacity for the two countries is 1350 MW, of which Zimbabwe's share is 750 MW. The extension of the Kariba South hydro power plant, which is presently underway, will see two additional units, 150 MW each, being installed to increase

the total installed capacity to 1050 MW (Zimbabwe Electricity Transmission and Distribution Company, 2016). This will meet the country's peak power demand and significantly mitigate load shedding. Potential sites for utilization of hydro energy still exist along the Zambezi River (Table 2.1).

Table 4: Potential Hydroelectric Resources on Zambezi River

Dam	Power MW	Energy GWh
Present		
Kariba	750	5,150
Total	750	5,150
Future		
Katombora	390	2,000
Batoka	800	4,370
Devils Gorge	600	3,000
Mupata	600	3,000
Total	2,390	12,370

Source: Source: The Rural Electrification Agency Zimbabwe

Wind energy

Wind speeds over Zimbabwe (average 3 metres/second) are too low for most wind-based power generation technologies, although wind energy has been used for a pilot power generation project at Tamaruru in Rusape and for water pumping at various sites around the country. Wind energy has historically been used to drive wind vanes for pumping water on commercial farms. The highest wind speeds at 10 m above ground level are found in Harare, Chivhu, Gweru, Bulawayo, and Chipinge (Department of Meteorological Services, 2012) with the average speed of these areas being 3.8 m/s at 10 m height above ground level. However, these speeds are irregular both by season and by area and vary widely diurnally. A few wind-powered electric turbines have been installed for local use and these can be developed further with sufficient resources. An estimated 600 locally manufactured wind pumps have been commissioned in the country.

Geothermal energy

Geothermal technology has not yet been investigated in Zimbabwe.

Conclusion

Renewable energy technologies have gained traction over the last couple of years. However, a lot still needs to be done to fully take advantage of the renewable energy resource in available in Zimbabwe. This entails favourable government policies to promote widespread implementation of technologies as well as research and development to design systems that can be best suited to Zimbabwe.

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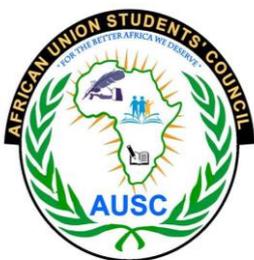
Nothando Ndlovu holds a Master in Physics by Research degree from the University of Fort Hare, South Africa, and a Bachelor (Hon) in Applied Physics from the National University of Science and Technology, Zimbabwe. She has held the position of Project Manager Assistant and currently she is the Research and Project Coordinator for Millantus Enterprises, Zimbabwe. Her research interests include solar thermal energy, photovoltaics and energy efficiency. Nothando has published in

the South Africa Power Engineering Conference Journal, and has made presentations at the South Africa Institute of Physics Conference. **Contact email:** nolee.ndlovu@gmail.com

The 1st All Afrikana Youth Congress 2017 (AAYFC), 15-18 Oct 2017, Hilltop Kigali, Rwanda

By *Mammo Muchie*

A brief pre-declaration statement on the outcome of the 1st AAYFC



1st ALL AFRIKANA YOUTH CONGRESS was successfully held in Kigali, Rwanda at Hilltop Hotel between 15th - 18th October 2017. **October 15th was the time when the historic 5th pan African congress was held.** We chose this moment to recall the decisive actions that Africans took to fully decolonize Africa. The time has come for all African youths (between the ages of 5-35 years) to shape Africa's future by employing creativity, inventions, innovations, startups, incubations, entrepreneurship and job

creators, building sustainable new networks and trustful relationships. Delegates came from all regions of Africa and some creative demonstrations and exhibitions were made. We will share the full declarations in the next few weeks, but in the meantime, we are delighted to share some of the innovative demonstrations that were presented in the First All Afrikana Youth Congress as follows:

1. African youths should join hands to save Africa and the time to unite Africa is long overdue: The youth must take the responsibility to build the integrated Africa with sustainable development by promoting African unity for renaissance.

2. It has been highly inspiring to learn from the youth coming from different parts of Africa, presenting innovative creations that made us all believe the African youth is true change, makers and game changers.

One of the presentations was on the role of Youth in the Afrikana Creative industry, art and music: The inventor presented on Boneza Ball as a game where two teams of six players, compete on any flat surface, be it synthetic grass, concrete or tarmac

court (28 m × 14 m) which is divided into two sides with a straight line. On this line, there are two vertical posts standing at the edge of Urutavogerwa, connected by two parallel, horizontal ropes. Imbonezo is mounted in the center of the ropes, into which a ball is targeted to score goals. Boneza Ball also came to contribute in the prevention and reduction of non-communicable diseases such as depression, diabetes, heart attack, etc. through its sport and entertainment services.



1st AAFYC family photo

The other presentation was on GOORA as a new android application that has been innovated for advertisement and marketing of local products in Rwanda but currently it is used in other neighboring countries. The application is used in understanding market needs with its an application for the local producers to know to sell their producer and buy. The advantage of this technology is that the products are sold from homes with no need to access the market.

3. Environmental protection and sustainable development by using new technologies and innovation for water management. There is also innovation for developing small and micro enterprises for youth to develop green businesses.

4. RICAD Rwanda is an initiative for Culture and Arts Development. It addresses many issues including environmental sustainability, justice, health and climate change, peace education programs, and food security.

5. The Benefit of Blockchain technology can benefit Africa by creating innovation that creates a system that can be used to fight against poverty using android based technologies.

6. The importance of using indigenous knowledge by relying more on the use of traditional medicine in order to treat different diseases, as our people know a lot of traditional medicine.

The youth should be learning and appreciating Ubuntu philosophy. All the youth, from kindergarten to tertiary level, must learn the African Knowledge. which contributed significantly to original knowledge in areas of humanities and sciences. Our youth are not

aware of the significance of this contribution, because the education system has not been fully decolonized. There is therefore an urgent need to decolonize the whole education system across the African world, to allow generations of African youth to grow with confidence, independence, freedom; dignity and self-worth. The general purpose of this discussion was to determine what African youths should do in order to benefit the future generation.

The 1st AAFYC congratulated H E President Paul Kagame for leading the African union reform and getting an African state to start funding the African Union. This is a great inspiration for the youth to see Africans taking ownership to fund the Africa Union, thereby ending the reliance on donors.

Finally, there will be a full declaration of 1st AAFYC 2017 in next few weeks. This is the pre-declaration, brief statement to highlight some of the activities that were presented by delegates from different parts from Africa. We expect all the youth to share the outcome that we briefly outlined here with all the young people in Africa. We ask you to prepare to join us in the 2nd AAFYC.

Africa has to move from resource curse to innovation blessing by removing the current unfortunate challenges of leadership, governance, institution and system problems. The youth of Africa will suffer if the prevailing curse continues. There is thus an urgent need for the entire youth of Africa to unite and make a big difference in Africa. If Africans learn how to own Africa, there is no doubt all will have their wellbeing fully taken care of. Let the youth of Africa make a difference to make up where the leadership failed. Let all the youth make Africa a great success. Let all the youth make our lives the struggle for Africa by appreciating and relearning all the rich values and heritage that originated from Africa.



Professor **Mammo Muchie** holds a DPhil in Science, Technology, and Innovation for Development (STI&D) from the University of Sussex. UK. He is currently a DST/NRF rated Research Professor at the Faculty of Management Sciences, Tshwane University of Technology, South Africa. He is a fellow of the South African Academy of Sciences and the African Academy of Sciences. He is also currently adjunct Professor at the Adama Science, Technology University, Arsi University, Addis Ababa University and University of Gondar, Ethiopia. He is currently the chairman of the advisory board of African Talent hub of the Community Interest Company (registration no.10461990) to raise funds for making Africa the

talent, innovation, entrepreneurship, creativity and knowledge hub of the world. He has been appointed as special distinguished advisor to the Africa Union's Student Council and a mentor for the African Entrepreneurship award. He has initiated the African Unity for Renaissance and Knowledge Exchange series of conferences since the last six years. He is a founding scientific advisor to the African Solar network, founding chairman of the Network of Ethiopian scholars. He has lead the SIDA, Sweden funded research on engineering design and on transformative innovation for African integrated development and educate on public media to speed up the creation of innovative and renascent Africa. He is a founding board member of Globelics, focusing research on the challenges of building African innovation systems. He has promoted Africa and highlighted African Innovation and Development in Globelics foundation. He has served as scientific board members in a variety of networks including ICAT, Medalics as part of the founding scientific board member of the

network that connects North Africa, with the Middle East and Southern Europe, co-founder of the Africalics network. He taught over 400 doctoral candidates in doctoral academies across the world in the Globelics, Africalics, Cicalics, Indialics networks. He has taken major initiatives for running Doctoral and Masters Academy in various universities in Africa and all over the world. He is one of cofounders of ANSOLE at the Linz meeting on the 4th of February 2011. Contact: MuchieM@tut.ac.za

Global Understanding for Sustainability

How the Local and the Global are intertwined

By **Benno Werlen**,

Humans can't keep trying to solve 21st-century ecological problems using strategies derived from 19th-century issues.

The digital revolution has set in motion a process of globalization that is radically transforming spatial and natural relations.

"Many little people, in many little places, doing many little things are changing the face of this world."

(African saying)

Dealing successfully with social and climate changes on a worldwide level requires people to understand their own lives in a global context. This is one of the basic convictions on what the International Year of Global Understanding (IYGU) is building on.

The program of the International Year of Global Understanding (IYGU) – jointly declared by the international councils of the natural sciences (ICSU), the social sciences (ISSC), and the humanities (CIPSH) on the basis of a UNESCO resolution – recognizes that dealing successfully with global social and climate changes requires a global level of understanding: the global embeddedness of local everyday action in socio-cultural as well as in biophysical respect. The IYGU program aims to bridge the gap in awareness between local actions and

global effects and will develop a blueprint for a new geographical view of a radically changing world.

Now as ever, few things are more important than an appropriate understanding of the geographical aspects of our living conditions on this planet. In this day and age, a global kind of understanding is of utmost relevance. This understanding will hopefully lead to the insight that the most challenging problems of the present are those that are global scale yet can be traced back to the cumulative effect of a large number of local, seemingly small, and trivial actions. For global scale problems, we need globally oriented solution strategies. For the solution of these problems, territorial conflicts are simply not an option. All in all, global understanding shall help people to become aware of their own globalized living conditions, independent of whether they are directly or indirectly affected by globalization processes. A geographical education that enables us to understand the global embeddedness of our local actions and the ensuing responsibility as global citizen is of utmost relevance for making this possible.

With globalization, everyday actions operate within and generate new geographical conditions in which things that are spatially distant are no longer temporally isolated but are instead very close. Communication technologies allow information to be transmitted and

exchanged in real time. Because of this, everyone is directly or indirectly part of a globalized geographic reality.

This new *conditio humana*, or human condition, requires people to have a more wide-reaching awareness of their own lives. It necessitates bridging the gap between local acts and global effects — because thinking globally and acting appropriately on a local level presuppose global understanding.

New Conditions Demand Change

Current responses to globalization in the political sphere worldwide tend to invoke backward “solution” strategies rather than future-oriented approaches. Nationalist discourses favor a return to the “correct”, “natural”, and fixed society-space nexus. These discourses share similar ways to construct and maintain that which counts as “reality” as the well-established geographical education, (re-)producing the national unity as a spatially shaped entity, based on the unity of natural and cultural realities, or at least on a territorially regulated unity of culture, society and economy, the nation as country, now exposed to the threat of globalization. In addition, the geography of the national is a geography constituted on the basis of specific (cultural, social, and economic) conditions by our actions.

Humans can't keep trying to solve 21st-century ecological problems using strategies derived from 19th-century issues. The digital revolution has set in motion a process of globalization that is radically transforming spatial and natural relations.

One basic, core assumption of most environmental approaches, for example, is that living spaces exist prior to human action. This conceptualization began with biology and was then applied to countless spatial formations—especially the social ones typical of 19th-century nation-states and their distinct boundaries.

'We live in the most interconnected world in history. Yet at the same time that world is riven by conflicts, dislocations and uncertainties - an unsettling and disturbing mixture of huge opportunities and existential risks. Finding a positive balance

will demand fundamental intellectual rethinking and new forms of collaboration of the sort the IGYU offers.'

Prof. Anthony Giddens (U.K.)

Former Director of the London School of Economics

For many aspects of everyday life in the 21st century, however, this notion is more historical than anything else. Globalization is demonstrating that actions can precede spaces. In other words, spaces are constituted by actions, not the other way around.

That is not to say, however, that globalizing trends efface the local. Globalization also accentuates places and regions as distinctive forums of human action. All human actions remain, in one way or another, regionally and locally contextualized. But with ongoing digitalization and the continued individualization of lifestyle choices, sustainability research needs to advance from a space-centered focus to an emphasis on spatially contextualized day-to-day conduct.

This research should provide insight into the logic of everyday actions and their global consequences. By helping researchers understand how humans act, it should also assist people in understanding the repercussions of their actions. Thus, information is needed about spatially and globally contextualized conduct—especially the intended, unintended, and condoned negative consequences of all kinds of actions in the social, economic, biological, and physical worlds.

Only Understanding Can Transform Habits

Research on global climate change has produced unambiguous scientific insight into complex terrestrial processes. But so far, these revelations are too rarely translated into effective policies.

'Knowledge is the factor that leads us to change our way of thinking. However, it is the understanding that leads to change attitudes. The program of the International Year of Global Understanding puts

emphasis on culturally different paths to global sustainability. And that only changing individual actions will lead to change of collective action whose result will be the improvement of the system in global scope.' Dr. Eliezer Batista (Brazil), key initiator of the 1992 UN Conference on Environment and Development in Rio de Janeiro.

Knowledge alone about the existence and severity of a problem too rarely results in changes in actions—especially with regard to everyday activities that, more often than not, represent deeply ingrained habitual routines. Awareness does not change habits or routines. Only understanding can.

Understanding enables improved social and cultural acceptance of scientific knowledge and helps establish culturally distinct paths to global sustainability. To think globally and act locally, the local and the global have to become one. For this to occur, people need to better understand how their local, daily activities have global impacts.

How the Local and the Global are intertwined

Humans' future on Earth depends on being able to establish sustainable everyday actions that are backed by scientific insight. Societies and cultures need widespread awareness of how their daily endeavors have created—and continue to shape—the challenges that humanity now faces. Seemingly disconnected actions and thoughts need to be unified across time and space.

If current ecological problems are indeed caused by human actions, the reasons for changing habits and implementing new routines lie outside the realm of natural science. Although people increasingly understand non-sustainable practices, they still have a hard time changing their individual and social customs. Defining a healthy relationship between nature and society remains challenging—principally when it comes to designing environmental policies that are informed by sound

science.

For people to attain global understanding, they must first comprehend the circumstances of their own sociocultural living conditions—and grasp the consequences. In what is now being called the Anthropocene age, people have to understand that the most vital parts of the life-world (the subjective world that people experience in their everyday lives) are man-made. That means they are humans' responsibility.

Additionally, people must realize that their corporeal, biophysical way of existence is part of nature, just as the human body is, in itself, nature. Thus, nature is not the environment; nature is the contemporary world.

'The dominant model that favors the culture of having, of profit and of unlimited exploitation of nature leads our planet to its doom: it becomes urgent to promote new daily behavior attitudes rooted in the culture of being, as the foundation for an harmony with the environment in its widest sense. This is the reason for having the International Year of Global Understanding, and the World Conference of the Humanities in 2017 must discuss the theoretical basis of this change of paradigm.'

Dr. Adama Samassekou (Mali)

Former Minister of Education, Past-President of CIPSH, Founder of MAYA and President of the World Conference of the Humanities

Global Awareness

Although it is clear that local and global issues are intimately related, fostering an understanding of the cumulative global effects of individual local actions remains a challenging task.

People need to open up to a new geographical worldview that takes into account most of all four things:

- The diversity of sociocultural ways of interpreting natural conditions
- The creativity of different cultural ways of living
- The plurality of pathways to global sustainability, and
- The local and regional

particularities of globalized living conditions.

Only then can humans establish the necessary setting for this bridge-building exercise.

Towards a Sustainable Age

A precondition of global sustainability is achieving sustainable, ordinary practices. Citizens need to change their actions, habits, and routines so that they become more enduring in culturally and regionally specific ways that keep global conditions top of mind. This entails not just knowing about sustainability but also living it.

'Sustainable development is a global challenge, but solving it requires transforming the local - the way each of us lives, consumes, and works.'

While global negotiations on climate attack the sustainability crisis from above, the IYGU complements them beautifully with coordinated solutions from below - by

getting individuals to understand and change their everyday habits. This twin approach elevates our chance of success against this crisis, the gravest humanity has ever seen.'

Prof. Yuan Tseh-Lee (Taiwan)

Nobel Prize Laureate in Chemistry

In the long run, sustainable living depends on global understanding. This means that people's habit modifications need to be based on a new geographical imagination of the world—one that puts their everyday actions at its core. That way, people transform not only their day-to-day practices, but also their living spaces and the Earth's environment. And that is exactly what IYGU seeks to do.



Benno Werlen, a professor of social geography at the Friedrich Schiller University of Jena in Germany, is the founder and executive director of the International Year of Global Understanding. The initiative is supported by the International Council for Science, the International Social Science Council, and the International Council for Philosophy and Human Sciences. Contact: benno.werlen@gmail.com

Young African Women in Business

Green Spaces by Solvus Zimbabwe

By **Lisa Nyamadzawo**

Green Spaces is a project run by Solvus Zimbabwe; a social innovation youth-led innovation founded by Lisa Nyamadzawo and Trycolyn Pikirayi. It seeks to bring to life public places and outdoors such as parks, public sitting areas, bus termini, swimming pool areas and so forth by leveraging renewable energy.



It aims at making outdoor living a place of preference through providing a comfortable and pleasurable environment by providing assemblies of solar trees. These solar trees, which use renewable solar energy, will provide energy ports, Wi-Fi and lighting for its users. A user can use the Wi-Fi hotspot and at the same time recharge their devices at a very low cost.

The project addresses urban blight in public spaces, energy access and connectivity. With the rapid move towards digitalisation, electronic device usage has increased too, leading to increased energy demand. Public places are characterised by decay and some losing their popularity because they are not providing sufficient services to the users, however this is where people want to be. Studies prove that

working outdoors improves effectiveness and productivity as well as general happiness. The social fabric is changing and so should the service provision.

When solar trees are erected in public spaces, these areas become Wi-Fi hotspots, and charging places where people can enjoy the beauty of the outdoors and at the same time use their electronic devices; revamping public spaces. More people will become connected to the internet and also be able to recharge their devices cheaply.

The ultimate benefits of this innovation will be the creation of communities with public technology hubs everywhere with the access to public Wifi. They become places where knowledge and information can be shared and enriched among community members, where solar is a sustainable source of energy. This is the future of tech advancement, e-learning, e-commerce and a big step towards renewable energy adoption in Zimbabwe. In the future we can also envision ourselves to be recharging electric vehicles, as we are already in the outdoor space industry.

Currently the innovation is at development stage. It seeks funding and capital investment so that it becomes a success. Once sufficient finding is made available, a pilot implementation programme will begin, in the City of Bulawayo public parks and sitting areas.



Lisa Nyamadzawo: BSc Honours Degree in Rural and Urban Planning, Executive Certificate in Project Management.

Rising social entrepreneur with interests in the areas of Green Energy, Public Health, gender and entrepreneurship. Possesses sound knowledge in the areas of renewable energy and Public health solutions for development, policy, management and research. Co-authored two research publications in those fields.

Green Innovations Hub Finalist, Watson U 2017 Fall scholar and ANSOLE days 2017 young entrepreneur. She has also participated in the International Student's Festival in Trondheim. Member of the Internet Society Zimbabwean

Chapter as well as the Zimbabwe Institute of Regional and Urban Planners. **Contact:** lisa@solvuszw.org; +263776695757; Bulawayo, Zimbabwe.

Discover the Young Burkinabe Fashion Designer Safiatou Nana



Young Burkinabe fashion designer, **Safiatou NANA** has recently (January 2018) launched her first and new line of handbags within her brand called "Yiri_Accessories".

Passionate, creative, professional, ambitious and communicative, this is what represents Safiatou Nana. Born in 1992 in Ouagadougou, Burkina Faso, she had passion for fashion since her childhood.

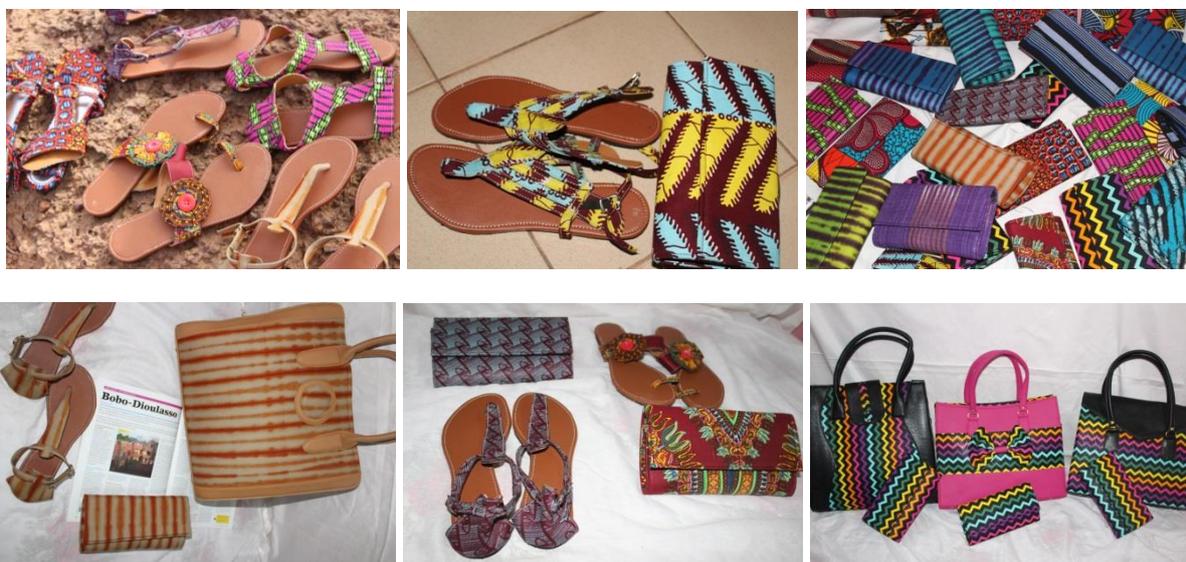
In 2016, after earning a degree in energy engineering, she took steps to realise her dream in the fashion industry. Safiatou put her knowledge and interest in accessories to work, launching her own brand of handbags in early January 2018 and opening a first boutique in Ghoughin district in Ouagadougou soon after. Safiatou realizes the handbags of her collection, from the sketches, to the choices of the colors, fabrics and material used paying attention to each small detail. The result is just INCREDIBLE!



The brand name "Yiri" means "home" in mooré language, the most spoken language in Burkina and Safiatou's mother tongue. Yiri accessories design and produce original handbags, shoes and jewellery, all handmade essentially with African raw materials: wax and ethnic loincloths from Burkina and other African countries. The loincloths are woven and tinted by women in rural areas. The first new collection, with its floral and rich colors, recall the many riches of Africa and the joy of living there. The collection bears the name of "Africa in Bloom".



She said her vision is that of good accessories locally made with local materials, as it will also create more jobs and promote local culture. "...The quality of our products is high enough to surpass the imported accessories from abroad... I want African women to carry handbags that are made in their image: beautiful, strong feminine and African. And I want them to be proud of themselves."



Safiadou hopes that her business will expand in the next years and lead to more recruitment of young people to work in the company. She is optimistic about the future. She wants her brand to get to an international level and open shops in all big cities in Africa, and in other continents as well.

Contacts: email: yirigroup226@gmail.com Telephone: +226 64 60 17 17 (whatsapp)
 Instagram: @yiri_accessories
 Facebook: <https://www.facebook.com/YiriAccessoires/>

If you are interested in purchasing and/or marketing in your respective countries this new African brand, please contact the Coordinator of ANSOLE through email: daniel.egbe@ansole.com. **IT IS TIME TO CONSUME AFRICAN!**



Ms **Safiatou NANA** holds a Master in Energy Engineering from the Pan African University Institute of Water and Energy Sciences (PAUWES) located in Algeria. She previously had a Bachelor degree in Electrical and Energy Engineering from the 2iE Foundation - International Institute for Water and Environmental Engineering in Ouagadougou, Burkina Faso. Ms Nana has recently co-founded a Youth Association called "Youth for Energy Saving", which brings together young professionals in the energy sector or other stakeholders, to act towards raising awareness of energy saving in schools, university residences and other public buildings in her country Burkina Faso. She is member of many

scientific networks in the energy area including ANSOLE and is also currently running her own blog dedicated to renewable energy field at www.energyinafrik.blogspot.com and is in charge of ANSOLE Facebook website.

Contact: safiatounana@yahoo.fr

Profile

Bahir Dar Energy Centre of Bahir Dar University Ethiopia

By *Sameer Hameer*



The Bahir Dar Energy Centre is a Faculty at the Bahir Dar Institute of Technology, Bahir Dar University, Ethiopia, which offers a Master of Science in Sustainable Energy Engineering and a PhD Program in Sustainable Energy Engineering, which has been newly launched. The Master of Science program and the approved PhD program in Sustainable Energy Engineering was developed based on a set of desirable features gleaned from the review of existing programs and the needs assessment of Ethiopia. The Master of Science Program was launched in Feb 2009 GC with an inaugural class of 10 students. The purpose of the SEE program is to provide state of the art education in the fields of power generation, and energy utilization in the built environment by means of economically and environmentally sustainable systems and technologies which fall under the umbrella of the concept of appropriate technology.

Master of Science in Sustainable Energy Engineering

The Standard period of study is:

- 2 years with 4 Semesters (Regular)
- 2 years with 6 Semesters (Weekend)
- 4 years with 7 Semesters (Summer)
- Total Credit Points (CP): 35 + Thesis

Entrance requirements are:

- Bachelor degree holder in relevant Engineering and Science programs
- Acceptable academic performance in prior programs
- Successful performance on admission test specifically designed by Sustainable Energy Engineering (SEE) program

PhD Program in Sustainable Energy Engineering

Standard Period of Study: is 3 to 5 years.

Total Credit Points (CP) for:

- PhD with Coursework: 13 + Doctoral Dissertation
- PhD without Coursework: Doctoral Dissertation

Objectives of the program

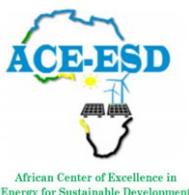
- create platform for conducting research and innovation in sustainable energy engineering
- increase the number of publications, patents, innovations, and community outreach activities in the center
- provide highly qualified (specialist) experts to fill the manpower need of the country especially in the education and research sector
- create opportunity for staffs to upgrade their critical thinking, technological skills, and research capabilities through PhD education
- provide broad-based high caliber, research-intensive, and objective education and training in sustainable energy engineering
- produce graduates with a higher degree of competence through the promotion of research oriented practical education relevant to the energy sector of the country including the high skilled employment needs presented by a growing economy operating in global environment;
- produce a man power of excellence in different dimensions of research in sustainable energy and a graduate with a higher degree of responsibility and relevance to the needs of the country;
- strengthen the link between industry, and university through engagement of the candidates research work on the actual problem of the energy sector of the industry and the country at large.

Research in the area of Sustainable Energy Engineering will address the development and application of scientific principles, economic aspect and related techniques and fully integrated with problem solving particularly visible and pertinent in solving current problems in addition to contributing to the science. Candidates are expected to submit a research concept note during application and develop it with the assistance of their SDAC after admission. The research is supposed to deal with uniquely combating the ever pressing challenges in energy through innovative solutions and Appropriate Technology. A chapter in the applicants research proposal/concept note should include a detailed focus to problems in the community related to energy saving and supply.

You can visit the website: <http://bdu.edu.et/page/create-basic-pageenergy-research-center> for more information.

African Center of Excellence in Energy for Sustainable Development (ACE-ESD), University of Rwanda

By Etienne Ntagwirumugara



Modern energy access acts as a catalyst for development. It connects economic growth with social equity and environmental sustainability which are important Millennium Development Goals. However, the vast majority of sub-Saharan Africans lack access to affordable clean energy and critical energy services. The sub-region also lacks the critical mass of highly skilled professionals, with specialized knowledge in engineering and technology (especially in power systems and in electrical engineering) that is required to generate the innovations needed to boost productivity in the energy sector. This presents a significant challenge which requires sustained efforts to train highly skilled energy professionals, policy makers and practitioners, who will apply research towards the development of renewable energy technologies and solutions for the critical/priority sectors of the economy in the subregion.

The Africa Centre of Excellence in Energy for Sustainable Development (ACEESD) in the College of Science and Technology (CST), University of Rwanda (UR) is being established to address this critical challenge. The Centre is being established under the World Bank's Eastern and Southern Africa Higher Education Centers of Excellence Project (ACE II) supported by national governments within the region. The implementation of the ACEESD is expected to result in building capacity of the East and Southern African region through UR/CST to undertake interdisciplinary research and training in smart and micro-grid energy technologies tailored to serve remote and/or rural areas using renewable sources, power systems, energy management and trade policy, with a target of training 40 PhD and 120 MSc energy experts to improve research and teaching environment.

The ACE II Project at the University of Rwanda, College of Science and Technology

The ACEESD is an approved ACE II project center of excellence envisioned to address key economic challenges resulting from low rural energy access, poor adoption of energy technologies in rural areas, and poor inter-state energy trading in the Eastern and Southern Africa region. The ACE II project is a partnership between the World Bank and Rwandan government to support the government to strengthen selected Institutions of Higher Education to deliver quality postgraduate education and build collaborative research capacity in four regional priority areas (Energy, Internet, Data Sciences and Mathematics & Science). This will provide the much-needed critical mass of MSc and PhD graduates who are fit-for-purpose, and who will serve as the backbone of this transformation. The ACE-ESD will build on its existing Renewable Energy Master's program, which will be revised (with a PhD component) and tailored to micro-grid renewable energy development to serve remote and/or rural areas using renewable sources and inter-state energy trading. ACE-ESD will develop two additional excellent curricula for the training of high level MSc and PhD students. The curricula will be implemented initially at the College of Science & Technology, University of Rwanda, and will be developed and shared with staff at partner universities in East and Southern Africa. ACEESD's courses will be accredited by the Energy Institute, UK in the short term and in the long-term by the Accreditation Board for Engineering and Technology (ABET).

Goals and project objectives:

The mission and vision of ACE-ESD is to create a world-class energy centre that will be a regional hub for research and training of African engineers, policy makers and energy utility managers (in micro-grid energy systems using renewable energy sources and interstate energy trading, management and policy); contribute to rural development through technology transfer; and nurture and promote entrepreneurship development in the energy sector towards sustainable development.

The specific project objectives of ACE-ESD are:

- To provide national and regional capacity-building (Masters & PhD) for the establishment and implementation of energy systems using local energy sources and appropriate technologies to cover energy needs for sustainable development;
- To provide policy development skills training for students, policy-makers and utility managers aimed at building policy and monitoring capacity in the region which is critical for effective interconnection of energy systems.
- To provide energy research, consultancy and advisory services to both public and private organizations at national, regional and international levels;
- To develop and transfer appropriate energy technologies for sustainable development at the national and regional levels;
- To contribute and strengthen cooperation between industry and academia in the field of clean energy.

Expected outputs of ACE-ESD:

At the end of the five year period of the World Bank grant, ACEESD is expected to achieve the following outcomes: (i) transform an existing Renewable Energy Master's program at the UR-CST and develop new specialized graduate programs (2 masters and 3 PhD programs), (ii) obtain international accreditation for at least one new specialized graduate program, (iii) Train 40 PhD and 120 Master students, of which 30% would be regional and 30% female, (iv) train 80 practitioners and policy-makers through short term courses, of which 30% would be regional and 30% female, (v) establish a modern well-equipped micro-grid research laboratory, (vi) published 30 peer-reviewed research publications, of which at least 60% include regional and international co-authors, (vii) attract an average of \$0.5M per year in externally mobilized funds, (viii) improved research and teaching environment through a lecture rooms and students workstations to provide new lecture and seminar rooms, high performance computing unit and e-learning platform.

ACE Action Plan to achieve Learning Excellence

1. Objective of plan

To build capacity through training national and regional Masters & PhD students, technicians, and policy makers who would be able to establish and implement energy systems based on the use of available energy sources and appropriate technologies to cover energy needs for sustainable development.

2. Expected results:

- Strengthen Education Capacity excellence – quality and productivity:
- Number of MSc/PhD students and graduates
- Short Courses and Industrial Training
- Investment in Purchasing Lab and learning Equipment
- Initiating program accreditation at national and regional levels
- Revising existing programs and curricula at University level
- Faculty capacity development and upgrading (including attracting new faculty)
- Regular project review meetings

ACE-ESD Masters and PhD Programmes

- MSc & PhD (by research) in Renewable Energy Technologies focusing on Smart Grid Technologies: Wind, Solar, Mini-Hydro, Biomass, Geothermal.
- MSc & PhD (by research) in Electrical Power Systems focusing on Power systems dynamics, power electronics for renewable energy, generation, transmission and distribution systems).
- MSc & PhD (by research) in Energy Economics focusing on Trade; Policy; Economic Evaluation of Renewable Energy Technologies; Inter-State Energy Trade Policy, Utilities Management.

Rwanda provides the ideal climate for ACEESD. It has displayed sustained high rate of economic growth supported by a track record of strong, transparent governance and management structure. In addition, as a host institution, the College of Science and Technology has strong support links with industry, government and international partners from the Region, Europe and USA. This will invariably result in the program having a significant impact on policy formulation, optimization of business models and technology transfer for achieving national and regional energy priorities. The existing collaborations will foster strong regional and international partnerships to facilitate access to world-class research infrastructure such as laboratories, as well as facilities.

Address: Avenue de l'armée. P.O Box 3900 Kigali, Rwanda, Website: <http://aceesd.ur.ac.rw/>



Prof. Dr. Eng. Etienne Ntagwirumugara is the Director of ACE-ESD at University of Rwanda, College of Sciences and Engineering which is funded by the World Bank Group. He was Head of Department in Electrical and Electronics Engineering at the College of Science and Technology, University of Rwanda. He has been the Coordinator of Rwanda Education and Research Network (RwEdNet) which is an ICT project under Ministry of Education and University of Rwanda. He is a Chairman of Rwanda National Electrotechnical committee and Professor in Electrical, Electronics and Telecommunications Engineering at the University of Rwanda. His current research interests are general in Renewable energy, Power Systems Engineering and Energy policy making field, Information Communication

Technology, Mathematics modelling tools, Complementary Metal Oxide Silicon (CMOS), high linearity wireless communication receivers, optoelectronic integrated circuits, and surface acoustic wave filters for Global system in mobile communication (GSM) and Global Positioning system (GPS), Microelectronics and Nanotechnology, mobile & wireless communications, IC Design & microelectronics, Broadcasting Engineering, Satellite Broadband Communications, Multimedia Communication & Networks, VLSI Design Methods, Analysis and Design of Integrated Circuits. He has published more than 40 high ranking articles and supervised numerous postgraduate students. Contact: etienne.ntagwirumugara@gmail.com

Seeking Postdoctoral Position

Dr. Sidi BOUHAMADY

Je suis **Sidi BOUHAMADY** titulaire d'un doctorat en sciences de l'ingénieur spécialité: Systèmes Energétiques et Environnement de l'Ecole Supérieure Polytechnique de Dakar. Mon sujet de thèse porte sur: "Evaluation du potentiel de la technologie solaire thermodynamique à concentration en climat désertique et Sahélien, Cas de la Mauritanie".



La soutenance de ma thèse a été sanctionnée d'une mention: **Très honorable avec félicitations du jury.**

L'objectif de cette thèse a été à la fois l'identification des régions favorables pour l'implantation de centrales solaires thermodynamiques à concentration en Mauritanie et la modélisation numérique d'une microcentrale solaire à concentration constituée d'un champ de capteurs linéaires de Fresnel, de deux stocks de chaleur sensible et d'une machine ORC. *Principaux travaux réalisés:*

- Identification des régions favorables pour la technologie solaire thermodynamique à concentration en Mauritanie
- Expérimentation et modélisation d'un cycle de Rankine organique de 3 kW.
- Modélisation et simulation de deux stocks de chaleur sensible
- Simulation d'un modèle optique du champ de capteurs linéaires de Fresnel couplé à un modèle thermique du

récepteur linéaire

- Pré-dimensionnement des différents blocs de la microcentrale solaire suivant la stratégie de contrôle commande retenue.

Ces différents travaux ont permis d'avoir six publications scientifiques dans des revues à diffusion internationale et la participation dans six conférences dont quatre internationales.

Présentement, je suis à la recherche d'un postdoc afin de mieux réaliser des perspectives qui nous semblent intéressantes pour ce projet de recherche et augmenter le rayonnement scientifique dans ce domaine utile pour nous africains.

Ma thèse et le projet de recherche associé ont été soutenu financièrement par: le gouvernement Français, le gouvernement Mauritanien, African Network for Solar Energy (**ANSOLE**) et le Centre d'Excellence Africain en Mathématique, Informatique et TIC (CEA-MITIC) que je remercie beaucoup.

Avant ma formation doctorale, j'ai obtenu un diplôme d'ingénieur en Electromécanique l'Ecole supérieure Polytechnique de Dakar. Contact: sidi707@hotmail.fr

Dr. Mohamed Izzedine Serge ADJIBADE



Mr Serge Adjibade was born on the 26 February 1987 in Benin. He became design engineer in 2011 after studying Mechanical and Energetic Engineering, at the Ecole Polytechnique in Abomey-Calavi in Republic of Benin. He completed his PhD using the ANSUP fellowship programme in 2017 on energetic system and environment at the Cheikh Anta Diop University in Senegal under the supervision of Professor Dorothe Azilnon.

He has coauthored the following three publications:

1. M. I. Adjibadé, K. Ntsoukpoé, A. Thiam, C. Awanto, D. Azilinson, Exergetic Optimization of Absorption Chiller Single Stage H₂O-NH₃ by Experiments Design Method, Journal of Materials Science and Engineering A 7 (5-6) (2017) 143-156.
2. M. I. Adjibadé, A. Thiam, C. Awanto, D. Azilinson, Experimental analysis of diffusion absorption refrigerator driven by electrical heater and engine exhaust gas, Case Studies in Thermal Engineering 10 (2017) 255–261.
3. M. I. Adjibadé, A. Thiam, C. Awanto, B. A. NDIOGO, Vincent SAMBOU, Dynamic investigation of the diffusion absorption refrigeration system NH₃-H₂O-H₂, Case Studies in Thermal Engineering 10 (2017), 468-474

His research fields of interest are:

- Thermal engine
- Absorption chiller
- Cogeneration system
- Computational fluid dynamics
- Energetic and exergetic analysis of the system

He is presently seeking a Postdoc position. Contact: Email: izzedineadjibade@gmail.com, amihad007@yahoo.fr, TeL: 00 221 77509 94 49

Dr. Eng. Sameer HAMEER



Dr. Eng. **Sameer Hameer** is currently an Assistant Professor at the Bahir Dar Energy Centre, Bahir Dar University, Ethiopia for 1 year now. In his short tenure, he has developed several collaborative linkages with renowned Internal Universities in the field of Sustainable Energy and has supervised 5 students, of which two have successfully defended their MSc research. He was instrumental in developing the PhD Program in Sustainable Energy

Engineering at Bahir Dar Energy Centre, which has been recently launched. He was the elected the chairperson of the team for developing the PhD Program in Sustainable Energy Engineering. Additionally, he has taught Sustainable Power Generation and Utilization and Fundamentals of Energy Engineering to MSc students including Wind Turbine Design. He initiated research projects at Bahir Dar Energy Centre on the Development of a Low Cost Solar Thermal Test Facility and Techno-economic Assessment of Solar Thermal Technologies for cogeneration in Bahir Dar. He has served as the Acting Head of Sustainable Energy Science and Engineering Department at the Nelson Mandela African Institution of Science and Technology (NM-AIST) in Arusha, Tanzania. In his tenure at NM-AIST, Dr Hameer was the Principal Investigator for the Erasmus+ project and led the NM-AIST team along with local and international partners that won the grant of 883,000 Euros for three years (2016-2019) for the project: Development of the Harmonized Modular Curriculum for the Smart Grid (DAMOC). Dr.Hameer holds all his degrees from Georgia Institute of Technology, Atlanta, GA, USA: BSc. (Hons.) Electrical Engineering, MSc. Aerospace Engineering, and PhD. Aerospace Engineering. Dr.Hameer has a substantive number of publications in the area of energy storage, thermal energy storage, and solar thermal energy. He was also the recipient of a 2 year Post-Doctoral Fellowship at the Centre for Renewable and Sustainable Energy Studies (CRSES), Stellenbosch University, South Africa from October 1st 2013 to September 30th 2015. His research work concentrated on thermodynamic modelling aspects of thermal energy storage and practical work on the development of a

solar water heating test centre of excellence. He also co-wrote a book on the status of energy research in South Africa, sponsored by the ASSAf. He successfully led a technical team to evaluate the aircraft maintenance and pilot training programme at Karume Institute of Science and Technology, which is a technical school in Zanzibar, Tanzania. The programme is already running with 35 students. Dr.Hameer was the recipient of the TWAS-DFG award in 2012 for a visiting scientist from Sub-Saharan Africa hosted by the Technical University of Berlin and Reiner LemoinelInstitut in Berlin, Germany, where he served as micro-energy systems engineer. He is also a professional engineer recognized by (ERB-TANZANIA), PENG. 3442. He was recently elected an Affiliate Member of the African Academy of Sciences and was one among the two selected from Tanzania for the years 2017-2021. Contact: sameer.j.hameer@gmail.com

Dr. Priscillia Musoh MANJOH



Priscillia M. Manjoh is a Cameroonian residing in Germany. She is the author of the award-winning novel *Snare* (2013), maker of the film titled *Sucki* (2017) and part-time lecturer. Her area of research is Postcolonial Literatures and Cultures. Her upcoming publication which is based on her Phd dissertation is titled *Representations and Renegotiations of the Nation in Anglophone Cameroonian Literature*. Her work examines the issue of nationalism, nation-building, marginalization, corruption, and ethnicity in the works of Anglophone Cameroonian and other African writers. She is also a Representative for Africans and a Speaker on issues such as racism, discrimination, marginalization, migration, corruption, interculturalism, feminism. She is an ANSOLE member and she recently joined the editorial board of

ANSOLE e-Magazine. She is presently looking for a post-doc position, a regular teaching position or any suitable job opportunity. Contact: E-Mail: manjohpris@yahoo.de Tel: (+49) 1751570662.

Dr. Mariem GUESMI



Mariem Guesmi received her BSc in Physics and M.Sc in Quantum Physics from the Faculty of Sciences, Tunis-EI Manar, Tunisia. In 2013 she enrolled for her PhD thesis at the same institution and was awarded a fellowship from the Tunisian Ministry of Higher Education and Scientific Research in 2014 and an ICTP-ANSOLE Africa-North Exchange (ANEX) fellowship in 2015 to carry out the experimental part of her PhD research at the Linz Institute for Organic Solar Cells (LIOS) of the Johannes Kepler University Linz, Austria. She completed her PhD in October 2017. Her research areas include Photophysical properties of organic materials such as polymers in solutions and thin films, and organic photovoltaics. She focuses in particular on the intermolecular interactions (H and J aggregates), the process of energy transfer in single excited states and exciton diffusion. She searches now a postdoctoral position to continue researching on optical and electrical properties of organic and Hybrid Polymeric materials. Contact: mariem.guesmi0@gmail.com

Wedding Bells...

Vivian Weds Patrick

By Vivian Suru John-Denk

Our big day was celebrated both in Nigeria and in Linz, Austria. We had the traditional and church weddings in Nigeria on 11th and 12th August 2017, respectively, and had the court wedding on 28th of September 2017 in Linz, Austria. The weather was fabulous for both marriages. The sun was actually shining. The weather was cloudy and grey the day before the traditional marriage and was forecast to continue that way but somehow the heavens were really smiling upon us. It was so special to see that it was a beautiful day. My husband and I had a lot of photos taken with family and friends. It was the most memorable and fabulous days of our lives.



Traditional, church and court marriage of Vivian and Patrick

My PhD graduation also took place on 27th of August 2017. It was indeed a blessed year. Attached are a few photos from the occasions.

Clarisse Weds Dagobert

The wedding of our National Representative in Rwanda, Clarisse Nishimwe Nibagwire and Dagobert Rugwiro took place in Kigali on the 6th of January 2018. The court marriage was held in the morning, while the church blessing was done in the afternoon of that Saturday of Epiphany. We congratulate both and wish them a sustainable marriage.



During legal and church marriage of Clarisse and Dagobert on the 6th of January 2018

ANSOLE Events Calendar

- CPEEL-ANSOLE Regional Conference , 5-6 March 2018, University of Ibadan, Nigeria
- ANSOLE National Meeting and Training Workshop in Rwanda, 19-24 March, ACE-ESD, University of Rwanda, Kigali, Rwanda
- Africa Days in Jena, 19-21 May 2018, Jena, Germany
- Joint Event: ANSOLE National Conference in Cameroon (ANSOLECAM 2018) and ANSOLE International Conference (ANSOLE DAYS 2018), 02-06. September 2018, Centre Polyvalent de Formation de Mbouo, Cameroon

Editorial Board Members



Dr. Sarah Holliday received her PhD in Chemistry from Imperial College London, UK and has since worked as a postdoctoral Research Associate in the Department of Materials Science & Engineering at the University of Washington, Seattle. Her research interests are focused on the development of low-cost clean energy technologies, including printed organic photovoltaics and kesterite solar cells, as well as microbial fuel cells for energy and wastewater treatment. She is also interested in the application of these new technologies to increase energy access globally, and is looking to engage with colleagues in Africa in order to build research collaborations in solar energy. Currently she is working in cooperation with ANSOLE and the University of Washington Clean Energy Institute in order to strengthen ties between researchers in Africa and the USA, to work together in developing clean energy technologies. Sarah is a member of the ANSOLE editorial board. **Email:** sarahgeneste.holliday@gmail.com.

Dr Priscillia Musoh Manjoh (see biography on page 52)



Daniel Ayuk Mbi. Egbe received his BSc in Physics and Chemistry in 1991 from the then University of Yaoundé (now University of Yaoundé 1), Cameroon. In 1992, he moved to Germany where he obtained a MSc and PhD in Chemistry in 1995 and 1999, respectively, from the Friedrich-Schiller University of Jena. He completed his habilitation in Organic Chemistry at the same institution in 2006.

From 2006 to 2008, he spent postdoctoral stays at the Max Planck Institute for Polymer Research in Mainz, Germany, the Technical University of Eindhoven in Holland, and at the Technical University of Chemnitz, Germany. Since 2009, he researches and lectures at the Johannes Kepler University Linz, where he is presently member of the Institute of Polymeric Materials and Testing (IPMT).

Egbe's main research interest is the design of semiconducting materials for optoelectronic applications.

He is a member of Organic Electronics Association (OE-A), and a board member of the World University Service (WUS) in Germany. He is the initiator of the German-Cameroonian Coordination Office, initiator and International Coordinator of the African Network for Solar Energy (ANSOLE), initiator and chairperson of ANSOLE e.V., an institution legally representing ANSOLE, and initiator of the Cameroon Renewable Energy Network (CAMREN). He also initiated and coordinates the research platform BALEWARE (Bridging Africa, Latin America and Europe on Water and Renewable Energies Applications). In 2015 he was an independent evaluator for the World Bank Group in higher education issues and was appointed member of the scientific council of the newly created "Ecole Supérieure des Métiers des Energies Renouvelables (ESMER), in Benin. He was part of the team engaged in developing research programs at the Pan African University Institute of Water and Energy Sciences (including Climate Change) (PAUWES) in Tlemcen, Algeria. In 2016 he was appointed the first Distinguished Brian O'Connell Visiting Fellow of the University of the Western Cape, South Africa. He is the director of the VolkswagenStiftung-sponsored Summer Schools on sustainable energetics and on water. He is presently PhD supervisor and visiting lecturer at the African Centre of Excellence of Energy for Sustainable Development (ACE-ESD) of the University of Rwanda in Kigali. He is head of the team evaluating the East African solar energy network (MSSEESA) sponsored by ISP of Schweden

He has published more than 120 peer-reviewed articles. He speaks 5 languages and is father of 4 children. Contact: Daniel.egbe@ansole.org, daniel_ayuk_mbi.egbe@jku.at Skype: daniellegbe1

**7th Anniversary Celebration of ANSOLE,
4 February 2018,
Evangelische Pfarrgemeinde A.B.,
Linz-Urfahr, Austria**



"Siehe, ich habe vor dir eine Tür aufgetan, die niemand zuschließen kann"
Offenbarung 3:8

**7th Anniversary Celebration of ANSOLE,
4 February 2018,
Evangelische Pfarrgemeinde A.B.,
Linz-Urfahr, Austria**



GOTTESDIENST-
GRUSS
20.2.2011



God spoke to Avram in Genesis 12:2-3

**²I will make you into a great nation, and I will bless you;
I will make your name great, and you will be a blessing.**

**³I will bless those who bless you, and whoever curses you I will curse;
and all peoples on Earth will be blessed through you.**