



WORLD FEDERATION OF ENGINEERING ORGANIZATION

Women in Engineering Standing Committee (WIE)

Activity Report

January, 2016 to December, 2019

By

Engr. Valerie Agberagba FNSE

Chair

Vision

To have women and men engineers, in equal opportunity, work to constructively resolve international and national issues, using the strength of their diversity and their differences for the benefit of humanity.

Mission Statement

To develop and confirm its position on the new social challenges of participation and leadership of professional women in a sustainable way, by offering support to enhance a concrete comprehension of the activities by WFEO member nations in order to integrate the gender dimension in their organizational activities and in the engineering profession in general, while helping in improving the representation of women engineers within WFEO's organizations in attracting and retaining young females interested in becoming engineering professionals worldwide.

FORWORD



It gives me great pleasure to introduce this review of the work of the WFEO Committee for Women in Engineering over the past two years.

The WFEO Committee for Women in Engineering was established at the WFEO General Assembly in New Delhi in 2007 where I am proud to have spoken on the need for such a Committee. There were only three women present as delegates at this meeting. Since that time increasing numbers of women attend as WFEO delegates and the Committee, now hosted by the Nigeria Society of Engineers, is increasingly successful. The Committee is driving vital projects which progress not only the Sustainable Development Goal 5, Gender Equality, but other areas including water and sanitation and education.

The Committee had its inaugural meeting in Brasilia in 2018 and celebrated its 10th anniversary with an

event on 8th March 2018 at UNESCO with the inaugural Africa Women in Engineering Forum that was held during Africa Engineering Week in Mombasa in September 2018. These milestones show the progress that has been made over the past 10 years.

During the past two years, under my term as President of WFEO, the participation of women has increased quickly and significantly, every board committee at WFEO now has at least one-woman engineer as a member, two technical committees, on engineering and the environment and engineering innovative technologies, are chaired by women. Our annual conferences now feature women engineers as plenary speakers, and in increasing numbers in the conference sessions. 20 percent of speakers were women at the Global Engineering Congress in London in 2018 and there will be a similar percentage at the World Engineers Convention in Melbourne in November 2019. These numbers have never been achieved before. I am delighted that women have shown great leadership by contributing to WFEO in many other ways, including reviewing the UN Global Sustainable Development Report released by the UN in September 2019 All this conveys a strong message about women as equally competent contributors to engineering, which is essential for sustainable development.

WFEO presented the inaugural WFEO Gree Women in Engineering Award at the Global Engineering Congress in London in October 2018, which recognises the achievements of women engineers. The celebration of World Engineering Day for Sustainable Development on 4th March each year will be an opportunity to engage with women and girls around the world on the importance of engineering and technology and for careers in this field. We need women engineers more than ever for to meet the goals for sustainable development.

I thank Ms. Valerie Agberagba, Chair of the WFEO Committee for Women in Engineering and committee members for their hard work and commitment. My congratulations for your efforts and very best wishes for further success in future.

Marlene Kanga, AM Hon. FIEAust Hon. FIChemE, FTSE
WFEO President,
30 September 2019

Leadership 2016-2019



Engr Valerie Ifueko Agberagba FNSE (Chair)

DelVecchio holds a B.S. in chemical engineering from the University of Cincinnati in Ohio, USA. She was the 2013-2014 president of the Society of Women Engineers. She was named a fellow of the society in 2015 and received the society's Advocating Women in Engineering Award in 2018. Stacey DelVecchio is President of Stacey D Consulting, focused on the business of additive manufacturing with over 30 years industry experience

Agberagba is a graduate of Metallurgical & Materials Engineering. She was President of the Association of Professional Women Engineers of Nigeria in 2006-2007. A past Vice President of the Nigeria Society of Engineers. In addition to her work in the Power Sector, she runs a mentoring NGO. Agberagba has 29 years industry practice in Quality Control & Power.



Stacey.M.Delvecchio(Secretary)

**Theme 1: Engineering Workforce Diversity
Vice Chair Stacey M. DelVecchio, USA**



**Deputy Vice-Chair: Wen-Jean Hsueh, PhD
China**

Wen-Jean Hsueh devotes herself to the cross-disciplinary innovation of technology and humanity. A co-founder and general director of Creativity Laboratory at the Industrial Technology Research Institute (ITRI) 2004-2013, leading cross-disciplinary teams to explore unique human-centric values. She directed several international interactive technology expos by integrating technology, design, marketing, and the arts, which cultivated numerous creative talents and integrators. Wen-Jean often plays the role of vanguard. She became the first technology vice president of National Taiwan University of Arts in 2016;

Theme 2: Leadership and Empowerment



**Vice-Chair: Yvette Ramos, Switzerland
Holds a Master's degree in Science of Engineering –(Electronics Telecom) from the Ecole d'Ingénieurs EPF (Polytechnique Féminine) in 1992 in France. Holds a Master's Degree in Human Resource Management and MBA "Change & Technology Management" from IAE Aix-En-Provence, France (2002). With a background in Engineering and twenty-five years professional experience, starting with a position of Project Manager in the Industry (Schlumberger, Ascom) to Expert in Strategic planning and Change Management, including capacity development for telecom companies and hydromet services at international level, she has developed**

extensive experience on managing teams and projects abroad.

Theme 3: Engineering Strategic Indicators



Vice Chair Ania Lopez

Lopez has a Master of Science in Mechanical Engineering, graduated in Italy and Cuba. A Councillor of the Italian National Council of Engineers, a member of the Board of Directors of Foundation of National Council of Engineers of Italy, Component of UNI (technical committee) in Project Manager of

Italian Government and Manager of Sustainability & Environment of PMI Central Italy Chapter. Winner of National Competition of Ministerial Technical Officer by Ministry of Justice. She has created and coordinated the National Project Enhancement of female figure in technical-scientific profession Ingenio al Femminile, storie di donne che lasciano un segno.

UNESCO Relations: Engr. Valerie Agberagba (Chair, WIE)

MEMBERSHIP PROFILE



Leong, Wai Yie:Electrical electronics Engineer, 5G technology, signal processing, artificial intelligence



Nancy Paracka Grossman
Professional Education: Civil/Management Engineering
Practice: Project Management/Information Technology



Stacey Delvecchio
Professional Education: chemical Engineer Professional area of specialization: additive manufacturing



Mercy Manyuchi-Chemical Engineer (Energy and Mining Sector)



Yvette RAMOS: MSc, Robotics/ICTs/Automated, Systems Artificial Intelligence (1992) MBA Human Resource and Change Management (2002). Area of Specialization: ICTs/telecom/climate change adaptatio

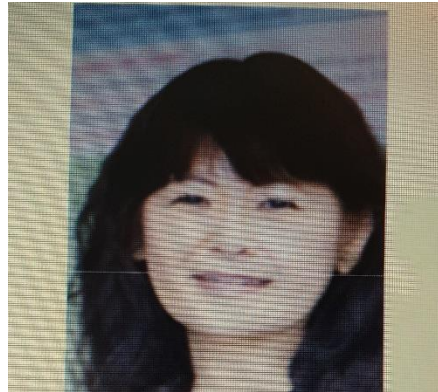


Moraes Iracema



Alice Cunha da Silva
Professional education:
Nuclear Engineering
Area of focus:
generation/nuclear reactors

energy



Kayoko Yamamoto (Japan)
Professional education:
Social Systems Engineering
Academic fields: Spatial Information
Science, Urban and Regional Planning,
Environmental Science, Disaster
Science



Wen-Jean Hsueh
Discipline: Mechanical Engineering
Area of Specialization: Management of
creativity and innovation, Cross-
disciplinary innovation of technology
and humanity



LIDIA ZAKOWSKA
Engineering: Civil Engineering,
Specialization: Transportation and Road
Safety,



Er. Emily Tan (Singapore)
Area of Specialisation: Civil
Engineering specialising in Traffic,
Transport and Road Safety Engineering



Ir Mandy Leung– Electrical Engineer (Hong Kong) Power Grid Planning, Regulatory Management, Transmission Circuit & Substation Project Implementation



Ania Lopez: Professional Area: Civil Implantation, Renewable Energy, Green Economy, Environmental Project Management



Dawn Bonfield
Specialization: Inclusive Engineering
Professional Education: Materials Engineering



Ruomei Li: Electrical Engineer, interested area: Power and Energy System, control, Power electronics, Power System, digital simulation ,Renewable energy



Jeanette Southwood
B.A.Sc, Chemical Engineering
M.A.Sc, Chemical and Environmental Engineering



Hema Vallabh
MSc Chemical Engineering



Belén García de Pablos
Discipline: Naval Architecture
Area of Specialization: Marine Engineer



Ohene Sarfoh Rita



Moura Fortes Rita



Nyakutsikwa Berverly Farai –
Zimbabwe



Horting Karen



Alfalsi Maryam



Milène GUERMONT

Discipline: Civil Engineer (patents pending) and Artist
Area of Specialization: - ART & TECH:
creator of pieces of art and engineering



Micheline Wehbe Sleiman

Discipline: Agricultural Engineering
Area of Specialization: Agricultural
Engineering (Plant Production)



Valerie Ifueko Agberagba

Discipline: Metallurgical & Materials
Specialization: Quality Control, Power



Marlene Kanga

Discipline: Chemical Engineering
Specialisation:

ACTIVITIES 1.

THE INTERNATIONAL WOMEN'S DAY CELEBRATION, MARCH 2016 (AFRICA)

The activities globally towards increasing the number of women in Engineering and Technology through the years have been on the increase. The level (number) of women, generally in employment and leadership amongst the private and government sectors is increasing to some extent, but a review of this exposes the fact that these are women in the humanities or women in business. There is therefore the need to not only review achievement so far in the engineering sector, but to set a course towards reducing the disparity. Therefore, the theme for 2016's International women's day was very apt, "Pledging for Parity"



Chair, CWIE, Engr Valerie Agberagba



Engr. Ali (COREN), Engr. Anyeaji, NSE, Engr. Okeke, Chairman, and Engr. Shehu, FAEO



UN EVENT, MARCH 2016

March 2016, WIE Secretary Stacey DeVecchio represented WFEO at the 60th session of the Commission on the Status of Women (CSW) at the United Nations Headquarters in New York City, WFEO was invited to participate and it was an impactful event.

The Commission consisted of numerous reports prepared by UN two themes: women's empowerment and its link to sustainable the elimination and prevention of all forms of violence against While these themes hit at the heart of severe issues women and a session that was closer to the work we do at WFEO. The Kingdom, and Northern Ireland hosted a session on "*More women investment in the future!*". The main speakers were the Denmark well as the CEO of Lady Geek. While the information shared was Women in Engineering Committee (WIE) meeting, it was the issues are the same and being reinforced.



Women, including an emphasis on development and the review theme, women and girls.

girls face around the world, there was countries of Denmark, United in science and technology - an and United Kingdom Ambassadors as similar to what we receive at a WFEO refreshing to hear confirmation that

Visit to Ghana for Women in Engineering Conference



WinE Executives with GHIE President



Chair, WIE, Engr. Valerie Agberagba



Group Photo with students and guest speaker



WinE ExCo, Chair WIE, APWEN Chair And Guest Speaker

WOMEN IN ENGINEERING WORKSHOPS IN LIMA, PERU

The WIE Committee had two workshops in Lima along with their meeting session. The workshops were on two of the three themes:

The first, Leadership and Empowerment was an in-house workshop and the other was on Engineering Workforce Diversity. Invitation was extended to WFEO Executive Committee and other members. The invite was honoured by WFEO Executive Committee led by the President Jorge Spitalnik, STC chairs and National members



2017 ACTIVITIES

1. INTERNATIONAL WOMEN'S DAY

March 8th is annually celebrated across Nations as the United Nations International Women's Day. In 2017, the Chair, WIE Committee communicated with members consistently and encouraged them to carry out activities to mark the day. However, towards the programme, The Peru Engineers Association invited a 10minutes recorded message for the programme been organized to celebrate the Day. The Chair, therefore recorded a message that was sent to all members of the Committee to use in their respective programmes.

Kindly find the video link below:

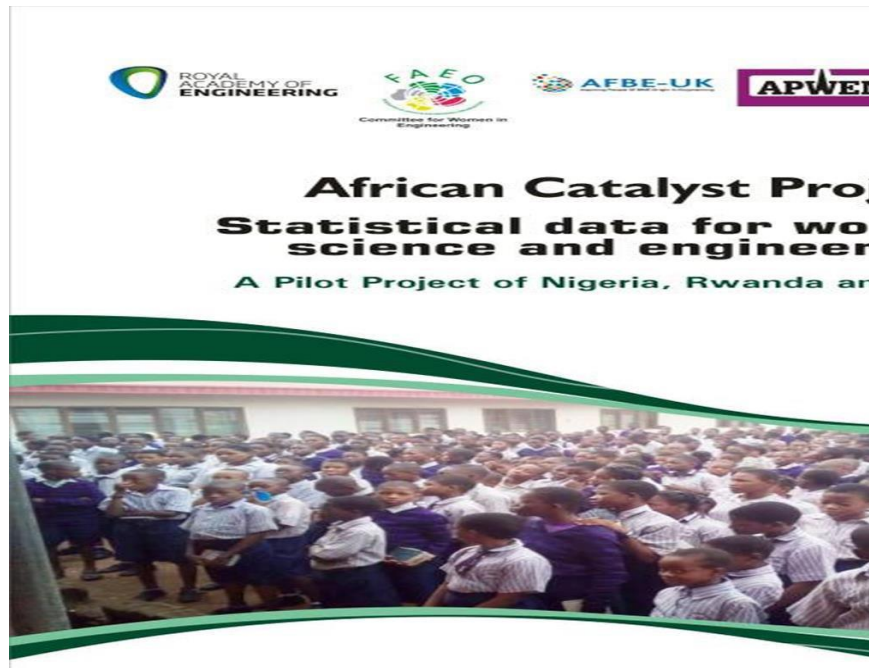
<https://youtu.be/RDOfrvpFmQ>



2. COMMITTEE MEETING HELD IN AMSTERDAM (1st Regional Meeting)



6.0 THE CHAIR, WIE SPONSORED DATA GATHERING FOR WOMEN IN ENGINEERING: PILOT IN THREE COUNTRIES: MALAWI, NIGERIA & RWANDA



The underrepresentation of women across the globe in science, engineering and technology (SET) has attracted concerted efforts by different organizations. In their support for the girl-child education and increasing the number of women in SET for improved socio-economic and technological growth, various

countries have, put in place legal frameworks or policies to achieve desired targets. In Africa, the situation is not different, however what is of major concern is that with the exception of South Africa there is no empirical data for the participation of women in SET.

As the Chair of the Committee for Women in Engineering, it was of great concern because the impact of our activities and the collective activities of member countries could not be quantified. In view of this the African Catalyst Project executed and funded through the Royal Academy of Engineering, United Kingdom (UK) was of great interest and a welcomed initiative. The Committee with our UK partner Association of Black and Minority Engineers (AfBE) in collaboration with Science, Engineering and Technology Development Network (SciEtech) and Association of Professional Women Engineers (APWEN) have carried out this survey towards developing a baseline data for Women in Science, Engineering and Technology. The survey was executed in three countries Malawi, Nigeria and Rwanda with a coordinating team in Nigeria with the Institution of Engineers, Rwanda (IER) and the South African Federation of Engineering organizations (SAFEO) executed in Rwanda and Malawi respectively.

7.0 AFRICA CATALYST PROJECT STAKEHOLDERS REVIEW MEETING

The Chair, WIE, Engr. Valerie Agberagba held a stakeholders meeting after the successful completion of the Africa Catalyst Project. The meeting held on Friday, 15th September, 2017 at the Auditorium of the Nigerian Society of Engineers to validate findings and help further work on the project.

The meeting which was well attended by the relevant stakeholders had the following Discussants,

- The President of the Nigerian Society of Engineers
- Representatives of the Nigerian Society of Engineers
- The President of FAEO
- The Chairperson of the Association of Professional Women Engineers, APWEN
- Representatives of APWEN
- Representatives of Africa Union
- Representatives of the Federal Ministry of Education
- Representatives of the Federal Ministry of Science and Technology
- Other stakeholders

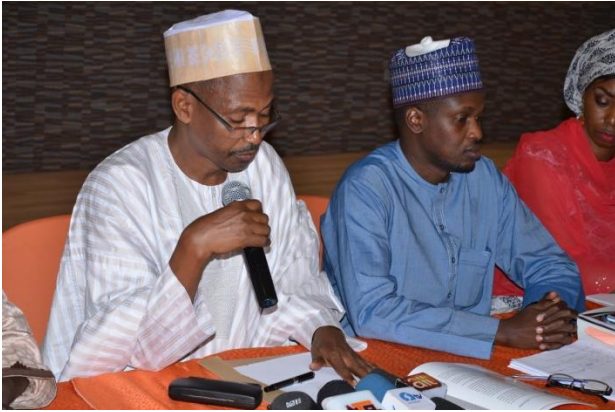
The meeting resolved and emphasized the need to showcase more Female role models and take on mentorship to boost the participation of female in SET, giving room for more female SET participation in the sector as well as lauding the efforts of females who

take on SET will encourage the influx of more female participation.

Certificates were awarded to the best enumerators who participated in survey exercise for this project.

Photo Gallery





8.0 4TH UNESCO ENGINEERING WEEK AND 2ND AFRICA ENGINEERING CONFERENCE

The Chair was at the 4th UNESCO Engineering Week and 2nd Africa Engineering Conference from 25th to 29th September, 2017 in Kigali. She Chair was a speaker at plenary for Women, Engineering and Empowerment.

Photo Speaks



Photo 1: The Chair (WIE) Presenting at the Africa Engineering Conference 2017.

9.0 WIE COMMITTEE MEETING IN ITALY, ROME.

The WIE Committee meeting held on 26th November, 2017 during the World Engineering Forum and WFEO General Assembly held in Italy, Rome. The meeting had both male and female in attendance (This made the conversation interesting and that men were our willing allies).

The Committee had their draft declaration which was prepared and presented to the 2017 General Assembly approved with the 2018 Theme as "Women Engineers Making a Difference with Men as Allies: "Turning Words into Action" The Committee is to collaborate with other WFEO Committees and relevant Organizations to work on the following SDGs:

- SDG6 - Water and Sanitation
- SDG 7 – Sustainable Energy
- SDG 9 – Industry, Innovation and Infrastructure
- SDG 11 – Cities and SDG 13 – Climate change as plans towards achieving SDG 5 (Gender Equality)



Visit to Lebanon for the First Women in Engineering and Architecture Conference on invitation of Lebanon National Member of WFEO.



COMMITTEE ACTIVITIES IN 2018

1.0 INTERNATIONAL WOMEN'S DAY (2018) CELEBRATION

The Committee for Women in Engineering (WIE) joined the World Community in collaboration with UNESCO to celebrate the 2018 International Women's Day in Paris, France. The event was held on March 9, 2018, at UNESCO Headquarters in Paris with the commemoration of the tenth (10th) year anniversary of the Committee. Awards were presented to WFEO Past Presidents who contributed immensely to the creation and sustainability of the Committee, Past Chairs and Secretary of the Committee.

The programme which was well attended by members had panel discussion with very distinguished professionals on various issues & challenges affecting Women in Engineering and Engineering Communities. There was a call to intensify efforts towards increasing the number of the girl child participation in Engineering Education. The platform highlighted the various success stories on the roles played so far by women in engineering in helping the vulnerable, mainly, women and girls, and how more can be done to improve their livelihood in the troubled countries across the globe.

The programme had a large community of UNESCO led by the Director, Gender, Saniye Gulser Corat,

WFEO family led by President Marlene Kanga, and students from three schools within Paris.



From left: WFEO President, Marlene Kanga, UNESCO Director for Gender, Saniye Gulser Corat and Valerie Agberagba, Chair, WIE



WIE Chair, Valerie Agberagba Presenting award to WFEO Past President, Dato Lee Cheong



Celebrating WIE @ 10

2.0 COMMUNITY LED TOTAL SANITATION (CLTS)

The WIE Committee in their effortless work towards the achievement of their 2017 declaration as approved by WFEO General Assembly in Rome, commenced a project in January, 2018 on Sanitation and Hygiene (SDG 7) in Bwari Area Council as part of their activities for the year. The specific focus of the project is on Open Defecation (OD), using the Community Lead Total Sanitation (CLTS) approach which focuses on the community behavioral change rather than merely toilet construction. This process involves, pre-triggering, triggering and post-triggering of a community.

The first two stages of the project which is the Pre-triggering and triggering activities were successfully carried out. WASHCOM members of the community were intensively trained for the grass root follow up (post triggering) and sustainability of the Community Led Total Sanitation to ensure the community is declared Open Defecation Free (ODF).

The Committee with other stakeholders, the Federal Ministry of Water Resources WASH Team, FCT Primary Health Care WASH Department, Bwari Area Council Environmental Department and the community WASHCOM are still working to ensure Gaba Community is open defecation free by March, 2019.

PHOTO SPEAKS



Photo 1: A cross section of Trainees at the First WASHCOM training



Photo 2: A cross section of Trainees during the Hygiene and Sanitation Marketing training.

3.0 AFRICN WOMEN ENGINEERS FORUM

The Chair, Women in Engineering, Engr. Valerie Agberagba, hosted the First African Women Engineers Forum (AWEF) which held on 17th September, 2018 at Pride-Inn Paradise, Mombasa,

Kenya. The workshop marked the commencement of the 5th Africa Engineering Week and 3rd Africa Engineering Conference (AEW) which was hosted by the institution of Engineers (IEK) in Mombasa.

The programme theme was “African Women in Engineering: Innovation and Community Sustainability”. The programme had 107 Women Engineers in attendance from Eight (8) Countries and two internationals from Lebanon and Colombia



The keynote address was given by the WFEO President Dr. Marlene Kanga who was represented by Martin Manuhwa, WFEO Vice President & Chair CAC. The FAEO President, Engr. Julius Riungu, Yashin Brijmohan, WFEO Vice President & Chair ECB, Presidents of Engineering Institutions, UNESCO representative, and many male engineers were present at the ceremony.

Technical presentations were made by women engineers and other invited guest speakers on the

different sub-themes. After all deliberations, the following resolutions that will enhance Innovation and capacity development towards the participation of Women Engineers in the SDGs were taken.

1. Work with the UN goals that will impact on Gender Equality & Poverty reduction.
2. Enhance innovation and skills by building capacity through workshops and participation in community works through mentoring & capacity building.
3. Seek funds to encourage Research and Innovation.
4. Encourage continuous communication with all semi-skilled women in technology to improve their works by capacity development.
5. Continue the conversation on diversity & inclusion with all stakeholders.

The resolutions were included in the communique of the 3rd African Engineering Conference.

Photo 1: Chair, WIE, Giving the Opening Remarks Photo 2: A Cross Section of Guests at the opening ceremony

4.0 SECONDARY SCHOOL STUDENTS TO BE WASH AMBASSADORS/ CONVERSATION WITH THE GIRL GILD ON ENGINEERING

The WIE committee on October 6th, 2018 organized a Sanitation and Hygiene Programme for Secondary Schools in Bwari Area Council as an encouragement

to the students to become Water, Sanitation and Hygiene (WASH) Ambassadors of their community. The event which held at the Auditorium of Joint Admission and Matriculation Board (JAMB) had about 123 students from 9 different schools in attendance.

The opening remarks was given by the Special Guest of Honour, Chairman, Bwari Area Council, Honorable (Dr.) Musa Dikko, who expressed his excitement about the Committee's efforts to promote sanitation and hygiene in Bwari Area Council and encouraged the Girl Child to become better leaders of tomorrow. He pledged working with the Committee to achieve its goals and called for more collaboration with Women Engineers to make Bwari Area Council better. The programme had representatives from Joint Admission and Matriculation Board (JAMB), Water and Sanitation department of the Federal Ministry of Water Resources, Chief Head of Gaba Community and Association of Professional Women Engineers of Nigeria (APWEN) in attendance.

Presentations were made by members of the Federal Ministry of Water Resources and Women Engineers on Hygiene. Hands on activities were also done to introduce the students to some simple engineering practicals and a Hygiene club was formed in the various schools present.

On the issue of the Girl- Child taking up the sciences with a view of pursuing a career in engineering, the

students were inspired with encouraging talks to take up the various career opportunities in engineering. A highlight of the programme was the award of prizes to students that performed excellently in the various activities.

PHOTO SPEAKS



Students on Hands-on activity



Students Setting up the Helmets



First Student to put the Helmet altogether with design receive Award



Students with the Chief of Gaba and WIE Members



Winners of the Competition in a group photograph with the Bwari Area Council Chairman and WIE members.

5.0 PARTICIPATION IN GLOBAL ENGINEERING CONGRESS (GEC2018)

The Global Engineering Congress (GEC2018) was hosted by the Institution of Civil Engineers (ICE) London from 20th -26th October, 2018. The Chair, Women in Engineering, Engr. Valerie Agberagba, chaired a session on Strategic Approaches to Improving Diversity and also made a presentation on behalf of the Committee in another session on Water and Sanitation. The Percent of Women Speakers at the programme was highly commendable and WIE hopes to build on it in subsequent conferences. The Women in Engineering Committee meeting held on 21st October, 2018 during the Global Engineering

Congress (GEC2018) and the Committee's declaration as presented in Rome, Italy was reviewed with discussions on how to improve on activities that are geared towards the achievement of the Sustainable Development Goals(SDGs) selected for the Committee. Two regional programmes (Middle East, Lebanon & Europe, Italy) and the African Women Summit are expected to be held in 2019 amongst other activities.



2019 ACTIVITIES

The chair of the committee participated in the information Meeting with UNESCO Permanent Delegations on Capacity Building for Basic Sciences and Engineering.





2nd African Women Engineers Forum.

The Second African Women Engineers Forum (AWEF) organized by the Committee for Women in Engineering (WIE) of the Federation of African Engineering Organizations (FAEO) was held on 20th September 2019 at AVANI Victoria Falls Resort, Livingstone, Zambia. The forum marked the conclusion of the 6th Africa Engineering Week and 4rd Africa Engineering Conference (AEW) hosted by the Engineering Institution of Zambia (EIZ) in Zambia. The theme of the programme was "Leadership and Empowerment: SHIFT UP! OWN THE FUTURE". The

programme had Women and male Engineers in attendance from different African Countries and one international from China.

The Chair, WIE appreciated African Women leaders in PEIs amongst which were

- Engr. Carlien Bou-Chedid from Chana
- Engr. Farai Mavhiya from Zimbabwe
- Engr. Linda Moseki from Botswana

The Chair, CWIE presented awards to the Institute of Engineers, Kenya, IEK and Engineers Institute, Zambia, EIZ, for hosting the first and second African Women Engineers Forum, respectively

The technical presentations were made by women engineers and some invited guest speakers on the following sub-themes;

- I. Innovation
- II. Diversity and Inclusion: Building Allies
- III. Seize opportunities: Think smart
 - Self – employment
 - Entrepreneurship
 - UN, WE & SDGs
- IV Celebrate Women

The resolutions were included in the communique of the African Engineering Week



Dear Valerie,

I am indeed very pleased and proud of your achievements as the Chair, Women in Engineering Committee of WFEO. You had always met and even exceeded my expectations on any assignment given to you right from the time I was NSE President and you were one of the Vice Presidents.

You have been able to endear and attract a lot of people into to programme of WiE and your leadership has been all-encompassing, as I have personally witnessed when I attended many of your meetings at WFEO and FAEO levels. The Africa WiE Forum you initiated in Mombasa 2018 is one of the programmes that has attracted a lot of interest and participation by UNESCO as well as many engineering Institutions in Africa. From the discussions I had with many women engineers from other countries around the globe, I understand that they have high regard for your leadership and engineering ability and they are also proud of you.

You have made Nigeria proud! You have made Africa proud!

Wishing you more success in your future endeavours.

**Engr. Mustafa B. Shehu, FNSE
Past President, Federation of African Engineering Organisations
Past President, Nigerian Society of Engineers.**