Special Session - SS I:

“Green Energy Systems and Innovations for Sustainable Science, Engineering & Technology (SET) Infrastructure development:”

Chair: Dr Mengesha Mamo, AAIT

Time: 14:00-16:00

SS-I Keynote 1: Dr Tobias Bischof-Niemz, CSIR, (Time: 14:00 – 14:30)

Title: Green Energy Technologies: Challenges & Opportunities for Africa.

Abstract:

Massive cost reductions in renewables such as wind and solar over the last few years, combined with excellent wind and solar resources across the African continent, made renewables cost competitive to conventional new-build options today. Renewables however have significant implications on the architecture of the energy system as we know it. Distributed generation lets energy consumers become energy “prosumers”, with generation assets at the very end of the electrical grid; telecommunication and "big data" companies show increasing interest in the energy space; new technologies arise to facilitate a large penetration of intermittent renewables in the system. In this presentation the underlying paradigms on which today's energy system is built will be highlighted and how they might have to change in order to facilitate a renewables-based energy future. One such paradigm is the notion of "base load" requires "base supply" - which is neither technically nor economically the case. The Keynote will highlight the opportunities and challenges for the African continent to leapfrog from energy-system design centered around large-scale power generation towards a more green energy based distributed generation of power.
SS-I Keynote 2: Mr Yongbin Im, Samsung  (Time: 14:30-15:00)

Title: Development of Comfort Control method for Green Buildings: Energy Saving Performance:

Abstract:
To preserve our environment for the future generation it is necessary to go green. The steady introduction of stricter regulations on building energy efficiency is also making it a requirement of make greener buildings. For these reasons, SAMSUNG Electronics has created an energy saving and comfort control solution for green building. This new technology uses a combination of demand control, energy algorithm and renewable energy for heating, ventilation and air conditioning (HVAC), under-floor heating (UFH), light emitting diode (LED) lighting which results in a saving effect of up to 35.6%. The cost saving and the increase of productivity of the occupants brought by an efficient energy management and added comfort respectively, offset any additional cost for the implementation of the technology.

SS-I Panel Session: Green Energy and Technologies for Africa.

Panelists: Prof BG Lee, Mr. Mihret A, EEPCO, Dr T Bischof-Niemez, Youngbin Im,

Panel Questions to be addressed


ii. Is the techno-economics of Green-energy systems sustainable?

iii. Bridging infrastructural and economic development with green innovation for environmental protection and sustainability?

iv. What are the best practices in Green Technologies, which fulfil the equation: Sustainable Economy = SET Development + Ecology.
Special Session - SS II:

Broadband Innovation and Dynamic Spectrum Sharing: Accelerating Broadband Connectivity in Africa.

Time: 16:00 - 18:00

Chairs: Prof Riku Jäntti, Aalto, Dr Ntsibane Ntlatlapa, CSIR.

Setting the Scene: L. Mfupe & F. Mekuria, “Future Wireless Communications Enabled by White Space Spectrum Databases.”

Abstract:

The ever increasing demand for bandwidth and wireless broadband connectivity in particularly emerging markets is making the need for dynamic spectrum sharing inevitable. Telecom regulators and standards organizations are working hard on how to enable such a paradigm shift. While at the same time entice the eco-system of mobile operators, infrastructure suppliers and device manufacturers to buy-in to the concept and invest in the enabling technologies such as white space spectrum databases and white space communications. The presentation will discuss possible technology scenarios and enabling spectrum regulatory regimes to enable co-existence and new dynamic spectrum business models.

Panelists: Prof J. Zander, Prof. G. Fettweiss, Prof. S. Maharaj, Ericsson, EthioTelecom, Huawei…

Panel Questions to be answered:

1- The submarine cables reaching African coastal regions are carrying several hundreds of Gigabytes. What technologies are needed to get them in land?
2- Is broadband for all a techno-economically achievable goal in Africa?
3- Who should lead the broadband & internet of things eco-system for Africa?
4- What is the potential of spectrum sharing based wireless technologies such as TVWS, cognitive radio and dynamic spectrum in solving the rural broadband demand in Africa?
5- Is the time and technology development ready for flexible and dynamic spectrum allocation and sharing between heterogeneous networks.
6- Is co-existence possible between 5G and future wireless dynamic spectrum broadband networks?
7- What new regulatory policy frameworks are needed to enable dynamic spectrum access and sharing for accelerated broadband connectivity?
Special Session (SS-III) @ IEEE Africon2015

14th September 2015, 10:00-12:00

Special Session - SS III:

Science, Engineering & Technology (SET) Innovation and Entrepreneurship:
Creating SET Based Employments in Africa!

Time: 10:00-12:00 AM

Chair: Dr K. Woldemariam, IBM Research Africa.

Panelists: Dr. S. Assefa, Prof. S. Sinha, Dr. R. Chikwamba, Prof. M. Muchie, Mr. T. Elumelu, Mr. C. Stasopoulos, Dr F. Mekuria.

Panel Questions to be addressed:

i. Which SET & ICT sectors are well suited for an innovative and entrepreneurial based job creation?

ii. Can we develop entrepreneurial skills of our graduating students to accelerate SET Innovation and knowledge based employment creation while at the same time solving the Grand challenges of Africa (Agriculture, Energy, Health, Transport,..)?

iii. Do we need a Marshal plan for Africa, similar to: (http://www.fin24.com/Economy/Marshall-Plan-for-Africas-employment-challenge-20140105)?

iv. What interventions & enabling policies are needed by government, private and public sectors in society?

v. What does the IEEE as the largest engineering professional association contribute to this endeavour?