

## **Research Cluster 5**

### **Smart Grid Application Research (SGAR)**

**Cluster leader:** Prof Dr Musse Mohamud Ahmed

**Description:** The main goal of the Smart Grid Application Research (SGAR) Cluster is to lead and pave the way to introduce timely and high quality research activities as well as innovations in four areas of electrical and electronics engineering, which are: electrical power engineering, communication engineering, electronics engineering and computer engineering.

These engineering research areas include (but not limited to):

- Smart Grid application to Generation, Transmission and Distribution,
- Smart Grid Integration to Power and Energy
- Smart Grid Integration to RE
- Self-healing technologies
- IEDs technologies for Electronics – Micro/Nano Electronics
- Communication networks: 2-Way Communication
- Wireless sensor networks
- Middleware
- Cellular networks
- Big data analytics, IoT, Cloud computing, Cybersecurity & Data Integration

The strategy for the SGAR is based on excelling in its main areas of Smart Grid based Electrical Power and Energy, Communication Engineering, Computer Engineering and Electronics Engineering. In the future the SGAR will carry out research and development activities through the following research groups/clusters:

- Smart Grid Based Electrical Power Engineering and Energy Research
- Smart Grid Based Communication Engineering Research
- Smart Grid Based Computer Engineering Research
- Smart Grid Based Electronics Engineering Research

**Objectives:**

- To Carry out strategic studies on Smart Grid Applications and Technologies for the key areas of Electrical and Electronics Engineering, innovative and integrate researches on electrical power and energy, communication engineering, electronics engineering and computer engineering;
- To Conduct innovative postgraduate courses on Smart Grid Application with emphasis on innovative Power and Energy, through Smart Grid technologies, Advanced Communication Engineering Courses, Advanced Electronics Engineering Courses and Advanced Computer Engineering Courses;
- To Set up an Industrial Smart Grid Technologies Lab
- To Conduct professional courses on the same areas of focus and initiate lifelong learning on smart grid application programs; and
- To Develop strong relationships with other researchers from the other similar departments, universities and from the industry.

**Members:**

1. DR. NORHUZAIMIN JULAI
2. ASSOC. PROF. IR. DR. AL-KHALID HJI OTHMAN
3. ASSOC. PROF. DR HUSHAIRI ZEN
4. PROF. DR MUSSE MOHAMUD AHMED
5. PROF. DR. PAUL RATNAMAHILAN HOOLE
6. ASSOC. PROF. DR. AHMED M. A. HAIDAR
7. ASSOC. PROF. DR. MOHAMED ABDULMONEIM  
SHAABAN
8. ASSOC. PROF. DR. THELAHA HJ MASRI
9. ASSOC. PROF. DR. MOHD SAUFEE
10. DR SHAFRIDA SAHRANI
11. DR. NORDIANA RAJAE
12. DR HIKMA SHABANI SHABAN HASSAN
13. DR ABDUL RAHMAN KRAM
14. DR TENGKU MOHD AFENDI ZULCAFFLE
15. EN HAZMI HIJAZI ABDUL HALIM
16. EN MOHD RIDHUAN MOHD SHARIP
17. DR. SITI KUDNIE SAHARI
18. DR. DAVID BON BOON LIANG
19. DR. YONIS M. YONIS BUSWIG
20. DR. LAKSHMANAN A/L GURUSAMY
21. DR. DAYANG AZRA AWANG MAT
22. DR. KISMET HONG PING
23. DR. TAY KAI MENG
24. PN. NURUL 'IZZATI HASHIM
25. EN MOHD HAFIEZ IZZWAN SAAD
26. EN HAZRUL MOHAMED BASRI
27. DR. YANUAR ZULARDIANSYAH ARIEF
28. PN NAZREEN JUNAIDI
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30. EN AZFAR SATARI ABDULLAH
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