

New Zealand Power Systems Collaborative (NZPSC) in collaboration with MBIE's SSIF AETP fund on Future Architecture of the Network (FAN) and Victoria University of Wellington

cordially invites you to join us (both online and in-person) for a showcase of power systems related projects and an industry lunch to introduce our SSIF project titled 'Future Architecture of the Network'.

When: 11 December 2020

Venue: Room 103, Alan MacDiarmid building, Kelburn Campus, Victoria University of Wellington.

Time: 1000 – 1600 hrs

RSVP: <https://forms.gle/QVktUhzf7Vgdx8eA7>

Zoom Link: <https://vuw.zoom.us/j/94704936535>

Programme:

1000 Welcome **AProf. Ramesh Rayudu** and **Dr. Tipene Merritt**

1010 **AProf. Nirmal Nair** - NZPSC

1020 **Prof. Neville Watson** - NZ power sector research

1030 VUW Research

- **Dan Burmester** – Transitioning towards DC households
- **Anu Choudhary**- Greenhouse Gas emissions from Geothermal Powerplants in New Zealand.
- **Rohit Duggal** - Extraction of Geothermal Energy from Hydrocarbon Fields: Highlights & Prospects
- **Fraser McConnell** -Mātauranga Māori in Power Engineering
- **Hashim Khamis** - Power Transfer on Decentralized PV-Battery based Mini-grid in Tanzania's Rural Areas

1055 Q&A session and Break

1110 University of Auckland Research

- **Duncan Maina** - Role of Windfarms in Microgrid Based Restoration
- **Samad Shirzadi** - Islanded Distribution Grid Planning and Operation to Enhance Resilience during Natural Hazards
- **Sainbold Saranchimeg** - Integration analysis of utility scale PV plant into weak grids
- **Safa Al-Sachit** - Transmission Line Protection Algorithm of Negative Sequence Voltage Based Differential Protection
- **Ebad Rehman** - Asset Management of Underground Cables Factoring Resilience

- **Leonie Bule** - Hybrid State Estimation for Active Distribution Network using data analytics
- **Abhinav Chopra** - Transition architectures for future electricity Distribution Management Systems (DMS)
- **Harsh S Suresh** - Fog Computing applications to develop Grid Friendly devices
- **Lakshita Lakshita** - Enhancing the Resilience of Power System to High Impact Weather (HIW) Events
- **Rizki Rahayani** - Hybrid Communication Network Planning for Indonesian Smart Grid System
- **Xin Liu** - D-PMU algorithm, implementation, and applications

1145 Q&A session and Break

1200 **Prof. Neville Watson** – Introduction to FAN (MBIE's SSIF Fund)

1215 Lunch and Discussion

1345 University of Canterbury Research

- **Prof. Neville Watson**
 - Tensor modelling of Distribution Systems (PhD student: Muhammad Ramzan)
 - Data analysis of Smart-meter data (PhD student: Ali Othman)
 - Type 4 Wind-turbines connected to weak AC systems. Permanent Magnet Synchronous Generators and full-power conversion. (PhD student: Hailong Wang)
- **Dr. Andrew Laphorn**
 - Core Losses in Partial Core Transformers (PhD student: Andrew Berry)
 - Coordinated Voltage Control Strategy in a Low Voltage Distribution Network (PhD student: Parash Acharya)
 - Electrical Machines work
- **AProf. Alan Wood**
 - MV line fault location and identification (PhD student: Farzeen Adi Rajah)
 - Sensing and instrumentation for Power systems (based on work done by PhD Student Ben Mitchell and Master student: Michael Franks)
 - Modular multilevel EV drive (ECE)
 - Impact of EV on networks and hosting capability analysis (based on work done by PhD Student Euan McGill, and EPECentre)

1415 Q&A session and break

1430 Auckland University of Technology (AUT) Research

- **Dr Kosala Gunawardane** - Supercapacitor Assisted Converters for DC Microgrids
- **Peter Jean-Paul** - A Generalised Model for Assessing the Large-scale Deployment of Residential Energy Management Systems
- **Syed M. Arif** - Eco-charging station for E-Bus
- **Sadegh Khaleghi** - Numerical analysis for a new hybrid wave-wind model of Oscillating Water Column Wave Energy Converter
- **Attique Ur Rehman** - Load Disaggregation; Towards Energy Efficient Systems

1455 Q&A session and break

1510 University of Waikato Research

- **A/Prof Nihal Kularatna** - DC powered houses

- **Dr Dilini Jayananda** - Supercapacitor assisted LED technique for DC powered buildings

1520 Q&A session and closing remarks