

# Next Generation Network (NGN) Webinars



## Synchronized Waveform Measurement and Applications in Power Systems

### Summary

Synchronized power system measurements, particularly synchronized phasor measurements, have received a lot of attention recently for wide area situational awareness and various other functions. Phasors, however, effectively filter out a lot of information that may be useful for other applications, particularly in the presence of power system disturbances and heavy deployment of inverter-based resources (IBR). Waveforms, depending on sampling rate/resolution, provide a more granular and authentic representation of voltage and current in power systems. With the recent advancements in grid sensor technologies, synchro-waveforms open the door for a more advanced power system monitoring, situational awareness, and system performance assessment. Areas of particular interest are asset monitoring, incipient fault detection/location, protection, as well as control. Faster synchro-waveforms also can play a critical role in monitoring inverter-based resources (IBR), their dynamics and their responses to system disturbances.

In this presentation, Dr. Rahmatian will give an overview of advanced voltage and current sensors providing synchro-waveforms and their potential application, with focus on grid resiliency. The presentation will be focused on one or two applications, i.e., accurate fault location and high-frequency harmonics detection near IBRs.

### Speaker

Dr. Rahmatian is a co-founder and president of NuGrid Power Corp. He has contributed to several techniques for power system measurement and automation over the past 30 years. He is a Professional Engineer and a Fellow of the IEEE for contribution to optical voltage and current sensors. He is a past Chair of the IEEE Power & Energy Society's (PES) Technical Council, active at PES Power System Relaying and Control as well as Power System Instrumentation and Measurements committees. He is also active in CIGRE [Distinguished Member], IEC, and NASPI [North American Synchrophasor Initiative]. His present technical focus is on wideband optical sensors, synchronized measurement systems, digital substations, integration challenges of distributed energy resources, high-speed measurement of voltage and current, traveling-wave-based fault location, and grid resiliency efforts. Farnoosh has over 100 technical papers and 12 patents to his credit.

### Links & Information

Tuesday, September 12, 2023  
12 pm CST | 1 pm ET

Duration: 1 hour

[Register Here](#)



### Farnoosh Rahmatian

**Co-Founder and President**  
*NuGrid Power Corp*

**Chair**  
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Society's (PES) Technical  
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