

# Electrified Vehicle Technologies Enhancements and Advancements Workshop

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**Presented By**

**Dates:** June 21-25, 2021



**Price:** \$1,995.00

([AVTGNW](#) members receive a 15% discount)

**Location:** Portland Community College  
12000 SW 49<sup>th</sup> Avenue, Portland OR 97219

**Hosted By**



**For Further course details and register:**

[www.futuretechauto.com/store/p87/2020summerworkshop](http://www.futuretechauto.com/store/p87/2020summerworkshop)

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**For questions please contact the FutureTech  
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## About The Instructor – Dr. Mark Quarto



Dr. Mark Quarto is a Vehicle Electrification expert with over 30 years in the automotive industry. In addition to being an instructor and special consultant to FutureTech Auto, Dr. Quarto is the founder of Quarto Technical Services (QTS), which provides engineering services, diagnostic equipment, training, technical support, and consulting in Vehicle Electrification to all facets of the automotive industry.

Responsibilities include design and development of: diagnostic test equipment & software, management and technical education, curriculum and training programs, and technology innovations with solutions focused on Hybrid and Electric Vehicle Propulsion and Energy Management Systems. These unique diagnostic techniques and applications are effectively used globally supporting automotive aftermarket businesses.



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## OVERVIEW:

The Battery Electric Vehicle (BEV) space has made more major advancements in technologies within the last 5 years than any other technology. Whether the advancements are in High Voltage Lithium Battery Controls, Electronic Chassis Energy Leak Detection, the addition of integrated ADAS systems, Diagnostics and use of Electric A/C systems or, the breakneck speed changes of Wireless High Voltage Battery Charging Systems – automotive professionals need to understand how these advancements impact diagnostics, analysis and repair. Come and join us in learning how to change complicated technologies into systems of simplicity. What you will learn in this workshop:

- New High Voltage Isolation Fault Detection Systems
- Diagnostic Techniques for Electric Air Conditioning Compressor Systems Using Oscilloscope and DVOM
- New High Voltage Bus Discharge Systems: The Systems are Much More Integrated
- New CAN High Voltage Interlock Circuit Controls and Diagnostics
- Introduction to 6 and 9 Phase Propulsion Systems: MD & HD Vehicles Go Full Electric & Hybrid – Is LD Next?
- Hub Motor Technology: Goodbye to Driveshafts! and Hello More Cabin Space!
- Tesla Model 3 Electric Propulsion: The Convergence of Induction and Permanent Magnet Machines with a “twist”
- Lithium Battery Cell and Pack Advancements: More range in the same package, Wire bonding, and more
- Laser and Ultrasonic Sensing for ADAS: It’s all about the marriage of Hardware and Software
- The Latest on Wireless Charging Systems: A perfect match for Autonomous Systems
- Update on How Electric Propulsion is moving in to **All** Transportation sectors