

ECE 590 I POWER & ENERGY SYSTEMS SEMINAR

Monday, October 25, 2021, 3:00 – 3:50 p.m.

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Power Electronics and Power Systems State of the Industry for Megawatt Level Commercial Vehicle Charging

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ABSTRACT

Several DC charging coupler standards are being used in light duty vehicles today up to 500A as well as on medium and heavy-duty electric vehicles. Shorter turn-around time required for some commercial vehicles in turn requires higher current charging couplers. The CharIN consortium members have created a coupler specification that will be adopted by the IEC63379 and upcoming SAE coupler standards committees as a published standard, up to 1500v/3000A continuous operation, inserted by hand up to 10000 cycle life. This talk will address power electronics (medium and low voltage grid connected) state of the industry solutions and near-term path to commercial solutions for on-road vehicles, aircraft/eVtol, marine, mining, construction, and agriculture applications.

BIO

Mr. Bohn is with the Center for Transportation Research at Argonne National Laboratory, which is near Chicago IL. He is a principal electrical engineer in the EV-Smart Grid Interoperability Center, identifying and validating interoperability issues related to PEV charging systems. He actively serves on SAE, IEEE, and EV charging standards committees, including safety standards. His current area of focus is on high power (megawatt level) multi-port charging systems with integrated storage and active load management for DC distribution topologies. He leads US National working group for Weights and Measures related to commercial dispensing of electricity as a fuel. Mr. Bohn received his BS and MS degree in electrical engineering at the University of Wisconsin- Madison. He holds an adjunct faculty position at University of Wisconsin-Madison where he has developed and delivered EV charging safety related education and training materials.