

Transportation Electronics Meeting Minutes

6 June 2021

In Attendance

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|---------------------------|--|
| Fernando Salcedo (FELLOW) | fernando.salcedo@ee.doe.gov |
| Jim Spangler | jim.spangler@sbcglobal.net |
| Jems Lemke | Jens.Lemke@wartsila.com |
| Brij Singh | SinghBrijN@johndeere.com |
| Davide Giacomini | Davide.Giacomini@infineon.com |
| John Horzepa | john@psma.com |

Next Meeting: 9 July @ 11 Eastern? Verify time

Summary of suggestions/possible topics from conference call for 2022 APEC

Suggestions from Brij (John Deere)

- Dynamic wireless charging: Effects on Infrastructure, Testing being done in Chicago (Aspire company name?)

- New switching devices

- Soft switching converters with 99% efficiency

- Norwegian Infrastructure presentation?

- Electric Machine systems

- Integration of power electronics with electric machine

- No slots, new materials, low inductance

- High switching rates

- Thermal improvements

- Smaller, Lighter, recycle as part of product design

ORNL is also working of infrastructure.

Suggestions from Jems

- Electric multi-level design tool optimization

 - Working with Fraunhofer

 - For new designs

 - New rectifier concepts

 - Mosfets for replacing diodes

- Goal – Higher efficiency

Suggestions from Fernando (DOE)

- Integration of gate drives and power devices

- Higher power density

- 175°C – 200°C operation

- Electrification and extreme fast charging

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Possible Themes

Transportation Electronics: Cheaper, Lighter Smaller