

PSMA Capacitor Committee Minutes/Agenda APEC 2021

Attendees February 3, 2021

Fred Weber – Future Technology Worldwide

Pierre Lohrber – Wurth

Wilmer Companioni – KEMET

Ada Cheng – AdaClock

Beth Massey – TEA - The Energy Authority

Caleb Breazeale - Independent

Ed Herbert – PSMA – Magnetics Workshop

Ed Lobo – CDE

Eduardo Drehmer – TDK

Eric Schneider - Independent

Frank Puhane – Wurth

Hengzhao Yang – New Mexico Institute of Mining and Technology / IEEE

Joe Horzepa – PSMA

John Horzepa - PSMA

Kevin O'Connor – Caporus Technologies

Mark Scott – Miami U / IEEE

Matt Wilkowski – Magnetics Committee – Workshop

Mike Cannon - TDK

Mike Dombrow – Faratronic

Mike Dombrow Jr – Faratronic

Mike McGeachie – FAE Cornell Dublier

Nick Visic – AISHI Capacitors

Norm Schutzkus – Richardson Electronics

Peter Victor - Fedco

Phil Whitmire – CDE

Raj Pulugurtha – Florida International University

Rene Kalbitz -Wurth

Rob Haywood – Gore

Scott Franco – CDE

Stephan Menzel - Capxon

Thomas Gietzol – Collins

Victor Boyadzhyan – AiTech Systems

William Mak – KEMET

Next Meeting Wednesday, April 7, 2021
at 11:00 CDT

Committee Webpage

The PSMA Webpage have been completely updated!!!

We can always use more!!! If you have a training presentation or file please upload it to the following DropBox and let me know:

<https://www.dropbox.com/request/Nq4EYFznmfUKY7Qdiicu>

New logo NEEDED for Capacitor Committee + Logo for Energy Storage

Vehicular (Automotive) Electronics Workshop

PSMA is organizing a Workshop that focusses on the electrification Vehicles, including powertrain and autonomous products. Can use the following capacitor Webinar in the workshop.

Fast Charging – Ada Cheng, Gerald Deboy – Infineon
PCB Layout Considerations – Victor Boyadzhyan
Wireless Charging – Pierre Lohrber – Joe Horzepa
DOD electrification trends – Chris Waling
Israeli Capacitor company supplier for Wireless Charging – Norm Schutzkus
Off road Autonomous vehicles – John Deere, CAT
Latest On-Board Charger
Power Distribution (24V to 48V)
Safety –
Reliability Committee – Ada Cheng

Webinars

There is a desire and demand to restart the Fundamentals Webinars from the beginning with a fresh approach. Need volunteers, preferably from those that were NOT part of the first series.

PSMA Capacitor Committee Offers Capacitor Fundamentals for Automotive Applications

2 Webinars / Low power and control circuit applications
/ Power Stage – High Power

Picking Capacitors for your application is always a challenge. Deciding on the proper component given all of the various parameters associated with your design and the numerous capacitor technologies results in choosing a part that best balances the pros and cons of each component and how your application will react to the use of that specific part. Add in the need to consider an

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automotive application with the temperature extremes, need for EMI suppression, not to mention shock and vibration and you have a true challenge for only the most experienced engineers.

PSMA Capacitor Committee will be offering two Educational Webinars presented by a design leader in the automotive industry explaining a best practices approach to choosing the capacitor that will be best for your application. The Webinars will be broken into different power levels.

Best Practices for Choosing Capacitors for Automotive Low-Power and Control Circuit Applications

Best Practices for Choosing Capacitors for Automotive High-Power Applications (power stage in Chargers, Converters, & Inverters)

Specific capacitor locations will be identified on schematics, and their requirements will be reviewed and all of the various critical parameters will be identified. Various suppliers' products will be analyzed using their datasheets as possible candidates. Will we be able to find the best solution? We will have to see...

Eric Schneider, Independent Engineer with over 35 years of engineering experience.

Roadmap Webinar 2021 Ideas – Reviewing Options

**Mark Scott – Conditional Monitoring for Capacitors
Abstract Submitted – March 18, 2021**

FUTURE ROADMAP Webinar Ideas

NEED IDEAS!!!

New technologies for Broadband application Capacitor support
Tantalums

New in Ultra Caps – Takata, more than ELC – Hybrid package?

Application Driven – how different technologies behave – Filtering, Inverters (DC Link), Power Supplies, compare and contrast technologies and certain parameters for each technology.

Also include Environmental technology discussion (i.e. Heat, Vibe, EMI).

Würth – Power Supply - DC Link / MLCC DC bias

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EPCOS – Filtering X/Y Caps, Rob Haywood – Gore’s new dielectrics, Wurth - Polymers with higher capabilities

Cap optimization for EMC & EMI, BOM, layout, etc. - Raj Raj and Victor to supply an abstract of his presentation

Possible Eaton Hybrid Supercap – need contact

<https://www.eaton.com/us/en-us/products/electronic-components/faq/what-is-a-hybrid-supercapacitor.html>

Workshop Mission Statement –

The PSMA Capacitor Committee Annual Workshop aligned with APEC has a mission to educate the attendees on capacitor trends, technologies, and innovations. Wherever and whenever applications need energy, Capacitors are at the spotlight, and as energy moves the world it is incumbent for everyone to keep their finger on the pulse of capacitor issues. PSMA’s Capacitor Committee is committed to present the best material available to meet the industry’s needs.

Workshop 2021 – Overview – Tuesday June 8, 2021 in the Convention Center

2021 Theme

Design Techniques for the 21st Century – Beyond the Scenes make sure you use the correct Capacitor.

March 1 deadline for submission of slides for the Workshop.

Possible sponsorships of “Dinner”, “Lunch”, or “Networking Session”. Possibly give a few registrations, and a special presentation slot for promotional opportunity for the sponsorship.

Planning to offer 3 scholarships (fee waivers) for Grad students – NEED SPONSOR

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Workshop – Continuing Education

Mark Scott has registered both the Capacitor Workshop and the Magnetics Workshop for Continuing Education Certificates. Attendees wanting credit will be charged \$5.00 to receive their certificate.

Here is the link to the information:

<https://www.ieee.org/education/continuing-education.html>

Here is the link for the application:

http://fm34.triple8.net/fmi/iwp/cgi?-db=IEEEapps_v117&-loadframes

2 - 4 Poster Session for more Academic Input.

To be added to demo area 2021!

NEED TO PLAN 2021 WITH IN-PERSON & VIRTUAL FORMATS IN PARALLEL! Also planning for a Hybrid solution allowing both in-person and virtual presenters (so long as they can be available for Q&A. Also, allowing for in-person and virtual attendees, both paying the same charge.

Industry Session 2021 –

Abstract for Industry Session 2021

The PSMA Capacitor Committee proposes an industry session for APEC 2021 focused on capacitor solutions for emerging technologies. Wide bandgap, millimeter wave, and embedded componentry are all innovative technologies that will make an impact on design and engineering of future devices. The advances in silicon precipitate an equivalent seismic shift in passive componentry and specifically capacitors. Once afterthought components, as technologies operate closer and closer to the cutting edge all areas of circuit design must be well-optimized, including capacitor performance and selection. Even the simulation of systems must consider effects that were previously considered to be trivial.

Important Dates

Final Titles and Presenters	2/5/2021
Working Session	2/19/2021
First Draft	3/5/2021
Final Draft	3/12/2021
<u>APEC Upload Date</u>	3/26/2021
Presentation with Voice Recording	4/15/2021
Presentation Date	6/10/2021 8:30AM

Energy Storage Industry Session Will Be Separate (8 Sessions)

Add the PSMA logo to all slides, on bottom left of their slides. The presenter can also add their corporate logo to the upper right. (Discreet Branding)

2nd slide should be bio of the presenter.

Energy Storage & Their Applications IS NOW A STAND ALONE COMMITTEE

Members

Eric Schneider / Co-Chair

Ed Herbert / Co-Chair

Hengzhao Yang

Peter Victor

Victor Boyadzhyan

Patrick La-Fevre ???

Rene Kalbitz

Ada Cheng

Need to get someone from Energy Harvesting – Patrick La-Fevre

Nihal??

Others?

GET MORE COMMITTEE PARTICIPANTS