

## **PSMA Capacitor Committee Minutes/Agenda APEC 2021**

### **Attendees January 6, 2021**

**Fred Weber – Future Technology Worldwide**

**Pierre Lohrber – Würth**

Wilmer Companioni – KEMET

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 – Würth

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

Nick Visic – AISHI Capacitors

Norm Schutzkus – Richardson Electronics

Phil Whitmire – CDE

Raj Pulugurtha – Florida International University

Rene Kalbitz -Würth

Rob Haywood – Gore

Scott Franco – CDE

Thomas Gietzol – Collins

**Victor Boyadzhyan – AiTech Systems**

William Mak – KEMET

**Next Meeting Wednesday, February 3,  
2021 at 11:00 CST**

### **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**

## **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 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.**

## **PSMA Capacitor Committee Minutes/Agenda APEC 2021**

### **Roadmap Webinar 2021 Ideas – Reviewing Options**

**Mark Scott – Conditional Monitoring for Capacitors  
Abstract Submitted – February 4, 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

**EPCOS – Filtering X/Y Caps, Rob Haywood – Gore’s new dielectrics**, Würth - 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 21<sup>st</sup> 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.**

**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](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.**

## **PSMA Capacitor Committee Minutes/Agenda APEC 2021**

### **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.

**November 23, 2020 Deadline for Proposals**

**January 11, 2021: Notification of acceptance and timing**

**March 26, 2021: Presentations Due for inclusion on the thumb drive**

## **Energy Storage Industry Session Will Be Separate (7 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)

2<sup>nd</sup> slide should be bio of the presenter.

## **Energy Storage & Their Applications Subset of Capacitor Committee**

### **Members**

**Eric Schneider / Co-Chair**

**Ed Herbert / Co-Chair**

**Hengzhao Yang**

**Peter Victor**

**Victor Boyadzhyan**

**Patrick La-Fevre ???**

**Rene Kalbitz**

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

**Nihal??**

**Others?**

## **GET MORE COMMITTEE PARTICIPANTS**