



**Welcome to the 2020 PSMA Capacitor Committee's  
Virtual Workshop**

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# 2020 PSMA Capacitor Committee's Virtual Workshop

Session 2 April 28

<b><u>Capacitor Technology for Future Applications</u></b>	<b>2hours</b>
<b>Committee &amp; Workshop Intro</b>	<b>Fred Weber/ Pierre Lohrber</b>
<b>Solid Polymer and Hybrid Aluminum Electrolytic Technologies</b>	<b>Stephan Menzel Sr. Key Account Manager CapXon Europe</b>
<b>MLCCs for harsh environments</b>	<b>Wilmer Campanioni Sr. Manager Technical Marketing KEMET Electronics Corporation</b>
<b>Supercap Backup in Wireless Power Transfer applications</b>	<b>Frank Puhane Leader Technical Engineering, Capacitors &amp; Resistors Würth Elektronik</b>
<b>Innovative power capacitor technologies for wide band-gap semiconductors</b>	<b>Manuel Gomez Marketing Film Capacitors &amp; Power Quality Solutions TDK Electronics</b>



## Fred Weber

### President

Future Technology Worldwide, LLC

#### Background:

- 37 years of work experience in electronics industry
- Background in Manufacturing, Design, Program Management, and Sales Engineering
- FTWLLC, LLC formed in 2001 a Sales Representative firm focused on Power Electronics and Services in the Great Lakes States.



1-810-695-4677



Fred.Weber@FTWLLC.net



www.FTWLLC.net

## PSMA Capacitor Committee

**The Capacitor committee meets monthly by conference call for 1 hour.**

**We use that time to plan Webinars, APEC Workshops and the APEC Capacitor Industry Sessions.**

**The Capacitor page of the PSMA Website is loaded with great reference material from many of our member companies. Tutorials, videos, and past presentations can all be accessed.**

<https://www.pdma.com/technical-forums/capacitor>

**We are always working to bring in and include more committee members, and encourage them to participate in the various activities that we work on. If you are interested please let me know.**

### **3 Co-Chairs**

**Fred Weber – Future Technology Worldwide - to lead Webinars – [Fred@FTWLLC.net](mailto:Fred@FTWLLC.net)**

**Pierre Lohrber – Wurth - to lead the Workshop**

**Wilmer Companioni – KEMET - to lead the Industry Session**

PSMA Capacitor Committee

# Webinars

## Capacitor Fundamentals

**This is a series of Webinars dedicated to teaching capacitor basics. We spent the first 2 Webinars defining what is a capacitor, the differences in capacitor technology, and how their parameters are affected. The third Webinar was focused on where caps are used and how the application determines which technology is actually best for a given application. Our typical attendance is over 100 most of whom stay over the scheduled hour to hear all of the Q&A which we always complete.**

**Our 4<sup>th</sup> Webinar will go thru the process of actually choosing a capacitor using datasheets and comparing benefits vs. draw-backs. We were shooting to have this Webinar in April, but given the abundance of virtual APEC Webinars in the near future we will push this out.**

## Create a Webinar slated for the 2021 Roadmap

**We plan to combine research performed by Mark Scott from Miami University on Conditional Monitoring of film Caps with new technology from Manufacturers to mitigate weaknesses.**

**We will also be including several subjects from our Industry Session (see next slide).**

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## 2020 Industry Session

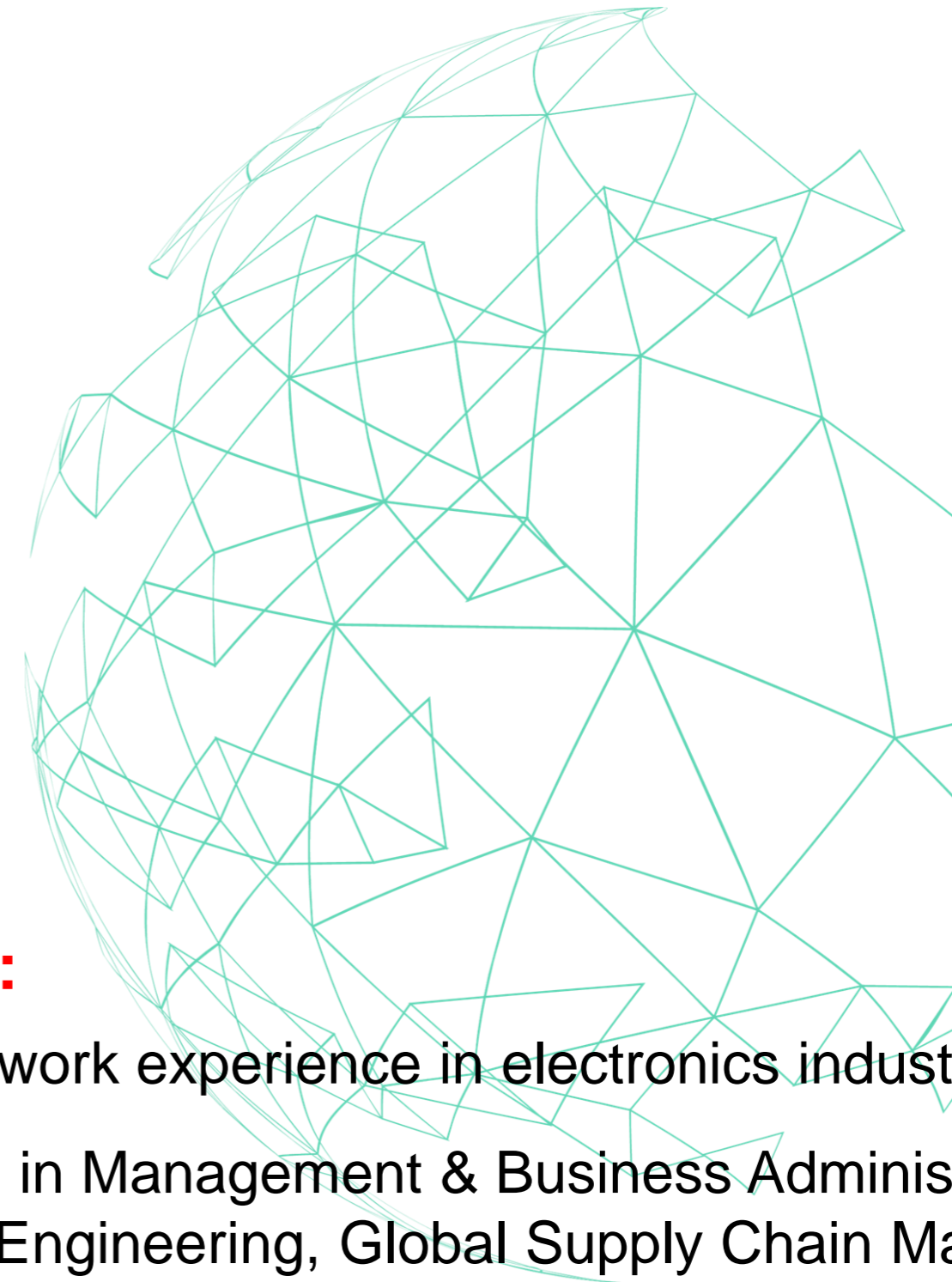
- \*Satisfied with MLCC Downsizing and Availability? Let's Go Behind the Scenes of Technology, Their Physics & Alternatives**
- \*Innovative Power Capacitor Technologies for Wide Band-Gap Semiconductors**
- \*A Ride-Along with Tantalum Polymer**
- \*Hybrid Aluminum Electrolytic Capacitors High Energy Density and Low ESR for eMobility**
- \*The Film Capacitor Technology for DC Link**
- \*Supercapacitor based Long Time Constant Circuits: A Unique Design Opportunity for New Power Electronic Topologies**

**The Capacitor Committee is choosing 2-3 of these presentations to be included in the Roadmap Webinar Series. The balance will be offered in a single 2 hour Webinar. Timing is TBD**



# Pierre Lohrber

Head of Business Unit  
Capacitors & Resistors Division



## Background:

- 28 years of work experience in electronics industry
- Background in Management & Business Administration, Electronics Engineering, Global Supply Chain Management and Supply Chain Risk Management
- Department leader Advanced Manufacturing / 3D Printing Innovations Lab Würth Group



+49 30 5480702-100



Pierre.Lohrber@we-online.com



www.we-online.com

**PSMA**  
Thank you

**We appreciate any ideas or suggestions for improvement.**

**Now to Introduce today's Workshop, Pierre Lohrber**





# **How to choose and define capacitor usage for various applications, wideband trends, and new technologies**

**Third capacitor workshop in a row, basics in 2018, deep dive on technologies in 2019**

**Three consecutive weeks on Tuesday, started on April, 21<sup>st</sup>, all registered participants are eligible for the magnetics workshop as well**

**Well balanced program with brilliant lectures from high class international universities, researchers and speakers from capacitor manufacturers of around the world**

**Duration about 2 hours each, 3 - 4 speakers, Q&A session at the end, live chat with the speakers, presentation as handout**

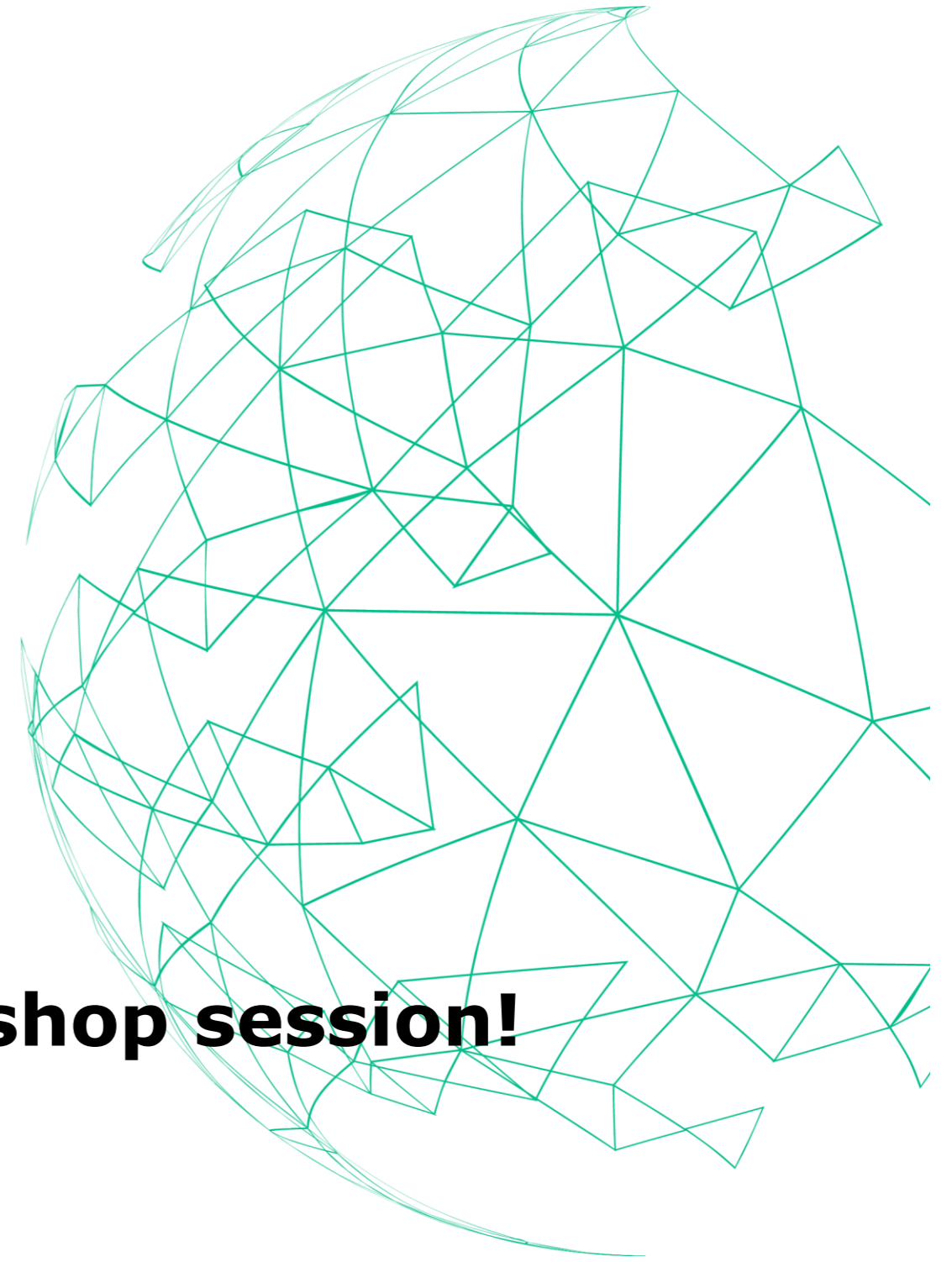
**Type in questions in the live chat or raise in the Q&A session**

**We have included a survey that will follow each Webinar. Please reply as soon as possible, especially if you have a recommendation for the next week's Webinar.**

**PSMA**  
Thank you

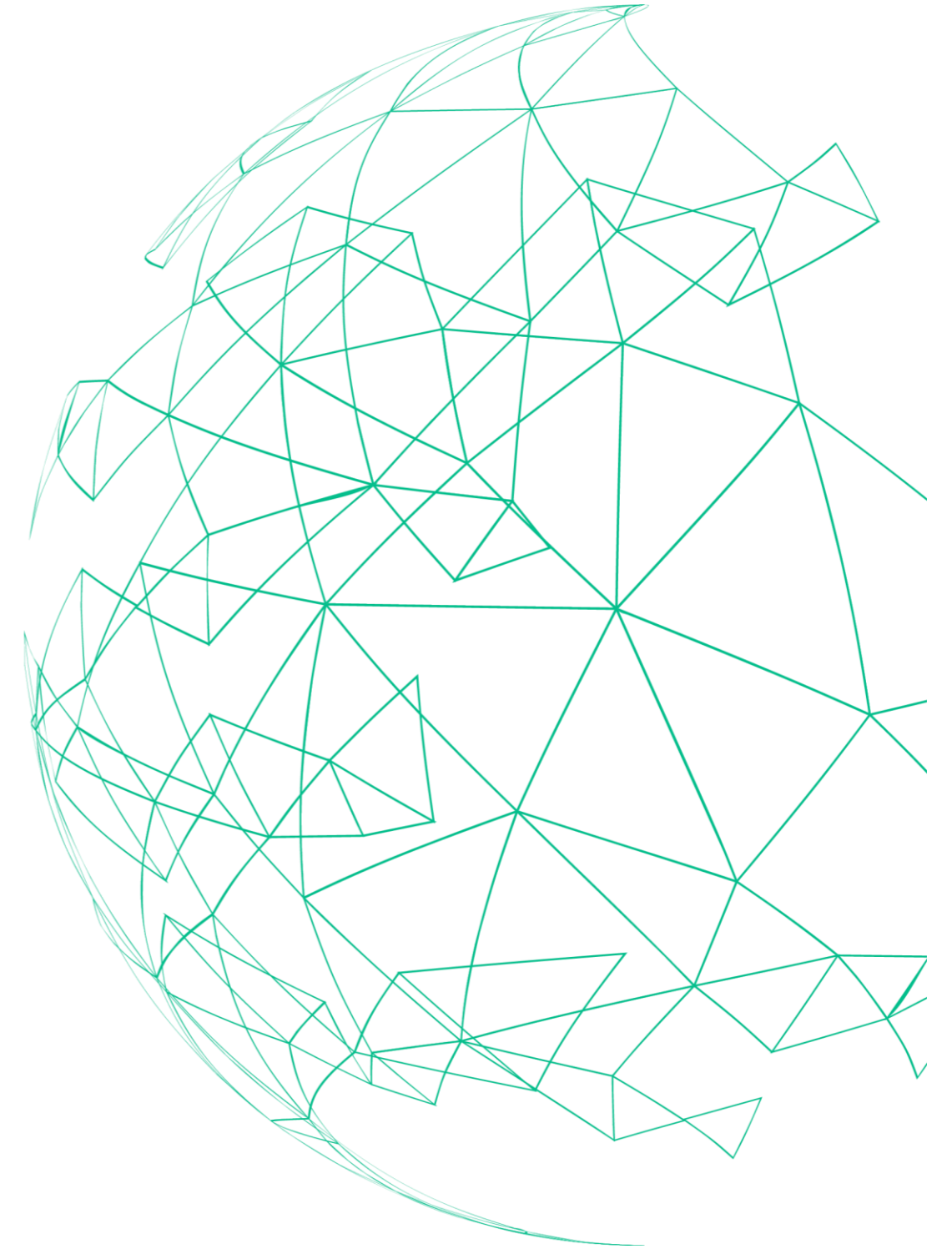
**Please enjoy today's second workshop session!**

**Let's get started**



**PSMA**  
Thank you

**Demonstration**



**PSMA**  
Thank you

**Question and Answer Session**  
**We WILL answer ALL questions**

