



# Battery Management

## Deep Dive Technical Training



	Tuesday, Oct. 17	Wednesday, Oct. 18			Thursday, Oct. 19		
	Fundamentals & Overview	Gauge	Charger	Monitoring & Protection	Gauge	Charger	Monitoring & Protection
8:00-9:00 a.m.		Breakfast			Breakfast		
		Salon D			Salon D	Salon C	Salon E
9:00 - 9:45 a.m.		Kick-off and welcome: BMS update			Leveraging fuel gauging for intelligent power management	To comply with USB power delivery 3.0 specification: advanced applications of bq2570xA buck-boost charger	Setting up your daisy chain communication for success?
10:00 - 10:45 a.m.		Keynote speech by Exponent			BMS for TELEMATICS/eCall	Introduction to USB type-C and power delivery: Focus on charging applications	Monitoring and protector roadmap: Update & overview of new generation products
10:45 - 11:00 a.m.		Break			Break		
11:00 - 11:45 a.m.		Battery technology development trends: Today's state of the art and future directions			TBD	Chargers roadmap: Update & overview of new generation products	TBD
12:00 - 12:45 p.m.		Chemistry programming tools: Lessons learned and update			Gauge roadmap: Update & overview of new generation products	Easy-to-use charging options for low & medium power applications	Designing with multi-rail PMIC
12:45 - 1:30 p.m.		Lunch			Lunch		
	Salon D	Salon D	Salon C	Salon E	Salon D	Salon C	Salon E
1:30 - 2:15 p.m.	Introduction to battery fuel gauging	Battery fuel gauging for fast charging applications	Chargers for wearable, IoT, and small battery applications	Does cell balancing really help to extend battery life?	Troubleshooting your gauge design	Reduce charge time with advanced narrow voltage DC charger implementation	Accurate measurement of power inductor losses – by Wurth Elektronik
2:15 - 2:30 p.m.	Break			Break			
2:30 - 3:15 p.m.	Impedance track and CEDV algorithms	Why accurate battery gauging is needed for wearables	Chargers for industrial and medical applications	What are all these safety goals?	New unique gauging algorithms for industrial applications (primary / EOS)	Emerging inductorless topologies and system architecture for > 5 A charging	New power modules with new features for industrial
3:15 - 3:45 p.m.	Break			Break			
	Understanding battery charger requirements and IC specifications (part 1)	Multi-cell gauging for industrial applications (bq40z50-R2)	How to implement maximum power point tracking for solar charging applications	BMS solution for industrial battery packs	Longhorn	Salon C	
3:45 - 4:30 p.m.					Step-by-step design example: 1s (hands on session)	Practical guidelines for testing and troubleshooting your charger design	
4:45 - 5:30 p.m.	Understanding battery charger requirements and IC specifications (part 2)	Battery gauge system design overview - process flow, tools, and configuration	Increasing maximum achievable current with high efficiency switch mode charging solutions		Step-by-step design example: bq40Z50-R2 (hands on session)	Dual charger solution and NiMH charger solution update	
5:45 - 6:30 p.m.	Basics of battery protection and safety						
6:30 p.m.		Reception & Dinner					