

Solutions To Whole Vehicle Battery, Systems & Electrified Powertrain Integration Challenges

SAVE \$400
- Register By December 20



Developing Affordable Mass Market Battery Electric Vehicles

Battery Electric Vehicle Architectures

Detroit Congress 2020

TWO-DAY CONFERENCE | FEBRUARY 26-27 2020

SUBURBAN COLLECTION SHOWPLACE, HYATT PLACE DETROIT / NOVI, MI, USA

From Emerging New Mobility Business Models To Increasing Autonomy
& Changing Global Regulations - *"What Does The Future Look Like 10 - 20 Years From Now?"*

Evolution Of New Battery Technologies, Vehicle Platforms
& Architectures To Meet The Future Needs Of End Users

Application Of Design Considerations & Safety Requirements For Vehicle Integration
Including: Battery Technology & Systems, Thermal Management Optimization,
NVH, Powertrain Architecture & Components, HV Electronics
& Control Modules

Brand New 2020 Agenda

**Directly Addresses Realistic Commercial Options,
Technology Strategies And Engineering Solutions
To The Way Forward For EV OEMs:**

- Design of the **battery enclosure and integration** into the vehicle, including 'skateboard' and other cost-effective platforms
- What **innovations in battery technologies** are available now to overcome today's range and performance shortcomings
- How to **optimize high voltage electrical architecture and systems** effectively to reduce costs and maximize efficiency
- Latest engineering approaches to **lightweight structural design, powertrain transmission and e-motor integration** to enhance NVH
- Adoption of **advanced thermal management technologies** to keep the battery with optimal operating temperature while reducing energy demand
- Possibilities for greater **standardization** across the EV industry, addressing critical safety compliance and crash issues

Key OEM Speakers Include:



Karl Plattenberger
Chief Engineer - Powertrain,
Thermal Systems and Aero
**Mahindra Automotive
North America**



Dr. Daniel Kok
Global xEV Architect, Senior Technical
Leader, Electrified Powertrain
Ford Motor Co.



Shiv Sikand
Executive Vice President
and Co-Founder
Drako Motors



Daniele Giachi
Director of Vehicle Engineering,
C_Two Chief-Engineer
Rimac Automobili



Robert Bollinger
CEO
Bollinger Motors

Partner: 
Seek **Together**

Co-Sponsor:  **wevo**

Network Break
Sponsors:



www.beva-detroit.com



Developing Affordable Mass Market Battery Electric Vehicles

Battery Electric Vehicle Architectures

Detroit Congress 2020

We Bring Together OEM Leaders And Senior Engineers To Deliver Detailed Presentations, Case Studies And Panel Discussions



Karl Plattenberger
Chief Engineer - Powertrain,
Thermal Systems and Aero
Mahindra Automotive
North America



Ken Gould
E-Mobility, Technical
Systems Engineer
Porsche Cars
North America



Robert Bollinger
CEO
Bollinger Motors



Rick Weisbarth
President Sales and
Industrial Development
Laser Marking
Technologies, LLC



Dan Panoz
Founder and President
Panoz



Gary Danner
Founder & CEO
DD Danner



Michael North
Co-Founder
Galaxy Trade and
Technology



Dong Yuming
Chief Executive Officer
Galaxy Trade and
Technology



Dr. Daniel Kok
Global xEV Architect,
Senior Technical Leader,
Electrified Powertrain
Ford Motor Co.



Daniele Giachi
Director of Vehicle Engineering,
C_Two Chief-Engineer
Rimac Automobili



Casey Selecman
Director, Powertrain Practice
IHS Markit



Austin Hausmann
Vice President of Research and
Product Development
Chanje



Rich West
Professor
Boston University



Terence Kearns
Business Development Manager
and Strategist
WEVO-Chemie



Scott Bang
Director of Engineering, Thermal
Management, Aerodynamics,
NVH, Simulation And Material
Engineering
Byton



Dr. Pradyumna Goli
Business Development
Manager, E-Mobility
Henkel Corp.



Shiv Sikand
Executive Vice President
and Co-Founder
Drako Motors



Brydon Owen
Chief Engineer -
Electrical Engineering
New Flyer



Lewis Horne
CEO and CTO
Uniti, Sweden



Dr. John Yan
Executive Expert of CAE Technology,
Vehicle Engineering and Integration
NIO China



Casey Hyun
Principal
Global Design
Index

The BEVA Detroit 2020 Congress Is Designed Specifically To Address The Key Challenges Facing OEMs In Being Able To Get Their New BEV Product Ranges To Market Quickly At A Competitive Price

Day 1 Congress Focus

Future Architectures For Tomorrow's Battery Electric Vehicle And Integration Of Battery Technology, Enclosure & Body Structure

- Integration of battery & body structure directly
- Optimal materials selection & joining techniques to maximize impact protection
- Apply the latest virtual simulation techniques to reduce time to market
- How standardization could be one solution to cost reduction and improved scalability

Future EV Architectures For Tomorrow

Leaders involved with BEV strategy and development will share their insights and expectations in the Congress keynote sessions looking ahead 10-20 years – including how business and technology strategies and the OEMs themselves will need to evolve, against a backdrop of new mobility business models, changing regulation and increasing demand for autonomous applications.

"Good conference with plenty of technical detail by engineers, for engineers"

Project Engineer, Honda

"Great mix of people and teams who provide technical expertise in their fields"

Energy Demand Specialist, FCA

"Best content of any GALM or BEVA event I've been to yet"

Technical Specialist, ACMA

Day 2 Congress Focus

Managing Whole Vehicle Integration Effectively Including Structure, Systems And Powertrain, Design For Efficiency, Energy Demand Reduction And Lower Cost

Whole vehicle systems integration including:

- Battery technology & systems, thermal management optimization, nvh, power train architecture & components and high voltage electronics & control modules
- Hear best practice case studies on reducing cost & taking vehicle efficiency, range & performance to the next level
- Benefit from industry best practices applied to BEV crash & thermal simulation

Unrivaled Sponsorship And Exhibition Showcase Opportunities

Make sure you have a presence on-site to connect and network with EV and autonomous vehicle senior engineers and technology decision makers from both established and start-up OEMs from North America and overseas.

For full details, contact the BEVA team at sponsorship@lbcbg.com or call (1) 800 721 3915

07:30 Coffee And Registration

09:00 Chair's Welcome And Introduction

**FUTURE ARCHITECTURES FOR TOMORROW'S
BATTERY ELECTRIC VEHICLE AND INTEGRATION
OF BATTERY TECHNOLOGY, ENCLOSURE
& BODY STRUCTURE**

**KEYNOTE PANEL SESSIONS ON FUTURE VEHICLE
DESIGN TRENDS AND NEW BATTERY TECHNOLOGY**

1. FUTURE ARCHITECTURES FOR TOMORROW'S B.E.V.

**09:00 Evolution Of Battery Electric Vehicle
Architectures To Meet The Future Needs Of
Consumers: What Does The Future Look Like
10-20 Years From Now?**

- How will the design of vehicle architectures evolve to meet future needs of customers, against a backdrop of new mobility business models, changing global regulations and increasing demand for autonomous applications, especially in densely populated cities and urban centres.
- The panellists will deliver contrasting views on what the future B.E.V. could look like and this will be followed with an extended audience Q&A.

Robert Bollinger, CEO, **Bollinger Motors**

Dr. Daniel Kok, Global xEV Architect, Senior Technical Leader, Electrified Powertrain, Systems Engineering, **Ford Motor Co.**

Daniele Giachi, Director of Vehicle Engineering, C_Two Chief-Engineer, **Rimac Automobili**

Lewis Horne, CEO and CTO, **Uniti**, Sweden

Dan Panoz, Founder and President, **Panoz**

Austin Hausmann, VP Of Research & Product Development, **Chanje**

**2. WHERE IS THE MARKET GOING FROM A VOLTAGE
STANDPOINT?**

**10:30 Vehicle Design Considerations &
Trade-offs Between 400V & 800V Electrical
Architectures**

Understand the vehicle design considerations and trade-offs between higher voltages and lower currents that may require lighter cabling, for example. In which direction is the industry going, and what are the implications for reducing cost and improving performance for the customer - as well as whole vehicle systems design and integration?

Brydon Owen, Chief Engineer - Electrical Engineering, **New Flyer Industries**

11:00 Questions & Discussion

11:10 Networking Coffee Break In Exhibition Area

**2. WHERE IS THE MARKET GOING FROM A VOLTAGE
STANDPOINT?**

**11:40 New Battery Technology And Chemistry
Innovations On The Horizon For Short, Medium
And Long Term Production**

The final keynote panel features technological strategists from the leading battery manufacturers - as well as emerging new players - discussing recent, hot off the press, energy density improvements to increase power and range - without requiring additional cooling.

We look at improvements to advanced lithium ion batteries - plus technological innovations ready for imminent - to medium term- production including:

- Li Co2 Batteries
- Update on the "Million Mile Battery"

- 3rd Gen Lithium-Sulfur batteries
- Cylindrical cell battery technology developments
- Update on solid state battery 2019 development
- Graphene batteries
- Aluminium air
- Fuel cell initiatives

Casey Selecman, Director, Powertrain Practice, **IHS Markit**
**OPTIMAL IMPACT PROTECTION OF SKATEBOARD
BATTERY SYSTEM DESIGN**

BATTERY ENCLOSURE SIMULATION

**12:20 Best Practice Integration & Attachment Of
The Battery Structure To The Body-In-White**

- Monocoque - A unique architecture
- Shape of the battery-pack - CoG, Passive-Safety, Liability
- Structural performances at vehicle level - crash, stiffness, strength

Daniele Giachi, Director of Vehicle Engineering, C_Two Chief-Engineer, **Rimac Automobili**

12:40 Technologies To Optimize EV Battery Pack

Dr. Pradyumna Goli, Business Development Manager, **E-Mobility, Henkel Corp**

13:00 Questions & Discussion

13:10 Networking Lunch In Exhibition Area

**CASE STUDIES ON COMMERCIAL AND WORK VEHICLE
ELECTRIFICATION**

**14:10 Optimal Integration Of Battery And Fuel
Cell With Vehicle Structures For Pick Up Trucks,
Work Vehicles And Class 8 Heavy Trucks**

- Integration experiences with battery and hydrogen fuel cell class 8 heavy trucks
- How can greater integration of functionality within the battery be achieved in the most cost effective way?

Gary Dannar, Founder and CEO, **DD Dannar**

14:40 Questions & Discussion

BATTERY ENCLOSURE MATERIAL SELECTION

**14:50 Selection Of Optimal Multi-Material
Combinations & Joining Methods For The
Battery Enclosure**

- Key decision factors in the choice of battery structure materials
- Evaluating the cost-performance of aluminium extrusions, steel and composites for battery enclosures
- Technology and processes for manufacturing specific material combinations for the battery enclosure
- Single versus multiple pack approaches for innovative battery configurations

Terence Kearns, Business Development Manager and Strategist, **WEVO-CHEMIE GmbH**

15:15 Questions & Discussion

MAGNESIUM'S ROLE IN EV LIGHTWEIGHTING

**15:20 Battery Efficiency And Range Extension
Through A Selective System For Vehicle
Lightweighting Using Magnesium**

- Impact of reducing gross vehicle weight on battery power and charge retention
- Achieving efficiency with use of magnesium alloys in selective vehicle systems

- Magnesium optimization for gross vehicle weight reduction of 20% or more
- Implications of large-volume, long-term supply of custom magnesium alloys and quality control

Michael North, Co-Founder, **Galaxy Trade and Technology**

Dong Yuming, CEO, **Galaxy Trade and Technology (China)**

Dan Panoz, Founder, **Panoz Engineering and Panoz Auto**

15:45 Questions & Discussion

15:50 Networking Coffee Break In Exhibition Area

**PANEL: EV INFRASTRUCTURE DEVELOPMENT
AND DEPLOYMENT**

**16:20 What Opportunities Will Innovations In Fast
Charging And Wireless Charging Technologies
Create For OEMs And Vehicle Design?**

- Advances in battery management systems (BMS) and charging with artificial intelligence (AI) extend to extend battery longevity
- Increasing the overall energy efficiency of fast charging and wireless charging
- Looking ahead - prospects for hydrogen infrastructure for fuel cell EVs
- Moving towards greater harmonization of standards globally

**TROUBLESHOOTING CHALLENGES: CORROSION OF
BATTERY CELL ATTACHMENTS**

17:00 Questions & Discussion

**PANEL: STRATEGIC DIALOGUE ON STANDARDIZATION
OF BATTERY ENCLOSURES**

**17:10 How Standardization Of Battery
Enclosures Could Be A Partial Solution To
Accelerate Cost Reduction And Improve
Scalability**

- Developing standards to verify structural integrity and impact resistance of battery enclosures
- Emerging approaches and thought-leadership on the case for standardization of battery enclosures to reduce vehicle cost

Austin Hausmann, VP Of Research & Product Development, **Chanje**

**17:45 Chair's Closing Remarks - Day One
Followed By Networking Drinks Reception
For All Attendees**

08:00 Coffee and Registration

09:00 Chair's Welcome and Introduction

**MANAGING WHOLE VEHICLE INTEGRATION
EFFECTIVELY INCLUDING STRUCTURE, SYSTEMS
AND POWERTRAIN DESIGN FOR EFFICIENCY,
ENERGY DEMAND REDUCTION & LOWER COST**

**DAY 2 KEYNOTE OEM PANEL: LOW COST B.E.V.
INTEGRATION**

**09:10 Whole Vehicle Integration - Experiences
And Best Practices In Design And Development
- Considerations Relative To Chassis, Electrical
Systems, Battery And Body Structure**

- Application of design considerations and safety requirements for whole vehicle systems integration
- Battery technology and systems management - including EMI shielding
- Powertrain architecture and components
- Thermal management optimization to maximize efficiency
- High voltage architecture, electronics and control modules
- Noise, vibration and harshness

Daniele Giachi, *Director of Vehicle Engineering, C_Two Chief-Engineer*, **Rimac Automobili**

Karl Plattenberger, *Chief Engineer - Powertrain, Thermal Systems and Aero*, **Mahindra Automotive North America**

Ken Gould, *E-Mobility, Technical Systems Engineer*, **Porsche Cars North America**

Brydon Owen, *Chief Engineer - Electrical Engineering*, **New Flyer Industries**

**THERMAL MANAGEMENT FOR EXTREME
ENVIRONMENTS**

**10:00 Designing The Vehicle Thermal
Management System For A Range Of Operating
Environments In Global Markets**

- Design considerations with the environment, drive cycle and battery
- Operating over a wide temperature range, both extreme cold and hot
- Practical considerations of B.E.V. performance in Dubai vs. Scandinavia
- The switch from air cooling to liquid cooling, heat exchanger and heat pump technologies to maintaining cabin comfort

Scott Bang, *Director of Engineering Thermal Systems, NVH, Aerodynamics, Simulations & Material Engineering*, **BYTON**

10:30 Question And Answer Session

**ADVANCES IN SIMULATION TECHNIQUES FOR
ENHANCED EV THERMAL MANAGEMENT,
CRASHWORTHINESS & NVH PERFORMANCE**

MATERIAL SELECTION FOR EV BATTERY ASSEMBLY

10:40 Thermal Management And Fire Protection

Greg Becker, *Associate Materials Scientist*, **Dow**

11:10 Question And Answer Session

**11:20 Networking Coffee Break In Exhibition Area
Sponsored By Dow**

**ENHANCING CRASHWORTHINESS THROUGH
SIMULATION MODELING**

**11:50 Integrating Safety Into The Design Of New
Components For Battery Systems, Motors And
Powertrain**

- Benefits of simulation in terms of improved vehicle structure and material choices for enhanced crashworthiness
- Approaches being adopted based on virtual body design to avoid safety issues
- Evaluation of structure and battery integrity in crashworthiness simulations
- Where does the automotive community see we are going from a safety standpoint?

Dr. John Yan, *Executive Expert of CAE Technology, Vehicle Engineering and Integration*, **NIO China**

12:25 Question and Answer Session

OPTIMIZING NVH

**12:30 Utilizing Advancements in Fiber Laser
Technology for Ablation, Cleaning and Texturing
Material Surfaces**

Rick Weisbarth, *President of Sales and Industrial Development*, **Laser Marking Technologies, LLC**

12:55 Question and Answer Session

13:00 Networking Lunch In Exhibition Area

EV DESIGN FOR EFFICIENCY

**14:00 Reducing Cost & Taking Vehicle Efficiency,
Range And Performance To The Next Level**

- Design approaches and strategies being adopted to enhance overall EV efficiency and maximize performance and range
- Lowering vehicle energy demand through lower resistance tires, good aerodynamics and structural lightweighting
- What can we learn from benchmarking studies about the strategies and direction of the leaders in the EV market?

Casey Hyun, *Principal*, **Global Design Index**

14:25 Question and Answer Session

ELECTRIFIED POWERTRAIN CASE STUDY

**14:30 Electrified Powertrain Architectures
At Ford Motor Company**

- Electrified vehicle technology adoption cycle
- Opportunities for electrified powertrains in the mobility market
- Vehicle attributes
- Ford's hybrid, plug-in hybrid and battery electric vehicle architectures

Dr. Daniel Kok, *Global xEV Architect, Senior Technical Leader, Electrified Powertrain Systems Engineering*, **Ford Motor Co.**

15:00 Question and Answer Session

15:10 Networking Coffee Break In Exhibition Area

MULTI-SPEED TRANSMISSION

**15:40 Multi-Speed Transmission System
Adoption For Increased BEV Energy Efficiency
And Performance**

- Drawback of today's single speed EV transmission in terms of energy losses and performance degradation
- What workable approaches are emerging for two-speed transmissions and gearboxes?

16:05 Question and Answer Session

ELECTRONIC ARCHITECTURE

**16:10 Software and Hardware System
Architecture for Next Gen BEVs**

- Safety, predictability and efficiency on multicore x86 processors
- Real time networking over USB
- Single VCU for Powertrain, ESP, BMS/Charging, IVI, IC, Cloud, Analytics, OTA

Co-Presenters:

Shiv Sikand, *Executive Vice President and Co-Founder*, **Drako Motors**

Dr. Rich West, *Professor, Computer Science Department*, **Boston University**

16:35 Question And Answer Session

DESIGN FOR EV MANUFACTURING

**16:40 Design For EV Assembly, Manufacturing
And Production Set-Up**

- The need to integrate EV assembly methods for lowest cost during the EV development phase
- Avoiding complex and costly assembly processes
- Safety considerations with the integration of BEVs with ICEVs on same production line

Add Fei Xiong, *VP*, **Qiantu Motors**

17:10 Question And Answer Session

**17:20 Chair's Closing Remarks - Followed by
Apple TV and Champagne Draw**

17:30 End Of Conference

Details PLEASE USE CAPITALS - PHOTOCOPY FOR MULTIPLE DELEGATES

Delegate 1

☐ Mr ☐ Dr ☐ Miss ☐ Ms ☐ Mrs ☐ Other:

Name

Position

Organization

Email

Telephone

Address For Invoice Purposes

Zip/Postal Code

Country

Delegate 2

☐ Mr ☐ Dr ☐ Miss ☐ Ms ☐ Mrs ☐ Other:

Name

Position

Organization

Email

BRING YOUR TEAM & RECEIVE UP TO *20% OFF

3 Delegates: *10% OFF (Discount code: GROUP3)

4 Delegates: *15% OFF (Discount code: GROUP4)

5+ Delegates: *20% OFF (Discount code: GROUP5)

Delegate Rates GUESTS ARE RESPONSIBLE FOR THEIR OWN TRAVEL AND ACCOMMODATION ARRANGEMENTS (PRICE PER DELEGATE)

	Super Early Bird	Early Booking Discount	Standard Rate
	Cut off date: December 20, 2019	Cut off date: January 17, 2020	Cut off date: February 27, 2020
2 Day Conference	<input type="checkbox"/> \$1,399 SAVING \$400	<input type="checkbox"/> \$1,599 SAVING \$200	<input type="checkbox"/> \$1,799
Event Live Stream	<input type="checkbox"/> \$999		
Video Package	<input type="checkbox"/> \$699		

Please get in touch for OEM rates at: info@american-business-conferences.com

Payment PLEASE TICK APPROPRIATE BOXES AND COMPLETE DETAILS

Payment must be received in full prior to the event.

☐ **Option 1. CREDIT CARD** Please charge my ☐ VISA ☐ AMERICAN EXPRESS

☐ MASTERCARD

Amount \$USD

Expiry date

Card number

Security Code / CVV (required)

Name on card

Signature of card holder

☐ **Option 2. INVOICE** An invoice containing payment instructions will be sent electronically upon receipt of the completed registration form.

Terms & Conditions

The conference is being organized by American Business Conferences, a division of London Business Conferences Ltd, a limited liability company formed under English company law and registered in the UK no. 5090859.

Cancellations received 30 days prior to the start of the event will be eligible for a refund less \$150 administration fee, after this point no refund will be given. Cancellations must be made in writing, if you are unable to attend you may nominate a colleague to attend in your place at no additional cost.

Receipt of this registration form, inclusive or exclusive of payment constitutes formal agreement to attend and acceptance of the terms and conditions stated.

All outstanding fees must be paid within our standard payment period of 7 days. Any outstanding invoices will remain valid should cancellation of attendance be received outside of the aforementioned cancellation period.

*If you are claiming the early booking discount this may not be used in conjunction with other discounts advertised elsewhere. All discount

codes and offers must be claimed at the time of registration.

American Business Conferences reserves the right to alter or cancel the speakers or program.

American Business Conferences reserve the right to refuse admission.

We would like to keep you informed of other American Business Conferences products and services. This will be carried out in accordance with the Data Protection Act.

Please write to the Head of Marketing, American Business Conferences at the address below if you specifically do not want to receive this information.

American Business Conferences, City Center One, 800 Town & Country Blvd, Suite 300, Houston, Texas, 77024

American Business Conferences will not accept liability for any individual transport delays and in such circumstances the normal cancellation restrictions apply.

American Business Conferences is a Division of London Business Conferences Limited, Registered in England No. 5090859 EIN. no: 98-0514924

How To Finalize Your Registration

Now that your details are completed please send your registration form to our Customer Service Team using one of the following options:

Option 1. Email: info@american-business-conferences.com

Option 2. Fax: (1) 800 714 1359

Enquiries And More Information

Should you have any enquiries or if you would like to request more information contact our friendly **Customer Service Team** on **(1) 800 721 3915** or visit the conference website at **www.beva-detroit.com**