

# Expert Workshop

## *‘Power Electronics and Drive Train Technologies for Future xEVs’*

**16<sup>th</sup> April 2015, VDI/VDE-IT, Berlin**

### Greetings

Dear Sir/Madam,

The discussion about challenges of the electric mobility market introduction often focus on the limited performance and high cost of batteries, as well as the need for a corresponding charging infrastructure. Essential vehicle-related aspects, however, are oftentimes ignored. Therefore the Task 17 “System optimization and vehicle integration” of the IEA Implementing Agreement Hybrid and Electric Vehicles is analyzing technology options for the optimization of future vehicle components and drivetrain configurations that will enhance vehicle energy efficiency and performance. Since 2010, several Expert Workshops have been organized by Task 17 in order to evaluate potentials for system optimization.

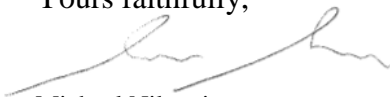
With the Expert Workshop ‘**Power Electronics and Drivetrain Technologies for Future xEVs**’, organized by the Austrian Association for Advanced Propulsion Systems (A3PS) in the role of the Task 17 leader, the IA-HEV intends to assess the state of the art with regard to e/e-architecture and drive train technologies and discuss potential techniques for enhancing the overall vehicle performance. The Expert Workshop will feature presentations by international and national experts.

You are cordially invited to join us for this workshop which will be held on the 16<sup>th</sup> April, 2015 (10:00-17:00 CET) in Berlin at the premises of VDI/VDE-IT, who in their role as office of the eNOVA Strategy Board on Electric Mobility are collaborating in Task 17.

Please return your registration by no later than **13<sup>th</sup> April, 2015 to Mr. Michael Nikowitz** [michael.nikowitz@a3ps.at](mailto:michael.nikowitz@a3ps.at).

I look forward to your participation and to a highly stimulating workshop with fruitful discussions.

Yours faithfully,



Michael Nikowitz  
Austrian Association for Advanced Propulsion Systems (A3PS) - Operating Agent of Task 17

## Workshop Background

The Workshop is organized by Task 17 - “System Optimization and Vehicle Integration” of the Implementing Agreement ‘Hybrid and Electric Vehicle’ ([www.ieahev.org](http://www.ieahev.org)) within the framework of the International Energy Agency (IEA).

The Implementing Agreement for co-operation on Hybrid and Electric Vehicle Technologies and Programs (IA-HEV) enables member parties to discuss their respective needs, share key information, and learn from an ever-growing pool of experience from the development and deployment of hybrid and electric vehicles.

### Task 17 – System Optimization and Vehicle Integration

Task 17 is analyzing technology options for the optimization of EV components and drive train configurations that will enhance vehicle energy efficiency performance.

The wide bandwidth of treated topics covered:

- **Components:** Battery Management Systems, Electric Motors,
- **Performance Assessment:** Comparison of different configurations,
- **Simulation Tools,**
- **Thermal Management** (sustainable use of available energy),
- Functional and Innovative **Lightweight Concepts and Materials** for XEVs,
- **E/E-Architecture,**
- **Strategies for Market Introduction and Deployment**

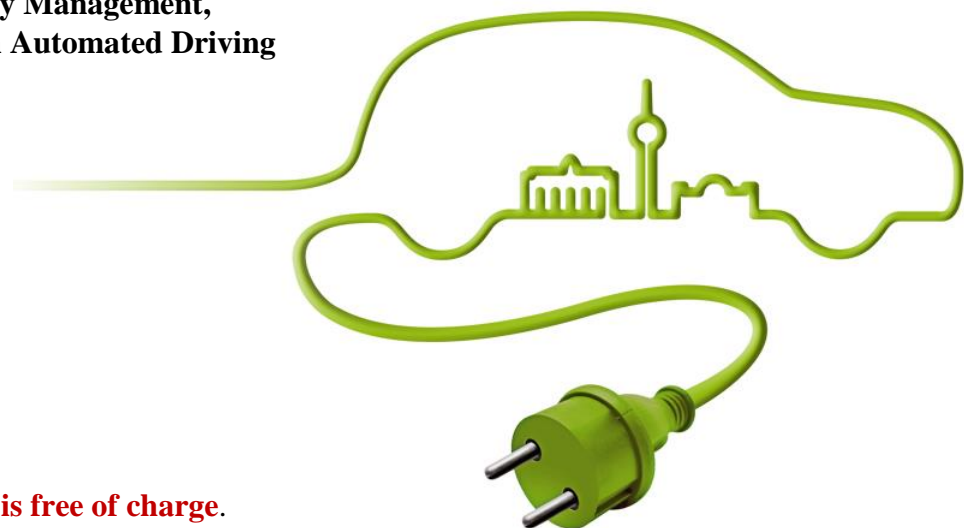
## Workshop objectives

The aim of this workshop is to summarize and communicate on a global level:

- the status and prospects of **Power Electronics and Drive Train Components** and
- to give an introduction about **E/E-Architecture and Intelligent Controls** in order to enhance the overall vehicle performance.

Dedicated topics of the workshop are:

- **Power Electronics & Power Supply,**
- **Electrical Systems,**
- **Materials and their Integration,**
- **Voltage Levels,**
- **Electric Energy Management,**
- **Synergies with Automated Driving**



**The participation is free of charge.**

## Agenda - 16th April, 2015

### Opening

10:00

#### Welcome and Introduction

*Michael Nikowitz, A3PS – Operating Agent of Task 17*

*Gereon Meyer, VDI/VDE-IT*

10:10

#### Task 17 in IA-HEV

*Michael Nikowitz, A3PS*

10:20

#### Project Portfolio in Electric Mobility

*Gabi Fernholz, VDI/VDE-IT*

*Program Management Agency Electronic Systems / Electric Mobility  
on behalf the Federal Ministry of Education Research*

### Session 1: Power Electronics and Drive Train Components

10:30

#### Efficiency Improvement Potentials for Light-, Medium- and Heavy Duty Trucks via Hybridization and Electrification in Urban and Sub-Urban Traffic

*Peter Prenninger/ Arno Huss, AVL List GmbH*

10:55

#### Power Electronic Concepts for Modular Drive Trains of Hybrid and Electric Vehicles

*Hauke van Hoek, RWTH Aachen University*

11:20

#### Virtual Design Approaches in the Development of Electric Vehicle Powertrain Components

*Johannes Gragger, Austrian Institute of Technology (AIT)*

11:45

#### Examples of electric innovative architectures for xEVs

*Laurent Garnier, CEA*

12:10

#### Advanced Reluctance Motors for Electric Vehicle Applications

*Saphir Faid, Punch Powertrain*

12:35

#### Lunch Break and Networking

### Session 2: E/E-Architecture and Intelligent Control

13:35

#### Synergies E/E-Architecture of EVs and autonomous driving (tbd)

*Karl-Josef Kuhn, Siemens*

14:00

#### Advanced Hybrid Electric Autobus Design

*Christoph Voser, ETH Zurich*

14:25

#### IMPROVE- Cloud Data Integration into the Energy Management of Commercial Fleet-Operated Electric Vehicles

*Bernhard Brandstätter, Virtual Vehicle*

14:50

#### Topic (tbd)

*Speaker (tbd), HELLA KGaA Hueck & Co.*

15:15

#### Advanced Vehicle Testing Activity at Idaho National Lab: Evaluation of Vehicles and the Grid together as a System

*Richard Carlson, Idaho National Laboratory*

15:40

#### Coffee Break and Networking

## Conclusions

**16:20**

**Discussion about Following IEA Task on Synergies of Automated Driving and Electric Vehicles**

*Gereon Meyer, VDI/VDE-IT*

**16:50**

**Closing Remarks and Farewell Address**

*Michael Nikowitz, A3PS*

## Venue

VDI/VDE Innovation + Technik GmbH  
 Steinplatz 1  
 10623 Berlin  
 Phone: +49 30 310078-0 /  
 Fax: +49 30 310078-141  
 E-Mail: mail@vdivde-it.de / www.vdivde-it.de

## Meeting Time

16<sup>th</sup> April, 2015  
 10:00-17:00 CET

## Deadline for Registration

13<sup>th</sup> April, 2015  
[michael.nikowitz@a3ps.at](mailto:michael.nikowitz@a3ps.at)

## Participation Fee

Participation is free of charge

## Travel Information

### From Tegel Airport (appr. 15 minutes):

take **Bus X9** toward Zoologischer Garten, depart at **U-Bahn** **Ernst-Reuter-Platz** change here for  
**Bus M45** toward Zoologischer Garten, depart at Steinplatz or  
**Bus 245** toward Zoologischer Garten, depart at Steinplatz

### From Schönefeld Airport (appr. 50 minutes):

take **RE7, RB14** toward Nauen, depart at Zoologischer Garten change here for  
**Bus M45** toward Spandau Johannesstift, depart at Steinplatz or  
**Bus 245** toward Nordbahnhof/Gartenstraße, depart at Steinplatz

### From Berlin Hauptbahnhof/ Central Station (appr. 20 minutes):

take **Bus 245** toward Zoologischer Garten, depart at Steinplatz or  
 take all trains westward (**S3/S5/S7/S75**), depart at Zoologischer Garten change here for  
**Bus M45** toward Spandau Johannesstift, depart at Steinplatz or  
**Bus 245** toward Nordbahnhof/Gartenstraße, depart at Steinplatz

## Imprint

### Organizer

A3PS- Austrian Association for Advanced  
 Propulsion Systems  
 Tech Gate Vienna  
 Donau City Street 1  
 1220 Vienna

### Host (Co-Organizer)

VDI/VDE Innovation + Technik GmbH  
 Steinplatz 1  
 10623 Berlin

### Stand

03.04.2015

### Contact details - Operating Agent

Mr. Michael Nikowitz  
 Mail: [michael.nikowitz@a3ps.at](mailto:michael.nikowitz@a3ps.at)  
 Phone: 43 01 205 01 68-105

### Text

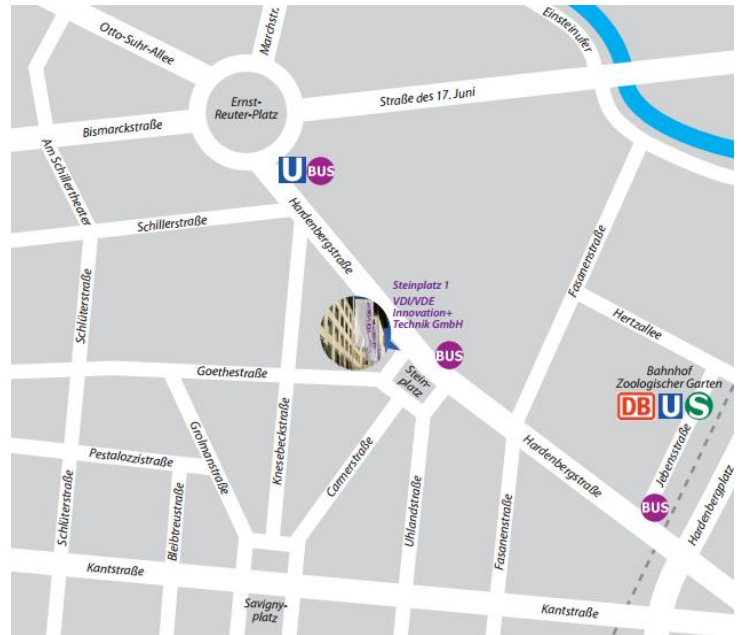
Michael Nikowitz (A3PS)

### Image courtesy

AUDI and cityproducts.de

### For more information see

[www.a3ps.at](http://www.a3ps.at)



## Hotel Recommendations

### **AZIMUT Hotel Berlin Kurfürstendamm**

Joachimsthaler Str. 39/40  
Charlottenburg-Wilmersdorf  
10623 Berlin (Germany)

[http://de.azimuthotels.com/azimut\\_hotel\\_berlin\\_kurfuerstendamm](http://de.azimuthotels.com/azimut_hotel_berlin_kurfuerstendamm)

### **Novum Hotel Gates Berlin Charlottenburg**

Knesebeckstr. 8-9  
Charlottenburg-Wilmersdorf  
10623 Berlin, Deutschland

<https://www.novum-hotels.de/hotel-gates-berlin/hotel-gates-information-berlin.php>

### **Hotel Carmer 16**

Carmerstr. 16  
Charlottenburg-Wilmersdorf  
10623 Berlin

<http://www.hotel-carmer16.de/>

### **Hotel OTTO**

Knesebeckstr. 10  
Charlottenburg-Wilmersdorf  
10623 Berlin

<http://www.hotelotto.com/de/>

### **ibis Styles Berlin an der Oper**

Bismarckstr. 100  
Charlottenburg-Wilmersdorf  
10625 Berlin (Germany)

<http://www.ibis.com/de/hotel-8286-ibis-styles-berlin-an-der-oper/index.shtml>

### **Wyndham Berlin Excelsior**

Hardenbergstr. 14  
Charlottenburg-Wilmersdorf  
10623 Berlin (Germany)

<http://www.wyndhamberlinexcelsior.com/>

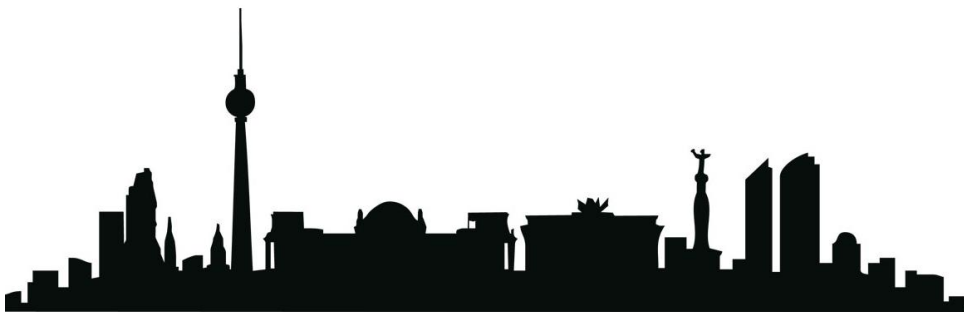
### **Hotel Savoy Berlin**

Fasanenstr. 9-10  
Charlottenburg-Wilmersdorf  
10623 Berlin (Germany)

<http://www.hotel-savoy.com/>

## Tourist Information

<http://www.visitberlin.de/de>



**Looking forward to meeting you in Berlin!**