THE 24TH INTERNATIONAL ELECTRIC VEHICLE SYMPOSIUM
THE 40TH JUBILEE OF EVS

CONFERENCE EXHIBITION RIDE & DRIVE
EVS 24 VIKING RALLY
STAVANGER, NORWAY
13-16 MAY 2009

HOSTED AND ORGANISED BY:
STAVANGER FORUM

IN COLLABORATION WITH:
THE EUROPEAN ASSOCIATION FOR BATTERY, HYBRID AND FUELCELL ELECTRIC VEHICLES & WORLD ELECTRIC VEHICLE ASSOCIATION
THE CONFERENCE WAS CONCEIVED, ORGANISED AND BROUGHT TO YOU BY

MAY 13 SUMMIT AND WORKSHOPS
Harald N. Røstvik and Robert Stüssi

With the collaboration of the 4 workshop chairs:
Keith Hardy / Peter Van den Bossche / Alain Bouscayrol / Steffen Møller-Holst

MAY 14 - 15 PLENARY PROCEEDINGS
Harald N. Røstvik

MAY 16 PLENARY PROCEEDINGS
Robert Stüssi

MAY 14 - 16 PARALLEL AND DIALOGUE SESSIONS
Joeri Van Mierlo and Peter Van den Bossche
GREETINGS FROM THE CHAIRMEN

Years of work to design EVS 24 has come to an end and is crowned with great success and we are ready to celebrate 40 years of EVS and 20 years of the World Electric Vehicle Association.

When this is being written we are on the way towards registering 1000 participants from 45 nations. Over 300 persons will attend the Anchor Day Summit “City Challenges, to achieve better places to live, work and travel”, workshops and tutorials. There will be an “E-Visionary” city award.

The conference will consist of some 350 presentations. Awards for the best oral and dialogue session papers will be handed over.

The exhibition covers over 5 000 m² and consists of 92 reputable companies from close to 40 nations spread over 76 booths.

The EVS Viking Rally is on with 32 cars on the 570 km Hydrogen Road from Oslo to Stavanger plus 11 joining in the Electric Road.

We are simply overwhelmed by the turnout!

The financial crisis that caused other events to close has certainly also had an impact on our event, but the facts show that it is a very successful EVS. This could be taken as a proof that companies, institutions and individuals are carrying on designing for and planning The Future regardless of temporary financial turmoil.

When you read this, you will know that you were one of the many that in sum constitute the success of EVS 24. The chairmen also wants express gratitude and praise to the people at Stavanger Forum that for years now have been at it together with us.

Finally, but not least, our thanks are extended to Peter van den Bossche – webmaster and database administrator, and Thor Erik Musæus – Deputy Chairman EVS 24 Stavanger Organizing Committee and all other good helpers.

All together – to do the overall design, the planning and the detailing of EVS 24, the 40th jubilee in the series, has been a huge operation. It has been a great pleasure working with so many dedicated people. Years of great teamwork is coming to an end. Memories are plenty. It has simply been a great time and a privilege to have been part of shaping EVS 24.

Please enjoy the EVS days in a spring dressed Norway, in the county of Rogaland, in the city of Stavanger.

Chairman of the Conference
ROBERT STÜSSI
AVERE/WEVA President

Chairman of the International Steering Committee
RØSTVIK HARALD N.
Chairman of the Stavanger Organising Committee

Chairman of the International Program Committee
JOERI VAN MIERLO
Vrije Universiteit Brussel
The International Battery, Hybrid and Fuel Cell Electric Vehicle Symposium
The International Electric Vehicle Symposium and Exposition (EVS) series, organized by the World Electric Vehicle Association (WEVA), is recognized as the premier event for academic, government and industry professionals involved in electric drive technologies.

The World Electric Vehicle Association unites the European Association for Battery, Hybrid and Fuelcell Electric Vehicles (AVERE), the Electric Drive Transportation Association (EDTA) and the Electric Vehicle Association of Asia Pacific (EVAAP).

The EVS series began in 1969 as an academic forum for global networking and the exchange of technical information. As electric drive technologies progressed from the classrooms and laboratories into the marketplace, EVS blossomed into an event both academic and business oriented.

Today, the EVS series is recognized as the global electric transportation industry’s premier and largest forum, showcasing all forms of technologies in the market place and on the drawing boards, from low speed battery electric vehicles to fuel cell electric buses. The event attracts academic, government and industry leaders from around the world who are interested in exploring and understanding the technical, policy and market challenges to a paradigm shift toward use of electric transportation technologies.

In the foyer you will find the WEWA meeting point, with information on the regional associations, the E Visionary awards, videos to see, to relax and meet.
History of the EVS Symposia

EVS-1 - November 1969 - Phoenix, Arizona, U.S.A.
EVS-2 - November 1971 - Atlantic City, New Jersey, U.S.A.
EVS-3 - February 1974 - Washington, D.C., U.S.A.
EVS-4 - September 1976 - Dusseldorf, Germany
EVS-6 - October 1981 - Baltimore, Maryland, U.S.A.
EVS-7 - June 1984 - Versailles, France
EVS-8 - October 1986 - Washington, D.C., U.S.A.
EVS-9 - November 1988 - Toronto, Ontario, Canada
EVS-10 - December 1990 - Hong Kong
EVS-11 - September 1992 - Florence, Italy
EVS-12 - December 1994 - Anaheim, California, U.S.A.
EVS-13 - October 1996 - Osaka, Japan
EVS-14 - December 1997 - Orlando, Florida, U.S.A.
EVS-15 - October 1998 - Brussels, Belgium
EVS-16 - October 1999 - Beijing, China
EVS-17 - October 2000 - Montréal, Québec, Canada
EVS-18 - October 2001 - Berlin, Germany
EVS-19 - October 2002 - Busan, South Korea
EVS-20 - November 2003 - Long Beach, California, U.S.A.
EVS-21 - April 2005 - Monaco
EVS-22 - October 2006 - Yokohama, Japan
EVS-23 - December 2007 - Anaheim, California, U.S.A
EVS-24 - May 2009 - Stavanger, Norway
EVS-25 - November 2010 - Shenzhen, China
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<td>Full Day Summit City Challenges, to achieve better places to live, work and travel</td>
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<td>Workshop The role of Hydrogen as Fuel for Road Transportation Room: Dyna</td>
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**13 MAY: ANCHOR AND MEDIA DAY**

Exhibition open 10.00 - 17.00 (from 09.00 for press) - Ride & Drive open 10.00 - 16.00
14 MAY: THE CONFERENCE

Exhibition open 10.00 - 17.45 (from 14.00 for the public) - Ride & Drive open 10.00 - 17.30

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<td>Boat trip to Lysefjorden &quot;The Pulpit&quot;</td>
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16 MAY: THE CONFERENCE

08.00 - 10.00
Passenger Cars

10.00 - 19.00
- Batteries & Energy Storage
- Fuel Cells
- Light and Other Vehicles
- Modelling & Simulation
- Public Promotion
- Room: Halten
- Room: iMi
- Room: Lindesnes
- Room: Lindesnes C
- Room: Dyna
- Room: Grip
- Room: Runde

Closing Plenary: Turning towards the East - Welcome to EVS25 in China!
PROGRAMME
SYMPOSIUM

13TH MAY FULL DAY SUMMIT
10.00-17.00 ROOM: HALTEN

THE SUMMIT IS SPONSORED BY
THE CITY OF STAVANGER

CITY CHALLENGES, TO ACHIEVE BETTER PLACES TO
LIVE, WORK AND TRAVEL

Each speaker will contribute brief ballpoint-like views at the end of each
presentation. These contributions will help shaping the “EVS24 Stavanger Message to
Copenhagen” that will be handed over in Copenhagen as input to
the Kyoto II process autumn 2009.

10.00-11.25: Setting the scene

EVS Welcome Robert Stussi, Conference Chairman / President World Electric
Vehicle Association

Moderators:
Andrew Scott, Professor Massachusetts Institute of Technology, USA.
Harald N. Røstvik, Architect, Chairman EVS24 International Steering
Committee

INTRODUCTION
Harald N. RØSTVIK,

THE MUNICIPALITY’S VIEW
Leif Johan SEVLAND, Mayor of Stavanger,

THE GOVERNMENT’S VIEW
Erik SOLHEIM, Minister of Environment & Development, Norway.

RUNNING OUT OF OIL?
Colin CAMPBELL, Association for the Study of Peak Oil, Ireland.

FORECASTS: CAN THEY BE TRUSTED?
Rudolf RECHSTEINER, Member of Swiss Parliament, Switzerland

DEBATE

11.25-11.40 Coffee Break

11.40-13.15: A range of solutions

Moderators:
Andrew Scott, Architect, Professor Massachusetts Institute of Technology, USA.
Harald N. Røstvik, Architect, Chairman EVS24 International Steering
Committee
### Adapting Cities for Climate Change?

Sue ROAF, Professor Heriot Watt University, Edinburgh UK

### Arcosanti, An Example?

Camilla MØRK RØSTVIK, Student, Art & Architecture History, University of Oslo, Norway

### Strategies for New & Old Cities

Andrew SCOTT, Professor, Massachusetts Institute of Technology, US

### Renewable Energy Issues: An Example

Thor Erik Musesæus, Rock Energy, Oslo, Norway

### The Role of Education

Marianne SKJULHAUG, Principal Bergen School of Architecture, Norway

### DEBATE

**Lunch 13.15 – 14.15**

**14.15-15.15: Buying power - Procurement**

**Moderators:**
- Jacques Mollard, AVERE Vice President and President AVERE-France, La Rochelle, FR

**The Role of the Consumer**

Chelsea SEXTON, Founder of Plug in America, LA, USA.

**The City Networks & Procurement**

Peter JOYCE, Global to Local, UK

**EV Procurement City Network**

Silvia GAGGI, ISIS, IT

**The Law Related to Procurement**

Ingrid Bjerke KOLDERUP, Lawyer, DIFI-Oslo, NO

### DEBATE

**15.15-15.35 Coffee Break**

**15.35-17.00: Shaping the “EVS24 Stavanger Message to Copenhagen”**

**Moderators:**
- Jacques Mollard, AVERE Vice President and President AVERE-France, La Rochelle, FR

**The Entrepreneur’s Contribution**

Patrick OLIVA, Michelin/Challenge Bibendum, Clermont-Ferrand, France

**The EC Contribution**

Hugues van HONACKER, DG for Energy and Transport

Maurizio MAGGIORE, DG Research

The message should be short & to the point, easy to understand and work as a roadmap to designing a sustainable future. What are the key issues? How can they be expressed? Can it be based on facts?

**TEXT PROPOSAL / DEBATE TO IMPROVE TEXT / CONCLUSIONS.**
13TH MAY 4 WORKSHOPS

THE ROLE OF HYDROGEN AS FUEL FOR ROAD TRANSPORTATION
09.00-17.45 - ROOM DYNA

Session 1: 09.00-12.30
Hydrogen - Fuelling the Car of the Future

Chairperson
Elisabeth B. OFSTAD, StatoilHydro, NO

WELCOME TO SESSION 1: “HYDROGEN - FUELLING THE CAR OF THE FUTURE”
Elisabeth B. OFSTAD, StatoilHydro, NO

OVERVIEW OF THE STEPS (SUSTAINABLE TRANSPORTATION ENERGY PATHWAYS) PROGRAMME
Joan OGDEN, UC Davis, US

TOWARDS A HYDROGEN ORIENTED ECONOMY IN EUROPE
Philippe VANNSON, European Fuel Cells & Hydrogen Joint Undertaking, BE

INTRODUCTION OF HYDROGEN IN THE NORWEGIAN ENERGY SYSTEM

OBJECTIVES AND KEY FINDINGS FROM THE NORWAYS PROJECT
Steffen MØLLER-HOLST, SINTEF, NO

NORWAYS’ APPROACH, MAIN ASSUMPTIONS AND METHODOLOGY
Ann Mari SVENSSON, SINTEF, NO

BUILDING A HYDROGEN INFRASTRUCTURE IN NORWAY & THE POTENTIAL FOR CO2 LEAN HYDROGEN EXPORT TO EUROPE
Christoph STILLER, Ludwig-Bölkow-Systemtechnik GmbH, DE

TECHNO-ECONOMIC ASSESSMENT OF INTRODUCTION OF HYDROGEN IN SELECTED REGIONS (OSLO, TELEMARK AND ROGALAND)
Kari ESPE-GRÉN, Institute for Energy Technology, NO

SUMMARY OF SESSION 1
Elisabeth B. OFSTAD, StatoilHydro, NO

Session 2: 13.30-17.45
Roles and responsibilities towards sustainable transportation

Chairperson
Marius HOLM, Bellona, NO

WELCOME TO SESSION 2: ROLES AND RESPONSIBILITIES TOWARDS SUSTAINABLE TRANSPORTATION
Marius HOLM, Bellona, NO

U.S. GOVERNMENT’S ROLE TOWARDS SUSTAINABLE TRANSPORTATION
Fred JOSECK, U.S. Department of Energy, US

INDUSTRIAL OPPORTUNITIES FOR HYDROGEN TECHNOLOGIES AND HYDROGEN IN THE FUEL MARKET
Ulf HAFSELD, StatoilHydro ASA, NO
SAFETY ASPECTS AND STAKEHOLDERS’ RESPONSIBILITIES
Gerd P. HAUGOM, DNV/ International Association for Hydrogen Safety
(HySafe) NO

TRANSNOVA’S RESPONSIBILITIES AND “TOOLBOX” TOWARDS ZERO EMISSION TRANSPORTATION
Eva SOLVI, Transnova, NO

NORWAY’S UNIQUE POSITION IN THE EUROPEAN FUTURE OF ZERO EMISSION TRANSPORT
Ulrich BÜNGER, NTNU/LBST, DE

FUEL CELL VEHICLES AS INTEGRAL PART OF THE ELECTRIFICATION OF THE AUTOMOBILE
Lars-Peter THIESEN, General Motors Europe, DE

ACTIONS NEEDED FOR NORWAY TO BECOME A KEY PLAYER IN A HYDROGEN-ORIENTED ECONOMY
Steffen MØLLER-HOLST, SINTEF, NO

IMPLICATIONS AND FUTURE PERSPECTIVES FROM THE NORWEGIAN GOVERNMENT
Liv S. NAVARSETE, Minister of Transportation and Communication, NO

PANEL DISCUSSION: ON THE ROLES OF GOVERNMENT, INDUSTRY AND ACADEMIA

PLUG-IN HYBRID ELECTRIC VEHICLES
09:00-13:00 - ROOM GRIP

09.00-10.00: Introduction

Chairperson: Keith Hardy, US DOE, Washington, US
Ted Bohn, Argonne National Laboratory, US

INTRODUCTION, OVERVIEW AND OBJECTIVES
Keith HARDY, US DOE, US

INTERNATIONAL PHEV INITIATIVES
Peter VAN DEN BOSSCHE, Erasmus University College Brussels, BE

THE VEHICLE-GRID SYSTEM: INTERFACES, ISSUES AND MYTHS
Ted BOHN, US

10.00-11.00:
Panel 1: Vehicle Technology and Initiatives

BATTERY DEVELOPMENT FOR PHEVS AND ARRA SOLLICITATION FOR BATTERY MANUFACTURING

PHEV DEMONSTRATION PROGRAM AND ARRA SOLICITATION FOR VEHICLE ELECTRIFICATION
Lee SLEZAK, US Department of Energy, US

NEAR-TERM CHALLENGES FOR MEDIUM DUTY/COMMERCIAL PHEVS
50-150 MPG IN THE SAME CAR?... STANDARD TEST PROCEDURES TO ACCURATELY CHARACTERIZE PHEVS
Michael DUOBA, Argonne, US

DISCUSSION - OPPORTUNITIES FOR CO-OPERATION
11.00-12.00:
Panel 2: Vehicle-Grid Interface

CONNECTING PHEVS TO THE GRID; ISSUES AND OPTIONS
Cyriacus BLEIJS, Electricité de France, FR

INDUSTRIAL INITIATIVES REGARDING VEHICLE-GRID CONNECTIVITY
Ingo DIENTENBACH, RWE, DE

EMINENT PHEV-SPECIFIC CODES AND STANDARDS
Ted BOHN, US

DISCUSSION - OPPORTUNITIES FOR CO-OPERATION

12.00-13.00
Panel 3: Preparing the Grid for Vehicle Electrification

WHAT IS SCE GOING TO PREPARE AND WHAT NEEDS TO BE DONE NOW?... BY UTILITIES, GRID OPERATORS AND GOVERNMENT
Dean TAYLOR, Southern California Edison, US

WILL THE NORDIC UTILITIES BE READY FOR PHEVS?
Joachim SKOOGBERG, Fortum, SE

WHO SHOULD CONTROL ‘SMART CHARGING’?
Johan SÖDERBOM, Vattenfall, SE

WHAT ABOUT CHARGING IN FRIGID CONDITIONS?
Robert GRANNSTROM, Test Site Sweden, SE

FAST OR SLOW CHARGING?
Charlie BOTSFORD, AeroVironment Inc., US

DISCUSSION - OPPORTUNITIES FOR CO-OPERATION

LITHIUM & OTHER BATTERY TECHNOLOGIES
14.00-16.30 - ROOM GRIP

Chairpersons:
Peter Van den Bossche, Erasmus University College Brussels, Anderlecht, BE;
Andrew Burke, University of California-Davis, Institute of Transportation Studies, Davis, US

THE DEVELOPMENT AND PERFORMANCE OF LITHIUM BATTERIES OF DIFFERENT CHEMISTRIES AND COMPARISONS WITH OTHER ADVANCED BATTERIES
Andrew BURKE, US

ADVANCED LITHIUM-ION BATTERY SYSTEMS FOR AUTOMOTIVE APPLICATIONS - A BRIEF HISTORY AND FUTURE
Hideaki HORIE, The University of Tokyo, JP

ASSESSING THE ADVANCED BATTERY: STANDARDIZATION AND EVALUATION CHALLENGES FOR BATTERY-ELECTRIC AND HYBRID-ELECTRIC BATTERIES
Peter VAN DEN BOSSCHE, BE
HARDWARE IN THE LOOP SIMULATION
14:00-16:30 - ROOM IMI

Chairperson:
Alain Bouscayrol, Université de Lille, FR

HARDWARE-IN-THE-LOOP SIMULATION
Alain BOUSCAYROL, FR

- SOFTWARE AND HARDWARE-IN-THE-LOOP (HIL) SIMULATION
- INTEREST OF HIL SIMULATION FOR VEHICLE APPLICATIONS
- SIGNAL AND POWER HIL SIMULATION
- FULL SCALE AND REDUCED SCALE HIL SIMULATION
- TECHNICAL REQUIREMENTS FOR HIL SIMULATION DEVELOPMENTS
- ORGANISATION OF A HIL SIMULATION
- EXAMPLES OF HARDWARE-IN-THE-LOOP SIMULATION
- SIGNAL HIL SIMULATION FOR TESTING ECU
- POWER HIL SIMULATION FOR TESTING POWER ELECTRONICS
- POWER HIL SIMULATION FOR TESTING ELECTRIC DRIVES
OPENING PLENARY SESSION

14TH MAY PROGRAM

08.45-16.15 - ROOM LINDESNES

OPENING PLENARY

The Opening Ceremony 08.30 - 09.20

OPENING
Robert Stüssi,
Conference Chairman, President World Electric Vehicle Association

THE CONFERENCE
Harald N. Røstvik,
Chairman EVS 24 International Steering and Organising Committee

OPENING ADDRESSES
Camilla Merk Røstvik,
Student

OPENING ADDRESSES
HSH Prince Albert II of Monaco

OPENING ADDRESSES
HRH Crown Prince Haakon Magnus of Norway

WELCOME TO THE REGION
Tom Tvedt,
Chairman County Council of Rogaland

The Visionary Messages 09.20-10.35

Chairperson:
Harald N. Røstvik,
Architect - Chairman EVS 24
International Steering Committee and Organizing Committee, Stavanger, NO

Speakers:
Hermann Scheer,
Member of Bundestag, Founder or World Council Renewable Energy and International Renewable Energy Agency, Germany.
THE ENERGY AUTONOMY OPTION, RENEWABLES, TIME FACTOR & POLITICS?
Amory Lovins, Chairman and Chief Scientist
Rocky Mountain Institute, USA.
PROFITABLE CLIMATE AND OIL SOLUTIONS.

The Music 10.35-10.40

Morten Harket, a-ha lead singer, LIVE

The Global, National, Local Players 10.45-11.45

Chairpersons:

Marco Piffaretti,
Protoscar SA, Rovio, CH

Thor Erik Musaeus,
Ceo Rock Energy AS - Deputy Chairman
EVS24 Stavanger Organizing Committee, Oslo, NO

Speakers:

Graham Smith,
Toyota Motor Europe, Belgium
Senior Vice President External Affairs
ELECTRICITY: POWERING A FUTURE WITH SUSTAINABLE MOBILITY

Richard Canny,
Think, Norway.
THE WAY FORWARD FOR THE EV INDUSTRY

Frank Weber,
GM/Opel, Germany.
THE NEW DNA OF THE AUTOMOBILE

Chelsea Sexton,
Plug in America, USA.
WHO SAVED THE ELECTRIC CAR?

The Exhibition Stroll - Lunch 12.00-13.30

Exhibition Hall
The Design of Carbon Neutral Cities 13.30-14.45

Chairperson:
Andrew Scott,
Architect, Professor Massachusetts Institute of Technology.

Colin Campbell,
ASPO, Ireland,
PEAK OIL, A TURNING POINT FOR MANKIND

Rudolf Rechsteiner.
Member of Swiss Parliament.
FORECASTING THE FUTURE ENERGY SCENE.

Stefan Behling,
Foster & Partners, Architects, London, UK.
ENERGY EFFICIENT & CARBON NEUTRAL CITY DESIGNS
IN NORTH AFRICA & THE MIDDLE EAST

Robin Haycock,
ARUP, London, UK.
TOWARDS THE ECOLOGICAL AGE OF CIVILIZATION.
DONGTAN ECO CITY, CHINA.

Talk with us: The Debate 15.00-16.15

Moderators:
Andrew Scott / Harald N. Restvik / Thor Erik Musæus

The Audience plus Scheer, Lovins, Behling, Sexton, Campbell, Smith
PLENARY SESSION

15TH MAY PROGRAM

16.00-17.30 - ROOM LINDESNES

SEVERAL ROADS TOWARDS ZERO EMISSION

Chairperson:
Urs Muntwyler
International Energy Agency- IA Hybrid & Electric Vehicles, Zollikofen, CH

Speakers:
Jørgen RANDERS ,
The Norwegian School of Management , NO
THE LOW EMISSION NORWAY PROJECT

Ólafur Ragnar GRIMSSON ,
President of Iceland , IS
ICELAND: A LABORATORY FOR GREEN DRIVING

Margot WALLSTRÖM ,
European Union Vice-President , SE
SMART GROWTH

DEBATE
CLOSING PLENARY SESSIONS

16TH MAY PROGRAM

10.00-13.00- ROOM LINDESNES

CLOSING PLENARY: TURNING TOWARDS THE EAST - WELCOME TO EVS25 IN CHINA!

10.15-11.20: Dialogue between East and West

Chairpersons:
Harald N. Røstvik, Architect - Chairman EVS 24
International Steering Committee and Organizing Committee, Stavanger, Norway
Jacques Mollard, AVERE Vice President and President AVERE-France, La Rochelle, FR
Sue ROAF, Professor Heriott Watt University, Edinburg, UK
ADAPTING TO CLIMATE CHANGE

Hans DE BOER, Better Place, Palo Alto California US
BETTER PLACE

Tom DE VLEESSCHAUWER, Global Insight, UK
EMERGING MARKETS
DIALOGUE

11.20-12.10: One case: India

Chairperson:
Thor Erik Musaeus, Deputy Chairman EVS24 Stavanger Organizing Committee, Norway
Odile SCHWARZ-HERION, Sustainable Development Consultant, Karlsruhe, Germany

Odile SCHWARZ-HERION
INTRODUCTION

AN OUTLOOK ON INDIA

Shanta CHATTERJI, Bombay, India
CITIES AND DEVELOPMENT

Chetan MAINI, Deputy Chairman & CTO REVA Electric BAngalore, India
INDUSTRY

DIALOGUE
12.10-12.35: Overview of EVS 24

Harald N. ROSTVIK  
Chairman EVS 24 International Steering Committee and Organizing Committee Norway

REVIEW OF EVS 24

- Video recap by Sigurður Einarsson showing the last days’ events

Joeri VAN MIERLO, Vrije Universiteit Brussel, Brussel &

Peter VAN DEN BOSSCHE, Erasmus University College Brussels

REVIEW OF THE LECTURE AND DIALOGUE SESSIONS

- EVS 24 best dialogue presentation award & best oral presentation award

Robert Stussi – EVS24 Chairman / President World Electric Vehicle Association, Portugal

EVS24 STAVANGER MESSAGE TO COPENHAGEN

12.30-12.55: Welcome to China

Chairpersons:

Robert Stüssi, EVS24 Chairman President World Electric Vehicle Association, Portugal

Pietro Menga, AVERE Vice President and President CIVES, Italy

C.C. CHAN, President Electric Vehicle Association of Asia Pacific, China

ELECTRIC AND HYBRID VEHICLE DEVELOPMENT IN CHINA

Duan RUICHUN, Deputy President, Chinese Electrotechnical Society, China

SUSTAINABLE MOBILITY REVOLUTION - TRANSPORTATION IN THE NEW CENTURY
12.55-13.05: Baton Ceremony - Welcome to EVS25 in China!

PRESIDENTS OF - AVERE - EVAAP - EDTA

Robert STÜSSI
CC CHAN
Brian WYNNE

Video
Sean Theiss Guitar

BATON CEREMONY SEQUENCE

Harald N. RØSTVIK,
Chairman EVS 24 International Steering Committee and
EVS 24 Organizing Committee

►

Robert STÜSSI
Conference Chairman
President of WEWA-World Electric Vehicle Association

►

CC CHAN
President Electric Vehicle Association of Asia Pacific

►

Ruichun DUAN, Deputy President of Chinese Electro technical Society
Yuwu FU, Deputy President of Society of Automotive Engineering - China- SAE-China
Qin XU, (Deputy Mayor of Shenzhen City which is the site of EVS-25).
Li CHUNHONG, Deputy Secretary-general of Guangdong Government
SESSION 1A: Passenger Cars

ROOM RUNDE

Chairpersons: Jan-Welm Biermann, ika - RWTH Aachen, DE; Urs N Schwegler, e'mobile, Fischingen, CH

Michael VALENTINE-URBSCHAT, Roland Berger Strategy Consultants, DE
POWERTRAIN 2020 – CHALLENGES AND OPPORTUNITIES FOR OEMS AND SUPPLIERS

Mikio KIZAKI, TOYOTA MOTOR CORPORATION, JP
DEVELOPMENT OF NEW TOYOTA FCHV-ADV

Christian MOHRDIECK, Daimler AG, DE
NEXT GENERATION FUEL CELL TECHNOLOGY FOR PASSENGER VEHICLES AND BUSES

Minoru MATSUNAGA, Honda R&D Co.,Ltd., JP
POWERTRAIN SYSTEM OF HONDA FCX CLARITY FUEL CELL VEHICLE

René H.E. VAN DOORN, AUDI AG, DE
THE NEW AUDI Q5 FUEL CELL

Richard CARLSON, Argonne National Lab, US; Martha CHRISTENSON, Environment-Canada, CA
INFLUENCE OF SUB-FREEZING CONDITIONS ON FUEL CONSUMPTION AND EMISSIONS ON TWO PLUG-IN HYBRID ELECTRIC VEHICLES

SESSION 1B: Batteries & Energy Storage

ROOM GRIP

Chairpersons: Mario Conte, ENEA, Roma, IT; CC Chan, President Electric Vehicle Association of Asia Pacific, HK

CURRENT STATUS OF D.O.E.-FUNDED R&D ON ENERGY STORAGE FOR AUTOMOTIVE APPLICATIONS

Sébastien MARTINET, CEA-LITEN, FR; Florence FUSALBA, CEA, FR
SAFE LI-ION TECHNOLOGY FOR MICRO AND MILD HYBRID APPLICATION BASED ON CEA BIPOLAR LIFEP04/LH4Ti5O12 TECHNOLOGY

Danilo SANTINI, Argonne National Laboratory, US
FACTORS DETERMINING THE MANUFACTURING COST OF LITHIUM-ION BATTERIES FOR PHEVS

Peter PICHLER, MAGNA STEYR Fahrzeugtechnik AG& Co KG, AT
LITHIUM-ION FOR HYBRID VEHICLES AND ELECTRIC VEHICLES: READY FOR MASS MARKET INTRODUCTION!? 

Anna TEYSSOT, Renault, FR
RESEARCH ROADMAPS AND HELIOS COLLABORATIVE PROJECT

Sankar DASGUPTA, Electrovaya, CA
LESSONS: ELECTROVAYA’S TECHNOLOGY ROADMAP & SYSTEM DESIGN
APPROACH TO LITHIUM ION SUPERPOLYMER® BATTERY SYSTEMS FOR TRANSPORTATION (FOCUS ON ITS TATA-MILJOBIL-ELECTROVAYA PASSENGER BEV)

SESSION 1C: Energy Supply & Infrastructures

ROOM DYNA

Chairpersons: Jorge Esteves, ERSE - Portuguese Energy Regulatory Authority, Lisboa, PT; Susanne Wegmann, Association e'mobile, Bern, CH

Arindam MAITRA, EPRI, US
GRID IMPACTS OF PLUG-IN HYBRID AND ELECTRIC VEHICLES - ANALYSIS OF PHEV LOADING CHARACTERISTICS ON HYDRO-QUEBEC’S DISTRIBUTION SYSTEM OPERATION

Cyriacus BLEIJS, Electricité de France, FR
LOW-COST CHARGING SYSTEMS WITH FULL COMMUNICATION CAPABILITY.

Ryan MCCARTHY, UC Davis, US
INTERACTIONS BETWEEN ELECTRIC-DRIVE VEHICLES AND THE POWER SECTOR IN CALIFORNIA

Kari ESPEGREN, Institute for Energy Technology, NO
PRODUCTION AND USE OF HYDROGEN REGIONAL ENERGY SYSTEMS ANALYSIS OF OSLO, TELEMARK AND ROGALAND

Edward KJAER, Southern California Edison, US
PLUGGING-IN TO OUR TRANSPORTATION FUTURE

Vinzenz HAERRI, Lucerne University of Applied Sciences & Arts HSLU T&A, CH
LIVING AND MOBILITY - BLUE ANGEL 3 WITH SAM FOR A DEMONSTRATION PLATFORM OF V2G

SESSION 1D: Introduction, Demonstration & Marketing

ROOM HALTEN

Chairpersons: Joeri de Ridder, Pouh bvba, Antwerpen, BE; Paulo Pereirinha, Polytechnic Institute of Coimbra (IPC-ISEC) Portugal, PT

Lin CHENG, Electric Vehicle Center of Engineering and Technology, Beijing Institute of Technology, CN
BATTERY ELECTRIC BUS APPLYING SYSTEM IN BEIJING OLYMPICS

Hans DRIEVER, TNO, NL
EARLY MARKET FOR ELECTRIC MOBILITY: POSSIBLE WIN-WIN FOR 3 MAJOR STAKEHOLDERS

Rob WINKEL, Ecofys Netherlands BV, NL
COST EFFECTIVE INTRODUCTION OF ELECTRIC VEHICLES

Diana BLAKE, Optimal Energy, ZA
JOULE - IMAGINEERING MOBILITY

Michael NICHOLAS, Institute of Transportation Studies, US
SURVEY OF THE IMPORTANCE OF INTERREGIONAL AVAILABILITY FOR ALTERNATIVE FUELS

Anna ROTA - BIADICI, infovel, CH
LADIES’ CHOICE FOR ELECTRIC CARS: A DIFFERENT MARKETING APPROACH
SESSION 1E: Propulsion Systems & Subsystems

ROOM LINDESNES C

Chairpersons: Arno Mathoy, BRUSA, CH; Yoichi Hori, University of Tokyo, Tokyo, JP

Shuichi HIRATA, Toyota Motor Corporation, JP
DEVELOPMENT OF POWER CONTROL UNIT (PCU) FOR MIDCLASS VEHICLE

David MILNER, Science Applications International Corporation (SAIC), US
POWER SYSTEM DESIGN AND OPTIMIZATION FOR TACTICAL WHEELED VEHICLES

Giovanni PEDDE, Italian National Agency for the Energy and the Environment, IT
ENEA HYBRID DRIVE TRAIN TESTING FACILITY: A VERSATILE INSTRUMENT FOR HIL (HARDWARE-IN-THE-LOOP) ASSISTED DESIGN

Dejun YIN, University of Tokyo, JP
A NOVEL TRACTION CONTROL WITHOUT CHASSIS VELOCITY FOR ELECTRIC VEHICLES

Bogdan FIJALKOWSKI, Cracow University of Technology, PL
ELECTRO-MECHANICAL DIFFERENTIALS FOR REDUCTION OF SELF-GENERATED WIND-UP TORQUES IN DBW AWD PROPULSION MECHATRONIC CONTROL SYSTEMS

Tom DE VLEESSCHAUWER, IHS Global Insight, UK
THE GREAT RACE: A FUTURE POWERTRAIN TECHNOLOGY OUTLOOK

SESSION 1F: Standardization & Regulation

ROOM IMI

Chairpersons: Giampiero Brusaglino, CEI-CIVES, IT; T.F. Chow, CLP, HK

Michael DUOBA, Argonne, US
CORRELATING DYNAMOMETER TESTING TO IN-USE FLEET RESULTS OF PLUG-IN HYBRID ELECTRIC VEHICLES

Tetsuya NIIKUNI, National Traffic Safety and Environment Laboratory, JP
AN EVALUATION OF THE DEGREE OF BATTERY DEGRADATION IN PLUG-IN HYBRID-ELECTRIC VEHICLES

Peter VAN DEN BOSSCHE, Erasmus University College Brussels, BE
THE CELL VERSUS THE SYSTEM: STANDARDIZATION CHALLENGES FOR ELECTRICITY STORAGE DEVICES

Bing-Ming LIN, Bing-Ming LIN
TEST METHOD AND TECHNIQUE OF SAFETY TEST FOR LIGHT ELECTRIC VEHICLE (LEV) BATTERY PACKS

Ken-ichi SHIMIZU, National Institute of Advanced Industrial Science and Technology, JP
FUEL CONSUMPTION TEST METHOD FOR HEVS - ERROR ESTIMATION AND TEST PROCEDURE FOR BETTER ACCURACY

Luiz Artur PECORELLI PERES, State University of Rio de Janeiro - UERJ, BR
TESTS PROCEDURES AND MEASUREMENTS FOR RECHARGE EVALUATION OF BATTERY ELECTRIC VEHICLES IN POWER CONCESSIONAIRES IN BRAZIL
FRIDAY, Mai 15, 10.20-12.20

SESSION 2A: Passenger Cars

ROOM RUNDE

Chairpersons: François Badin, IFP, Solaize, FR; C.M. Mak, CLP, HK

Hideaki YAGUCHI, Toyota Motor Corporation, JP
DEVELOPMENT OF A NEW HYBRID SYSTEM FOR COMPACT CLASS VEHICLES

Noelle JANIAUD, RENAULT S.A.S, FR
ELECTRIC VEHICLE POWERTRAIN ARCHITECTURE AND CONTROL GLOBAL OPTIMIZATION

Chetan MAINI, REVA Electric Car Co. Pvt., IN
DEVELOPMENT OF A NEXT GENERATION ELECTRIC CAR FOR WORLD MARKETS

Paulo PEREIRINHA, Polytechnic Institute of Coimbra (IPC-ISEC) Portugal, PT
ADVANCES IN THE ELECTRIC VEHICLE PROJECT-VEIL USED AS A MODULAR PLATFORM FOR RESEARCH AND EDUCATION

Marco PIFFARETTI, Protoscar SA, CH
LAMPO: DEVELOPMENTS OF PROTOSCAR’S HIGH PERFORMANCE BATTERY ELECTRIC VEHICLE AND EXPLANATION OF ITS UNIQUE EFFICIENCY FEATURES

Wolfgang KRIEGLER, Magna Steyr, AT
EV AND HYBRID DEVELOPMENTS AT MAGNA STEYR (SUBTITLE: WILL ALTERNATIVE POWERTRAINS BECOME A COMMERCIAL SUCCESS FOR OEM’S AND SUPPLIERS IN THE NEXT FUTURE?)

SESSION 2B: Batteries & Energy Storage

ROOM GRIP

Chairpersons: Florence Fusalba, CEA, FR; Hideaki Horie, The University of Tokyo, Kashiwa-city, JP

Peng BAI, State Key Laboratory of Automotive Safety and Energy, Tsinghua University, Beijing, P.R.China, CN
CAPACITY LOSS IN DIFFERENT CHARGE/DISCHARGE CYCLES OF LITHIUM ION BATTERIES

Andrew CHU, A123Systems, US
NANOPHOSPHATE TECHNOLOGY AS AN ENABLER FOR AUTOMOTIVE APPLICATIONS

Christian KUPER, Johnson Controls SAFT, DE
THERMAL MANAGEMENT OF HYBRID AND ELECTRIC VEHICLE BATTERY SYSTEMS

Andrew BURKE, university of California-Davis, Institute of Transportation Studies, US
PERFORMANCE CHARACTERISTICS OF LITHIUM-ION BATTERIES OF VARIOUS CHEMISTRIES FOR PLUG-IN HYBRID VEHICLES

Jochen GERSCHLER, ISEA RWTH Aachen University, DE
INVESTIGATION OF OPEN-CIRCUIT-VOLTAGE BEHAVIOUR OF LITHIUM-ION BATTERIES WITH VARIOUS CATHODE MATERIALS UNDER SPECIAL CONSIDERATION OF VOLTAGE EQUALISATION PHENOMENA

Hisashi TAKEDA, ASAHI-KASEI E-MATERIALS CORPORATION, JP
INORGANIC-BLENDED SEPARATOR FOR HIGH POWER HEV
SESSION 2C: Energy Supply & Infrastructures

ROOM DYN

Chairpersons: Cyriacus Bleijs, Electricité de France, FR; Serge Roy, Hydro-Québec, Montréal, CA

Charlie BOTSFORD, AeroVironment Inc., US
FAST CHARGING VS. SLOW CHARGING: PROS AND CONS FOR THE NEW AGE OF ELECTRIC VEHICLES

Gordon DOWER, The Ridek Corporation, US
INSTEAD OF PLUGGING IN FOR V2G

Loïc GAILLA, Southern California Edison, US; Edward KJAER, Southern California Edison, US
THE INTEGRATION OF PLUG-IN HYBRID AND ELECTRIC VEHICLE BASED RESIDENTIAL ENERGY STORAGE SYSTEMS AT SCE’S GARAGE OF THE FUTURE

Hatton CHANDLER, Delft University of Technology, NL
CHARGING STATIONS FOR URBAN SETTINGS: THE DESIGN OF A PRODUCT PLATFORM FOR ELECTRIC VEHICLE INFRASTRUCTURE IN DUTCH CITIES

Frauke HEIDER, Fraunhofer Institute for Solar Energy Systems, DE
VEHICLE TO GRID: REALIZATION OF POWER MANAGEMENT FOR THE OPTIMAL INTEGRATION OF PLUG-IN ELECTRIC VEHICLES INTO THE GRID

Jonn AXSEN, UC Davis, US
ANTICIPATING PHEV ENERGY IMPACTS IN CALIFORNIA

SESSION 2D: Introduction, Demonstration & Marketing

ROOM HALTEN


Lars OVERGAARD, Danish Technological Institute, DK
REFLECTIONS ON SYNERGIES BETWEEN THE INTRODUCTION OF BEV’S IN DENMARK AND THE DANISH ENERGY SYSTEM

Joachim SKOOGBERG, Fortum, SE
MOBILEL - DEMONSTRATION OF PLUG-IN VEHICLES IN STOCKHOLM (SWEDEN)

Asao UENODAI, Honda R&D Americas, Inc., US
ANALYSIS OF FUEL CELL VEHICLE CUSTOMER USAGE AND HYDROGEN REFUELING PATTERNS – COMPARISON OF PRIVATE AND FLEET CUSTOMERS

Anthony VERMIE, Public Works Rotterdam, NL; Monique BLOKPOEL, Eneco, NL
ROTTERDAM, CITY OF ELECTRIC TRANSPORT

Chris WALSH, Cenex, UK
ELECTRIC DRIVE VEHICLE DEPLOYMENT IN THE UK

Xiang ZHANG, Shanghai Haima Automobile R&D Co., LTD, CN
ANALYZING THE HYBRID ELECTRIC VEHICLE TECHNOLOGY IN CHINA
SESSION 2E: Modelling & Simulation

ROOM LINDESNES C

Chairpersons: Alain Bouscayrol, Université de Lille, FR; Zdenek Groh, TNO, NL

Pavan POTLURI, AVL Powertrain UK Ltd., UK
WHICH HYBRID POWERTRAIN WOULD BE SUITABLE FOR YOUR VEHICLE TO REDUCE CO2 EMISSIONS?

Ralf BARTHOLOMäUS, Fraunhofer IVI, DE
CONTROL-ORIENTED DYNAMIC LI-ION BATTERY MODELS FOR HIGH POWER APPLICATIONS

Sylvain PAGERIT, Argonne, US
EVALUATION OF PHEVS FUEL EFFICIENCY AND COST USING MONTE CARLO ANALYSIS

Ashley KELLS, Intelligent Energy Ltd, UK
SIMULATION OF A FUEL CELL HYBRID LONDON TAXI

Gregory PLETT, University of Colorado at Colorado Springs, US
SIMULATING BATTERY PACKS COMPRISING PARALLEL CELL MODULES AND SERIES CELL MODULES

Namwook KIM, Seoul National University, KR
OPTIMAL CONTROL OF A PLUG-IN HYBRID VEHICLE BASED ON DRIVING PATTERNS

SESSION 2F: Heavy Duty Vehicles

ROOM HALTEN

Chairpersons: Peter Van den Bossche, Erasmus University College Brussels, Anderlecht, BE; Mark Hairr, UT Chattanooga, Chattanooga, US

Uk-Don CHOI, HYUNDAI HEAVY INDUSTRIES CO., LTD., KR
DEVELOPMENT OF SERIES HYBRID ELECTRIC VEHICLE FOR LOW-FLOOR CITY TRANSIT BUS

Roger BEDELL, Opbrid Transporte Sostenible S.L., ES
A PRACTICAL, 70-90% ELECTRIC BUS WITHOUT OVERHEAD WIRES

Enrique LUQUE-ÁLÉMAN, Vossloh-Kiepe GmbH, DE
ZERO-EMISSION URBAN TRANSIT BUS

Dirk MEYER, EPT Eco Power Technology, CH
ELECTRIC, HYBRID AND HYDROGEN BUSES FOR PUBLIC TRANSPORT

Zdenek CEROVSKY, Czech Technical University in Prague, CZ
SILENT OPERATING RANGE OF MILITARY ELECTRIC HYBRID VEHICLE USING ELECTRIC POWER SPLITTER AND DIFFERENT ELECTRIC ENERGY STORAGE.

Arnold MILLER, Vehicle Projects LLC, US
LARGEST FUELCELL LAND VEHICLE: A HYBRID SHUNT LOCOMOTIVE FOR LOS ANGELES
SESSION 3A: Passenger Cars

ROOM RUNDE

Chairpersons: Joseph Beretta, PSA PEUGEOT CITROEN, PARIS, FR; Joeri Van Mierlo, Vrije Universiteit Brussel, Elsene, BE

Pierre LOING, Nissan in Europe, CH
NISSAN PUTS ZERO-EMISSION LEADERSHIP AT THE CENTER OF ITS GLOBAL PRODUCT STRATEGY

Mollestad EGIL, Think, NO
THINK CITY - BATTERY EXPERIENCES FROM SEVERAL MILLION KM OF REAL LIFE DRIVING

Petr KADUREK, IST, PT
SAO MIGUEL ISLAND AS A CASE STUDY ON A POSSIBLE USAGE OF ELECTRIC VEHICLE TO STORE ENERGY

Lu HUANG, A123 Systems, CA
DETERMINING PHEV PERFORMANCE POTENTIAL – USER AND ENVIRONMENTAL INFLUENCES ON A123 SYSTEMS’ HYMOTION™ PLUG-IN CONVERSION MODULE FOR THE TOYOTA PRIUS

K.C. LIM, Valence Technology, US
MEETING ELECTRICAL VEHICLES BATTERY DEMANDS

Fernando SMARGIASSE, ENEA, IT
HIGH EFFICIENCY-LOW COST POWERTRAIN FOR URBAN ELECTRIC VEHICLE.

SESSION 3B: Batteries & Energy Storage

ROOM GRIP

Chairpersons: James Miller, Argonne National Laboratory, Argonne, US; Härr Vinzenz, University of Applied Sciences of Central Switzerland, CH

Mario CONTE, ENEA, IT
IMPACT OF INNOVATIVE ILHYPOS SUPERCAPACITORS ON A FUEL CELL VEHICLE

Allan COOPER, European Advanced Lead Acid Battery Consortium, UK
ADVANCED LEAD-ACID BATTERIES - THE WAY FORWARD FOR LOW-COST MICRO AND MILD HYBRID VEHICLES

Patrick BRANT, ExxonMobil, BE
CONTINUED ADVANCEMENTS IN SEPARATOR TECHNOLOGY PERFORMANCE

Ulrik GRAPE, EnerDel, US
DESIGN & DEVELOPMENT OF A LARGE LI-ION BATTERY PACK FOR EVS

Ahmad PESARAN, National Renewable Energy Laboratory, US
INTEGRATION ISSUES OF CELLS INTO BATTERY PACKS FOR PLUG-IN AND HYBRID ELECTRIC VEHICLES

Geert VANDENSANDE, ON Semiconductor Belgium BVBA, BE
ELECTRONICS FOR LI-ION BATTERY PACKS IN ELECTRIC VEHICLES
SESSION 3C: Environmental Impacts & Life Cycle Analysis

ROOM DYNA

Chairpersons: Pietro Menga, AVERE Vice President and President CIVES, IT; Shigeyuki Minami, Osaka City University, Osaka, JP; Patricia BAPTISTA, IST - DTEA, PT; Gonçalo GONçALVES, Technical University of Lisbon, PT

Faycal-Siddikou BOUREIMA, Vrije Universiteit Brussel, BE

“COMPARATIVE LCA OF ELECTRIC, HYBRID, LPG AND GASOLINE CARS IN BELGIAN CONTEXT”

Raffaele DOMENICONI, infovel, CH

“ASSESSING THE ECOLOGICAL FOOTPRINT OF PERSONAL MOBILITY – A CASE STUDY ON THE BENEFITS GENERATED BY THE PROMOTION OF ELECTRIC VEHICLES IN CANTON TICINO - SWITZERLAND”

Åsgeir HELLAND, Think, NO

“CO2 WELL TO WHEEL ANALYSIS OF ELECTRIC AND ICE VEHICLES. – ARE GLOBAL CO2 EMISSION REDUCTIONS POSSIBLE?”

Nele SERGEANT, Vrije Universiteit Brussel, BE

“AN ENVIRONMENTAL ANALYSIS OF FCEV AND H2-ICE VEHICLES USING THE ECOSCORE METHODOLOGY”

Christoph STILLER, Ludwig-Bölkow-Systemtechnik GmbH, DE

“SUSTAINABILITY OF TRANSPORT FUELS”

SESSION 3D: Public Promotion

ROOM HALTEN

Chairpersons: Raoul Viora, Monaco Admin, MC; Brian Wynne, EDTA, US

Luminita ION, EIGSI, FR

“SITE SELECTION FOR ELECTRIC CARS OF A CAR-SHARING SERVICE”

Giampiero BRUSAGLINO, CEI-CIVES, IT

“NEW TECHNOLOGIES DEMONSTRATED AT FORMULA ELECTRIC AND HYBRID ITALY 2008”

Al CORMIER, Electric Mobility Canada, CA

“TECHNOLOGY ROAD MAP FOR ELECTRIC VEHICLES IN CANADA”

Dean TAYLOR, Southern California Edison, US

“The Differences and Similarities Between Plug-In Hybrid EVs and Battery EVs”

Elizabeth COUZINEAU-ZEGWAARD, Alliance Conseil, FR

“The Challenges of Electric Vehicles in Land Use Planning and Economic Development of Mountain Resorts: Decision Support for Sustainable Mobility”

Anibal T. DE ALMEIDA, University of Coimbra, PT

“Integration of Renewable Energies for Trolleybus and Mini-Bus Lines in Coimbra”
SESSION 3E: Propulsion Systems & Subsystems

ROOM LINDESNES C

Chairpersons: Uwe Schaefer, Technical University of Berlin, DE; Aymeric Rousseau, Argonne National Laboratory, Argonne, US

Theo HOFMAN, Eindhoven University of Technology, NL
DEVELOPMENT OF A MICRO-HYBRID SYSTEM FOR A THREE-WHEELED MOTOR TAXI

Kiyotaka KAWASHIMA, University of Tokyo, JP
ROLLING STABILITY CONTROL BASED ON ELECTRONIC STABILITY PROGRAM FOR IN-WHEEL-MOTOR ELECTRIC VEHICLE

Edo ANEKE, TNO Automotive, NL
HYBRID-ASSISTED DPF REGENERATION FOR HYBRID DISTRIBUTION TRUCKS

Michael LAMPERTH, Imperial College, UK
DUODRIVE – SIMPLE SERIES-PARALLEL HYBRID USING AXIAL FLUX TECHNOLOGY

Christian PRONOVOST, TM4 inc., CA
A RECONFIGURABLE SERIES-PARALLEL HYBRID POWERTRAIN FOR PLUG-IN VEHICLES

YI-HSUAN, ITRI, TW
NOVEL SYSTEM DESIGNS AND CONTROLLER DEVELOPMENT FOR A NEW-TYPE DUAL-HYBRID ELECTRIC VEHICLE

SESSION 3F: Global Approach & Cost Analysis

ROOM IMI

Chairpersons: Michael Valentine-Urbschat, Roland Berger Strategy Consultants, Munich, DE; Sven Thesen, Better Place, Palo Alto, US

Phil SHARER, US
COST BENEFIT ANALYSIS OF ADVANCED POWERTRAINS FROM -2010 TO 2045

Laurence TURCKSIN, Vrije Universiteit Brussel, BE
LIFE CYCLE COST ANALYSIS OF ALTERNATIVE VEHICLES AND FUELS IN BELGIUM

Maria GRAHN, Chalmers University of Technology, SE
THE ROLE OF ICEVS, HEVS, PHEVS, BEVS AND FCVS IN ACHIEVING STRINGENT CO2 TARGETS: RESULTS FROM GLOBAL ENERGY SYSTEMS MODELING.

Maximilian KLOESS, Vienna University of Technology, AT
TECHNICAL, ECOLOGICAL AND ECONOMIC ASSESSMENT OF ELECTRIFIED POWERTRAIN SYSTEMS FOR PASSENGER CARS IN A DYNAMIC CONTEXT (2010 TO 2050)

Peter MOCK, German Aerospace Center (DLR), DE
ELECTRIC VEHICLES – A MODEL BASED ASSESSMENT OF FUTURE MARKET PROSPECTS AND ENVIRONMENTAL IMPACTS

Xavier TACKOEN, Université Libre de Bruxelles, BE
ECONOMIC AND ENVIRONMENTAL BENEFITS OF SUPERCAPACITOR-BASED ENERGY STORAGE SOLUTIONS FOR THE BRUSSELS METRO NETWORK.
**SESSION 4A: Passenger Cars**

**ROOM RUNDE**

Chairpersons: Martijn Van Walwijk, IEA Implementing Agreement on Hybrid and Electric, FR; Ken-ichi Shimizu, National Institute of Advanced Industrial Science and Technology, Tsukuba, Ibaraki, JP

Akira TAKASAKI, Toyota motor corporation, JP
DEVELOPMENT OF NEW HYBRID TRANSMISSION FOR 2009 PRIUS

Patrick DEBAL, Punch Powertrain, BE
DEVELOPMENT OF A POST TRANSMISSION HYBRID POWERTRAIN

Jeffrey RONNING, Bright Automotive, US
DEVELOPMENT OF THE 100 MPG BRIGHT AUTOMOTIVE™ PLUG-IN HYBRID VEHICLE

Andreas SCHMIDHOFER, Magna Steyr Fahrzeugtechnik AG & CoKG, AT
POWER NET TOPOLOGIES FOR HEVS AND EVS - ASPECTS ON VEHICLE INTEGRATION FOR DIFFERENT POWERTRAIN CONFIGURATIONS ON SYSTEM AND COMPONENT LEVEL

John SMART, Idaho National Laboratory, US
U.S. DEPARTMENT OF ENERGY - ADVANCED VEHICLE TESTING ACTIVITY: PLUG-IN HYBRID ELECTRIC VEHICLE TESTING AND DEMONSTRATION ACTIVITIES

Joseph BERETTA, PSA PEUGEOT CITROEN, FR
THE PSA HYBRID HDI TECHNOLOGIES

**SESSION 4B: Batteries & Energy Storage**

**ROOM GRIP**

Chairpersons: Hamid Gualous, FEMTO-ST, Belfort, FR; Andrew Burke, university of California-Davis, Institute of Transportation Studies, Davis, US

François BADIN, IFP, FR
MODELING AGEING OF ON-BOARD ENERGY STORAGE SYSTEMS. THE FRENCH SIMSTOCK RESEARCH NETWORK

Takaaki ABE, NISSAN MOTOR CO., LTD., JP
RESEARCH AND DEVELOPMENT WORK ON LITHIUM-ION BATTERIES FOR ENVIRONMENTAL VEHICLES

Isao SUZUKI, GS Yuasa Corporation, JP
HIGH-PERFORMANCE ELECTRIC VEHICLE BATTERY WITH LITHIUM IRON PHOSPHATE AS POSITIVE ACTIVE MATERIAL

Bartek KRAS, Impact Automotive Technologies, PL
THERMAL MANAGEMENT OF LITHIUM-POLYMER BASED BATTERY PACK FOR URBAN BEV

Bavo VERBRUGGE, Erasmus University College Brussels, BE
MODELLING THE RESS: DESCRIBING ELECTRICAL PARAMETERS OF BATTERIES AND ELECTRIC DOUBLE-LAYER CAPACITORS THROUGH MEASUREMENTS

Chitradeep SEN, University of Windsor, CA
ANALYSIS OF A NOVEL BATTERY MODEL TO ILLUSTRATE THE INSTANTANEOUS VOLTAGE FOR A HYBRID ELECTRIC VEHICLE
SESSION 4C: Fuel Cells

ROOM DYNA


Christian MOHRDIECK, Daimler AG, DE; Juergen FRIEDRICH, Daimler AG, DE
STATUS REPORT: 150.000 KM AND 3000 OPERATING HOURS WITH A DAIMLER F-CELL VEHICLE

Jun TAKANO, Honda R&D Co., Ltd. Automobile R&D Center, JP
DEVELOPMENT OF HONDA FCX

Hengbing ZHAO, ITS - University of California - Davis, US
OPTIMUM PERFORMANCE OF DIRECT HYDROGEN HYBRID FUEL CELL VEHICLES

Jon Bjorn SKULASON, Icelandic New Energy, IS
THE SMART-H2 PROJECT: SUSTAINABLE MARINE AND ROAD TRANS-PORT, HYDROGEN IN ICELAND

HYDROGEN AND FUEL CELL TECHNOLOGIES AND THE TRANSITION TO HYDROGEN FOR TRANSPORTATION

Joerg WIND, Daimler AG, DE
EU PROJECT HYSYS: SYSTEM COMPONENTS FOR FUEL CELL HYBRID VEHICLES TRAINS

SESSION 4D: Public Promotion

ROOM GRIP

Chairpersons: Raffaele Domeniconi, infovel, Mendrisio, CH; Al Cormier, Electric Mobility Canada, Mississauga, CA

Sven THESEN, Better Place, US
THE BETTER PLACE PARADIGM: CREATING UNLIMITED ELECTRIC VEHICLE RANGE AND NEW DEMAND FOR RENEWABLE ENERGY

Narayan KAR, University of Windsor, CA
HYBRID ELECTRIC VEHICLES FOR SUSTAINABLE TRANSPORTATION: A CANADIAN PERSPECTIVE

James MILLER, Argonne National Laboratory, US
UNITED STATES DEPARTMENT OF ENERGY HYDROGEN FUEL CELL MARKET TRANSFORMATION STRATEGY

Bernhard EGGER, Austrian Agency for Alternative Propulsion System (A3PS), AT
WORLDWIDE PROMOTION AND DEPLOYMENT OF FUEL CELL VEHICLES

Urs MUNTWYLER, IEA IA Hybrid & Electric Vehicles, CH
THE FUTURE OF THE TRANSPORTATION IS ELECTRIC AND CAN BE SOLAR!

Fritz KALHAMMER, Kalhammer Electrochemical and Energy Technology, US
PLUG-IN HYBRID ELECTRIC VEHICLES: PROMISE, ISSUES AND PROSPECTS
SESSION 4E: Modelling & Simulation

ROOM LINDESNES C

Chairpersons: Aníbal T. De Almeida, University of Coimbra, PT; J. Ronald Bailey, UT Chattanooga, Chattanooga, US

Yuhua CHANG , Warsaw University of Technology , PL

HYBRID DRIVES DESIGN FOR MINIBUS BY SIMULATION

Niklas HARTMANN , IER - University of Stuttgart , DE

MODELLING THE PLUG-IN AVAILABILITY AND CALCULATION OF ENERGY STORAGE POTENTIAL OF ELECTRIC VEHICLES IN GERMANY

Filipe SOARES , INESC Porto , PT

SMART CHARGING STRATEGIES FOR ELECTRIC VEHICLES: ENHANCING GRID PERFORMANCE AND MAXIMIZING THE USE OF VARIABLE RENEWABLE ENERGY RESOURCES

Aymeric ROUSSEAU , Argonne National Laboratory , US

IMPACT OF REAL WORLD DRIVE CYCLES ON PHEV FUEL EFFICIENCY AND COST FOR DIFFERENT POWERTRAIN AND BATTERY CHARACTERISTICS

Edwin TAZELAAR , HAN University , NL

DRIVING CYCLE CHARACTERIZATION AND GENERATION FOR DESIGN AND CONTROL OF FUEL CELL BUSES

Adam SZCZEPANEK , Aerovironment , US

INTEGRATED SOLUTION FOR ELECTRIC VEHICLE INFRASTRUCTURE DEVELOPMENT: AN ENABLER FOR ELECTRIC VEHICLE ADOPTION

SESSION 4F: Light and Other Vehicles

ROOM IMI

Chairpersons: Álvaro Aghili, AVELE - Spanish Association for the Promotion of Electric Vehicles, ES; Naveen Munjal, Hero electric, New Delhi, IN

Urs N SCHWEGLER , e'mobile , CH

ELECTRIC SCOOTERS: TECHNOLOGIES AND MARKETS

Jean-Marc TIMMERMANS , Vrije Universiteit Brussel , BE

A COMPARATIVE STUDY OF 12 ELECTRICALLY ASSISTED BICYCLES

Rolf WIDMER , EMPA , CH

DEVELOPING A SIMPLE TEST METHOD TO COMPARE THE MILEAGE OF E-SCOOTERS

Ralph CLAGUE , Imperial College London , UK

FUEL CELL VEHICLE RACING - IMPERIAL COLLEGE LONDON PRESENTS THE RACING GREEN TEAM

Makoto SHIMIZU , Nippon Chemi-Con Corp. , JP

DEVELOPMENT OF POWER CAPACITORS FOR NEW MODEL BATTERY FORKLIFT

Jet P.H. SHU , Taiwan Automotive Research Consortium , TW

OVERVIEW OF THE TAIWAN LEV NATIONAL PROGRAM
SESSION D1: Dialogue Session

Forum plaza

Chairpersons:
Joeri Van Mierlo, Vrije Universiteit Brussel, Elsene, BE;
Peter Van den Bossche, Erasmus University College Brussels, Anderlecht, BE

A-1. Public Transport & Heavy Duty Vehicles

Lee SANGHUN, DAEGU MACHINERY INSTITUTE OF COMPONENTS & MATERIALS, KR
THE HIGH RESPONSE AND PRECISION CONTROL OF ETC MODULE WITHOUT THE HALL POSITION SENSOR FOR DETECTING ROTOR POSITION OF BLDC MOTOR

Mark HAIRR, UT Chattanooga, US
DATA ACQUISITION SYSTEM FOR ELECTRIC- AND HYBRID-ELECTRIC BUSES

Lin CHENG, Electric Vehicle Center of Engineering and Technology, Beijing Institute of Technology, CN
STUDY ON INTELLIGENT CONTROL SYSTEM OF PURE ELECTRIC BUS BASED ON THE FUZZY DECISION THEORY

Andrew MCGORDON, University of Warwick, UK
THE APPLICATION OF HYBRID TECHNOLOGY TO RAIL VEHICLES: A COMPARISON OF INTERCITY AND SUBURBAN COMMUTER ROUTES

Wang ZHEN PO, Beijing Institute of Technology, CN
STUDY ON OPERATION SYSTEM OF PURE ELECTRIC BUS

Wang ZHEN PO, Beijing Institute of Technology, CN
A STATISTICAL SURVEY AND ANALYSIS OF HEV FUEL CONSUMPTION ON BEIJING OLYMPIC BUS LINE

Qiu BIN, Department of Automotive Engineering, Tsinghua University, CN
A STUDY ON ENERGY EFFICIENCY OF FUEL CELL BUS UNDER TRANSIT CYCLE

Shaoyou SHI, Beijing Automotive Technology Center, CN
RESEARCH OF FULL HYBRID ELECTRICAL VEHICLE

Guido BOOSTEN, DuraCar Holding B.V. (QUICC!), NL
THE BEST WAY TO PREDICT THE FUTURE IS TO INVENT IT!

Arthur LIU, Beijing Dianba Technology Ltd, CN
A RENOVATE SOLUTION FOR ELECTRIC PUBLIC TRANSIT

Ricardo BARRERO, Vrije Universiteit Brussel, BE
HYBRID BUSES: DEFINING THE POWER FLOW MANAGEMENT STRATEGY AND ENERGY STORAGE SYSTEM NEEDS

Cheng LIN, Beijing Institute of Technology, CN
KEY TECHNOLOGIES USED IN OLYMPIC ELECTRIC BUS
A-2. Passenger Cars

Felix TOEPLER, ika - Institut fuer Kraftfahrzeuge RWTH Aachen University, DE; Jan-Welm BIERMANN, ika - RWTH Aachen, DE
SUBCOMPACT FULL HYBRID VEHICLE WITH AN ADVANCED ADAPTIVE CRUISE CONTROL

Francis ROY, PSA Peugeot Citroën, FR
FISYPAC PROJECT : THE FIRST VEHICLE INTEGRATION OF GENEPAC FUEL CELL STACK

Doug NELSON, Virginia Tech, US
ECOCAR DESIGN AND DEVELOPMENT PROCESS FOR A PLUG-IN E85 SPLIT PARALLEL ARCHITECTURE HYBRID ELECTRIC VEHICLE

Yang WEIBIN, Department of Automobile Engineering, Tsinghua University, CN
THE DEVELOPMENT OF A BATTERY ELECTRIC CAR

Jia WANG, SHANGHAI HAIMA AUTOMOBILE R&D, CN
THE DEVELOPMENT OF HYBRID VEHICLE DRIVEN BY POWER BATTERY AND ULTRA-CAPACITOR

Federico RESMINI, MES-DEA SA, CH
ZEBRA®BATTERY INTEGRATION IN “TH!NK CITY” PURE BATTERY ELECTRIC VEHICLE

Shaoyou SHI, Beijing Automotive Technology Center, CN
RESEARCH OF FULL HYBRID ELECTRICAL VEHICLE

YONG SEOK KIM, Hyundai Motor Company, KR
DEVELOPMENT OF LPI HYBRID ELECTRIC VEHICLES - FROM MILD TO FULL HYBRIDS

Yong-gi KIM, hyundai motor company, KR
DEVELOPMENT OF OPTIMAL CONTROL STRATEGY FOR HYBRID ELECTRIC VEHICLE USING DYNAMIC PROGRAMMING AND FUEL EQUIVALENT FACTOR

Shaoyou SHI, Beijing Automotive Technology Center, CN
RESEARCH OF ADVANCED FULL HYBRID

Beomsoo KIM, Seoul National University, KR
HEV CRUISE CONTROL STRATEGY ON GPS (NAVIGATION) INFORMATION

Soheil ANNIAR, Purdue University Indianapolis, US
PLUG-IN HYBRID ELECTRIC VEHICLE ENERGY MANAGEMENT SYSTEM USING PARTICLE SWARM OPTIMIZATION

Leone MARTELLUCCI, Polo per la Mobilità Sostenibile della Regione Lazio, IT
URB-E: ENEA PROJECT FOR A LOW CONSUMPTION URBAN VEHICLE

Gao JINWEN, Tsinghua University, CN
NEW CONTROL STRATEGY FOR EVT HEV

Danut Gabriel MARINESCU, University of Pitesti, RO
ECO HUV- ECOLOGICAL HYBRID UTILITY VEHICLE

Karsten MUELLER, IAV GmbH, DE
TECHNOLOGICAL ASPECTS OF AN ELECTRICAL VEHICLE POWERTRAIN

Evert GEURTSEN, EV Stores, UK
ALL ELECTRIC CARS ARE NOT THE SAME AND WHY THE CALL FOR ‘REAL’ ELECTRIC CARS SHOULD BE RESISTED
A-3. Recreation & Light Vehicles, including for disabled persons

Luo YUGONG , Tsinghua university , CN
THE HIERARCHY CONTROL SYSTEM OF INTELLIGENT HYBRID ELECTRIC VEHICLE

Ichiro AOSHIMA , PUES Corporation , JP
DEVELOPMENT OF ELECTRIC SCOOTER DRIVEN BY SENSORLESS MOTOR USING D-STATE-OBSERVER

Li CHENG-HO , ITRI , TW
STABILITY CONTROL OF LIGHT ELECTRIC VEHICLE WITH ACTIVE-TILTING AND ANTI-SKID SYSTEMS

Jan CAPPELLE , KaHo Sint-Lieven , BE
DESIGN OF AN E-BIKE WITH ULTRACAPS AS THE ONLY ENERGY SOURCE AND WITH REGENERATIVE BRAKING

Giuseppe BUJA , University of Padova , IT
ENERGY DESIGN OF A FUEL CELL SUPPLY SYSTEM FOR ELECTRIC CYCLE

Toshio IIJIMA , Tokai University , JP
DEVELOPMENT AND PERFORMANCE OF AN ELECTRIC TRIKE WITH IN-WHEEL MOTORS

A-4. Non-Road & Industrial

Martin BAIER , RWTH Aachen University , DE
ENERGETIC AND OPERATIONAL USE OF FLEXCARGORAIL FREIGHT WAGONS IN THE SINGLE WAGON LOAD TRAFFIC

Jukka HALME , Helsinki University of Technology , FI
POWER BUS CONTROL FOR SERIES HYBRID HEAVY-DUTY VEHICLES

Daheung LEE , Seoul National Univ. , KR
FUEL CONSUMPTION ANALYSIS OF HYBRID EXCAVATOR USING ELECTRIC SWING MOTOR

Panu SAINIO , Helsinki university of technology , FI
COMPARISON OF PACKAGING HYDRAULIC AND ELECTRIC COMPONENTS IN A HEV POWER LINE

Teemu LEHMUSPELTO , Helsinki University of Technology , FI
HYBRIDIZATION OF A MOBILE WORK MACHINE

Frederik VAN MULDERS , Erasmus University College Brussels , BE
SUPERCAPACITOR ENHANCED ELECTRIC POWER SYSTEMS FOR PERSONNEL TRANSPORT SYSTEMS

A-5. Waterborne Transportation

Pritpal SINGH , Villanova University , US
OPTIMIZATION OF HYDROGEN STORAGE/GENERATION FOR A HYBRID BATTERY/FUEL CELL POWERED UNMANNED SURFACE VEHICLE

Jean-Louis AUCOUTURIER , AFBE , FR
PLEASURE BOATS : A FUTURE FOR PLUGABLE HYBRIDS

Nuno FONSECA , Technical University of Lisbon , PT
THE HIDROCAT PROJECT – AN ALL ELECTRIC SHIP WITH PHOTOVOLTAIC PANELS AND HYDROGEN FUEL CELLS

A-7. Other Vehicles or Transport Systems

Anne-Laure ALLÈGRE , Laboratory of electrotechnology and power electronics , FR
POSSIBILITIES OF REDUCTION THE ON-BOARD ENERGY FOR AN INNOVATIVE SUBWAY

Li CHENG-HO , ITRI , TW
TILTING MOTION CONTROL OF NARROW TILTING VEHICLES
Joerg WEIGL , Fuel Cell Vehicle Team , MY
WITH A FUEL CELL MOTORCYCLE AROUND THE WORLD

B-5. Modelling and Simulation

Jochen LINDENMAIER , University Ulm , DE
CHARGE/DISCHARGE LOAD REDUCTION OF LEAD ACID BATTERIES IN MICRO-HYBRID VEHICLES USING ADDITIONAL ULTRA-CAPACITOR ASSISTANCE

Markus STIEGELER , University of Ulm , DE
THE FUEL SAVING POTENTIAL OF LONG-TERM SOC-PREDICTION DEMONSTRATED ON TWO DIFFERENT OPERATIONAL STRATEGIES FOR PARALLEL HYBRID DRIVETRAINS

Olivier TREMBLAY , ETS , CA
EXPERIMENTAL VALIDATION OF A BATTERY DYNAMIC MODEL FOR EV APPLICATIONS

Tao SUN , Hanyang University , KR
PARAMETER PREDICTION AND MODELING METHODS FOR TRACTION MOTOR OF HYBRID ELECTRIC VEHICLE

Junzhi ZHANG , Tsinghua University , CN
INTEGRATED CONTROL OF ANTI-LOCK BRAKING WITH REGENERATIVE BRAKING

Sten KARLSSON , physical resource theory , SE
OPTIMAL SIZE OF PHEV BATTERIES FROM A CONSUMER PERSPECTIVE – ESTIMATION USING CAR MOVEMENT DATA AND IMPLICATIONS FOR DATA HARVESTING

Alexandre DUPARCHY , IFP , FR
HEAT RECOVERY FOR NEXT GENERATION OF HYBRID VEHICLES: SIMULATION AND DESIGN OF A RANKINE CYCLE SYSTEM

WEI XUEZHE , Tongji University , CN
A DYNAMIC OHMIC RESISTANCE ESTIMATOR OF PEMFC BASED ON DUAL EXTENDED KALMAN FILTER

Hyunch Kim , sekku , KR
EVALUATION OF CONTROL SYSTEM ABOUT MODE CHANGE CLUTCH FOR HEV BY USING EMBEDDED SYSTEM

Xiaomin PU , Chinese Academy of Science , CN
OPTIMIZATION AND MATCHING OF COMPONENTS IN HEV

Woodlyn MADDEN , UT Chattanooga , US
TOPOGRAPHICAL INERTIAL ENERGY SIMULATOR FOR HYBRID ELECTRIC TRANSIT VEHICLES

Chen XIAOKAI , EV Center of Engineering and Technology, Beijing Institute of Technology , CN
AN OPTIMIZATION APPROACH TO HYBRID ELECTRIC VEHICLE PRELIMINARY DESIGN

Antti LEIVO , Helsinki University of Technology , FI
MODEL REUSABILITY AND COOPERATION IN MODEL BASED HEV CONTROL SYSTEM DEVELOPMENT

Piotr HOLIK , University of Strathclyde , UK
DYNAMIC BATTERY MODEL FOR VEHICLE TO GRID APPRAISAL

Theo HOFMAN , Eindhoven University of Technology , NL
A COMPARATIVE STUDY AND ANALYSIS OF AN OPTIMIZED CONTROL STRATEGY FOR THE TOYOTA HYBRID SYSTEM

Chinhoon JO , Sungkyunkwan University , KR
IMPROVEMENT OF SHIFT QUALITY FOR AUTOMATIC TRANSMISSION BASED 2-SHAFT PARALLEL HYBRID ELECTRIC VEHICLE BY MOTOR CONTROL
Taeho PARK, Hanyang University, KR
POWERTRAIN MODELING FOR ANALYZING THE TRANSIENT RESPONSE OF THE PARALLEL HEV

Lee JEONG-JONG, Hanyang University, KR
EQUIVALENT CIRCUIT ANALYSIS OF INTERIOR PERMANENT MAGNET SYNCHRONOUS MOTOR CONSIDERING MAGNETIC SATURATION

Jeongmin KIM, Sungkyunkwan University, KR
POWER CHARACTERISTICS FOR POWER SPLIT TYPE HEV SYSTEM

Patricia BAPTISTA, IST - DTEA, PT; Gonçalo GONçALVES, Technical University of Lisbon, PT
EQUIVALENT CIRCUIT ANALYSIS OF INTERIOR PERMANENT MAGNET SYNCHRONOUS MOTOR CONSIDERING MAGNETIC SATURATION

Mario SCHWEIGER, AVL List GmbH, AT
SUPER CAP BATTERY SIMULATION FOR REAL TIME APPLICATIONS BASED ON MODEL REDUCTION USING BALANCED TRUNCATION

Dietmar WINKLER, Technische Universität Berlin, DE
SIMULATION OF ELECTRIC DRIVE SYSTEM FAULTS IN HYBRID ELECTRIC VEHICLES

J. Ronald BAILEY, UT Chattanooga, US
USING TOPOGRAPHICAL AND STATE OF CHARGE INFORMATION TO PREDICT ACTUAL RANGE OF ELECTRIC VEHICLES

Ralf BENDER, Institute of electrical power engineering, DE
ELECTROCHEMICAL AND THERMAL MODELING OF LITHIUM-ION CELLS FOR USE IN HEV OR EV APPLICATION MODELING INSTEAD OF MODELING

Simon SCHWUNK, Fraunhofer ISE, DE
BATTERY ELECTRIC VEHICLES IN LOW VOLTAGE GRIDS – MODELLING AND SIMULATION OF BATTERIES WITHIN THE SYSTEM

Vito DI GIACOMO, Polo per la mobilità sostenibile Regione Lazio, IT
MODELING HYBRID PROPULSION SYSTEM WITH GT POWER AND MATLAB_SIMULINK

Bryan FRANK, University of Manchester, UK
A HIL COMPARISON OF ENERGY MANAGEMENT STRATEGIES FOR LOW COST SUPERCAPACITOR HYBRID VEHICLES

Juan Jose VALERA, TECNALIA, ES
INTEGRATED MODELLING APPROACH FOR HIGHLY ELECTRIFIED HEV. VIRTUAL DESIGN AND SIMULATION METHODOLOGY FOR ADVANCED POWERTRAIN PROTOTYPING

Nigel SCHOFIELD, University of Manchester, UK
MULTIPLE BATTERY SYSTEMS FOR ELECTRIC VEHICLES.

Ahmad PESARAN, National Renewable Energy Laboratory, US
IMPROVING PETROLEUM DISPLACEMENT POTENTIAL OF PHEVS USING ENHANCED CHARGING SCENARIOS

Ali Milad JARUSHI, University of Manchester, UK
MODELLING AND ANALYSIS OF ENERGY SOURCE COMBINATIONS FOR ELECTRIC VEHICLES.

Shigeyuki MINAMI, Osaka City University, JP
AN ANALYTICAL METHOD TO OBTAIN EV VELOCITY PROFILES FROM THE POWER CONSUMPTION

Hans BOSMA, HAN University, NL
SIMULATION OF THE PEM FUEL CELL HYBRID POWER TRAIN OF AN AUTOMATED GUIDED VEHICLE AND COMPARISON WITH EXPERIMENTAL RESULTS

Yu-seok JEONG, Myongji University, KR
MODELING AND SIMULATION OF ELECTRIC DRIVE SYSTEM FOR A HYBRID ELECTRIC COMBAT VEHICLE
David MILNER, Science Applications International Corporation (SAIC), US
MODELING AND SIMULATION OF AN AUTONOMOUS HYBRID-ELECTRIC MILITARY VEHICLE

Chul-Ho KIM, Seoul National University of Technology, KR
ANALYTICAL STUDY ON THE PERFORMANCE ANALYSIS OF POWER TRAIN SYSTEM OF AN ELECTRIC VEHICLE

**D-1. Environmental Impacts and Life Cycle Analysis**

Yusuke WADA, Waseda University, JP
ENVIRONMENTAL PERFORMANCE EVALUATION OF PLUG-IN HYBRID ELECTRIC VEHICLES

Ann Mari SVENSSON, SINTEF, NO
QUANTITATIVE ASSESSMENT OF OPTIONS FOR SIGNIFICANT REDUCTION OF GHG EMISSIONS FROM ROAD TRANSPORT IN NORWAY

Julien MATHEYS, Vrije Universiteit Brussel, BE
POTENTIAL REDUCTIONS OF CO2 EMISSIONS DUE TO THE LANDSIDE ACCESSIBILITY OF BRUSSELS AIRPORT THROUGH ADAPTED POLICY MEASURES AND USE OF ELECTRIC VEHICLES

**D-2. Energy Efficiency & Energy Security**

Lisa Göransson, Chalmers University of Technology, SE
PLUG-IN HYBRID ELECTRIC VEHICLES AS A MEAN TO REDUCE CO2 EMISSIONS FROM ELECTRICITY PRODUCTION

Thijs VAN KEULEN, Eindhoven University of Technology, NL
PREDICTIVE CRUISE CONTROL IN HYBRID ELECTRIC VEHICLES

Lina HARRIOT, VirgoStar Solar, US
SOLAR ENERGY GENERATED ELECTRICITY – IS IT POSSIBLE TO ACHIEVE GRID PARITY WITH CURRENT FOSSIL FUEL BASED ENERGY SYSTEMS?

Marco MUFFATO, Università di Padova, Oxygen, IT
AN INVESTIGATION ON THE PRIMARY ENERGY CONSUMPTION AND THE ENERGY EFFICIENCY OF THE ELECTRIC CARGOSCOOTER

**D-3. Electromagnetic Compatibility (EMC), Health and Security**

Soonyong LEE, Hanyang University, KR
RESEARCH OF EMC MANAGEMENT PLAN OPTIMIZED FOR FUEL CELL ELECTRIC VEHICLES (FCEV)

Bong-yi LEE, LS cable, KR
A NEW EMI TEST METHOD OF POWER HARNESS USED FOR HEV/FCEV: PHS A

**E-1. Introduction & Demonstration**

Alexandre BEAUDET, Imperial College London, UK
ECONOMIC AND POLICY ASSESSMENT OF ELECTRIC AND HYDROGEN VEHICLES AS COMPETING OPTIONS FOR THE DECARBONISATION OF TRANSPORT

Carel SNYMAN, BSE Warehouse, ZA
2010 GREEN TRANSPORT DEMONSTRATION PROJECT OF THE DEPARTMENT OF SCIENCE AND TECHNOLOGY, SOUTH AFRICA

Ingo BUNZECK, Energy Research Centre of the Netherlands, NL
FACILITATING THE INTRODUCTION OF HYDROGEN VEHICLES: POSSIBLE OPTIONS TO CLOSE THE COST GAP THROUGH POLICY SUPPORT

**E-2. Marketing & Market Research**

Christophe PILLOT, AVICENNE, FR
THE HEV MARKET 2008-2015 - IMPACT ON THE BATTERY BUSINESS.

Yuki KUDOH, National Institute of Advanced Industrial Science and Technology, JP
JAPANESE CONSUMERS’ ACCEPTABILITY FOR ELECTRIC VEHICLES
SMALL AND LIGHT ELECTRIC VEHICLES - A BLIMP ON THE MAP OR A SMALL REVOLUTION?

Gerfried CEBRAT , Austrian Mobility Research , AT
METHODS TO DETERMINE ROBUST INNOVATION PATHS FOR ELECTRIC VEHICLE TECHNOLOGY

Timothy MOORIN , DHL Neutral Services , UK
A REVIEW OF THE SMART EV AND AN ANALYSIS OF THE REQUIRED DEVELOPMENTS IN BATTERY ELECTRIC VEHICLES IN ORDER TO ACHIEVE MARKET SUCCESS

Felix KRAMER , CalCars.org , US
CASH FOR CLUNKERS PAVES THE WAY TO RETROFIT GAS GUZZLERS

Training & Job Creation

Zachariah CHAMBERS , Rose-Hulman Institute of Technology , US
USE OF ADVANCED VEHICLE TECHNOLOGY COMPETITIONS TO ENGAGE, EDUCATE, AND RETAIN COLLEGIATE STUDENTS IN THE HYBRID VEHICLE FIELD

Panagiotis ASIMAKOPOULOS , University of Patras - Department of Electrical & Computer Engineering , GR ; Efstathios PATSIAS , University of Patras , GR
CONVERSION OF A CONVENTIONAL VEHICLE TO A HYBRID ELECTRIC VEHICLE – STEP BY STEP DESIGN AND EXPERIMENTAL INVESTIGATION

Public Education and Promotion

Chie WATANABE , Japan Automobile Research Institute , JP
OUTREACH ACTIVITIES ON JHFC 2

Oluf LANGHELLE , University of Stavanger , NO
ACCEPTABILITY OF ENVIRONMENTALLY FRIENDLY VEHICLES. A CASE STUDY FROM THE STAVANGER REGION, NORWAY.

Kjeld NØRREGAARD , Danish Technological Institute , DK
NORDIC KNOWLEDGE NETWORK FOR ELECTRIC TRANSPORT

Marc BORREMANS , Erasmus University College Brussels , BE
THE ELECTRIC ENDEAVOUR: ENGINEERING FORMATION THROUGH SYNECTRIC ELECTRIC RACE CAR DEVELOPMENT

Specific Fleet Applications and Management

Jean-Marie BOUSSIER , EIGSI , FR
GOODS DISTRIBUTION WITH ELECTRIC VANS IN CITIES: TOWARDS AN AGENT-BASED SIMULATION

Public Policies and Programmes (International, National and Local)

Shiow-Huey SUEN , Industrial Technology Research Institute (ITRI) , TW
PROMOTION STRATEGY OF ELECTRIC SCOOTERS IN TAIWAN

Sjoerd BAKKER , Utrecht University , NL
FUELLING OR CHARGING EXPECTATIONS? A HISTORICAL ANALYSIS OF HYDROGEN AND ELECTRIC VEHICLE PROTOTYPES

Heinrich KLINGENBERG , hySOLUTIONS , DE
HYDROGEN AND FUEL CELL APPLICATIONS IN HAMBURG: A POLICY PERSPECTIVE

Pierre SCHLOSSER , EURELECTRIC , BE
ELECTRIC VEHICLES’ CONTRIBUTIONS TO REACHING EU POLICY GOALS AND RECOMMENDATIONS

Sylvain HAON , POLIS , BE
DEVELOPMENT OF URBAN MOBILITY SCENARIOS FOR 2030 AND BEYOND
F-2. Standardization & Regulations

Vincent WYNEN, Vrije Universiteit Brussel, BE
DEVELOPING APPLICABLE DRIVING CYCLE FOR RETROFITTED PLUG-IN HYBRID ELECTRIC VEHICLES (PHEVS): ENVIRONMENTAL IMPACT ASSESSMENT

F-3. Life-Cycle Cost Analyses and Short-, Medium-, and Long-Term Strategies

Duarte SOUSA, Instituto Superior Técnico/DEEC, PT
ECONOMIC ASPECTS RELATED TO THE INSTALLATION OF PHOTOVOLTAIC MODULES IN A CAMPING CAR

G- Global Approach Projects

Erik WILHELM, Paul Scherrer Institute, CH
HEURISTIC DESIGN OF ADVANCED DRIVES: ANALYSIS OF TRADE-OFFS IN POWERTRAIN ELECTRIFICATION

Ulf HAFSELD, StatoilHydro ASA, NO
HYNOR AND SHHP - A SCANDINAVIAN APPROACH FOR A MULTINATIONAL HYDROGEN HIGHWAY

Fredrik HEDENUS, Chalmers University of Technology, SE
ELECTRICITY OR HYDROGEN FOR TRANSPORTATION? SYSTEM INTERACTIONS BETWEEN THE TRANSPORTATION AND STATIONARY SECTORS IN A CARBON CONSTRAINED WORLD

THURSDAY, Mai 15, 17.30-19.00

SESSION D2: Dialogue Session

Forum plaza

Chairpersons:
Peter Van den Bossche, Erasmus University College Brussels, Anderlecht, BE; Joeri Van Mierlo, Vrije Universiteit Brussel, Elsene, BE

B-1. Batteries & Energy Storage

Markus STIEGELER, University of Ulm, DE
VIRTUAL BATTERY SIZE ON COST FUNCTION-BASED OPERATIONAL STRATEGIES FOR PARALLEL HYBRID DRIVETRAINS

Valérie SAUVANT-MOYNOT, IFP, FR
AN INTEGRATED APPROACH TO HIGH-POWER BATTERY MODELING: FROM THE ELECTROCHEMISTRY TO THE VEHICLE

Philippe STEVENS, EDF R&D, FR
DEVELOPMENT OF AN ELECTRICALLY RECHARGEABLE ZINC AIR BATTERY FOR ELECTRIC VEHICLES

Toshihiko FURUKAWA, united chemi-con.inc/Nippon Chemi-Con Group, US
CAPACITORS FOR INTERNAL COMBUSTION ENGINE STARTING WITH GREEN TECHNOLOGY DLCAP

Andrew BURKE, university of California-Davis, Institute of Transportation Studies, US
PRESENT STATUS AND PROJECTED FUTURE POTENTIAL OF ELECTROCHEMICAL CAPACITORS AS ENERGY STORAGE IN HYBRID-ELECTRIC VEHICLES

Nobuhito OHNUMA, PUES corporation, JP; Ichiro AOSHIMA, PUES Corporation, JP
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<td>University of Colorado at Colorado Springs, US</td>
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<td>RWTH Aachen, DE</td>
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<td>Institute of electrical power engineering, DE</td>
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<td>Volvo Technology Corporation / Chalmers University of Technology, SE</td>
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<td>China Automotive Technology &amp; Research Center, CN</td>
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SWISS V2G
One of the traditional EVS features is the test drive. Representatives from the manufacturer making vehicles available will be at hand to answer questions about the vehicles, instruct and guide regarding technical matters and safety.

There will be one Track for test drives. Please note that this is at your own risk and responsibility. This year’s EVS 24 Ride & Drive will be available free of charge on the following days:

**OPENING HOURS**

**Wednesday 13 May:**
10.00 - 16.00 EVS 24 Participants & Public

**Thursday 14 May:**
10.00 - 17.30 EVS 24 Participants
14.00 - 17.30 Public

**Friday 15 May:**
10.00 - 17.30 EVS 24 Participants
14.00 - 17.30 Public

Public Sector Package or Summit or Workshop participants are admitted to the Ride & Drive with their badge.

Others can buy an entrance ticket for the Exhibition - one day exhibition entry cost NOK 100 per person, which also allows participation in the Ride & Drive.
For battery electric, hybrid, plug-in hybrid and hydrogen vehicles.
From May 11 to 13 the 570 km Oslo - Stavanger route will be followed by 26 vehicles while another six vehicles will make the “Mini Rally” for the last 70 km leg.
The Norwegian Minister of Transportation will start the EVS24 rally and HRH Crown Prince Haakon of Norway will be driving the first leg together with Henning Solberg, one of the most popular rally drivers in Norway.
On Wednesday 13 at 17.15 HSH Prince ALBERT II of Monaco will be present when the rally arrives at EVS 24.
This rally also constitutes the opening of the Hydrogen Road and the Electric Road with charging stations all along the route.
The route goes from Oslo to Stavanger along Norway’s scenic Southern and Western coast, through varied landscapes perfectly suited for testing and demonstrating the real-life practical use of renewable energy vehicles.
With this rally we aim to show the public and decision makers that hydrogen, hybrid, plug-in hybrid and battery electric cars are roadworthy alternatives, and to inspire manufacturers, researchers, students and others to further improvement of the technology.
The rally will test the performance of the vehicles and the skills of the teams through several special stages along the route, testing manoeuvrability, fuel consumption, acceleration and other vital attributes.
The rally is open to all roadlegal hydrogen, hybrid, plug-in hybrid and battery electric cars.
LIST OF VEHICLES

BATTERY ELECTRIC VEHICLE CLASS

Protoscar (Protoscar), Switzerland
Brusa (Brusa Spyder), Switzerland
Fine mobile (Twike), Germany
Mitsubishi (Mitsubishi), Norway
Tesla (Bellona), Norway
Tesla (Tesla Motors), Denmark
Tesla (Ferdinand Motor AS), Norway
Think (Think), Norway
ElbilNorge (Buddy), Norway
Think (Think), Norway
Think (e-poche), Germany
Think (Lunde), Norway
Citroen (Saxo), Norway

HYDROGEN CLASS

Think / H2 Logic (H2Motive), Denmark
Ford (INE), Iceland/Norway
Ford (KNA), Norway
Quantum/HY10003, Norway
Mazda (0-car), Norway
Quantum/HY10001, Norway
Quantum HY10000, Norway
Quantum/HY10002 (NAF), Norway
Quantum HY10004 (Porsgrunn K), Norway
Quantum/HY10008 (Vekst i Grenland), Norway
Ford, USA
Revolve (Revolve) UK
Fiat (CRF – Hy TRAN), Italy
Quantum/HY10040, Norway
Quantum/HY10005 (Arbeiderpartiet), Norway
Fuel Cell Vehicle Team, Universiti Teknologi Malaysia (H2Motive), Malaysia

PLUG-IN HYBRID CLASS

Amberjac (Gothenburg street AB/ TSS), Sweden
Amberjac (Eidsiva Energi), Norway

MINIRALLY

Ford (Ranger), Norway
Think Nordic (El rayo), Norway
Electrolux, Norway
Think (Baltor 2), Norway
Peugeot (Eldar), Norway
Go green team 2, Norway
Peugeot (Baltor 1), Norway
Team Revalover, Norway
Quantum (Lyse energi), Norway
Quantum (Rogaland FK), Norway
Quantum (Statoilhydro), Norway
SYMP0SIUM & EXHIBITION AREA

EVS 24
Towards Zero Emission
EVS 24
Towards Zero Emission
EVS 24 will exhibit advanced electrically propelled vehicle technologies. 91 companies in 76 stands from 40 countries will show the latest advances in technology, covering over 5 000 m2 under one roof at Stavanger Forum Hall B (Idrettshallen).

The exhibition is free for EVS participants, public sector package and summit/workshop attendees. The entrance fee for the public is NOK 100 per day. The exhibition plan, exhibitor names and details of these can be found on the next pages.

OPENING HOURS

**Wednesday 13 May:**
09.00 - 10.00 Press only
10.00 - 17.00 EVS 24 Participants & Public

**Thursday 14 May:**
10.00 - 17.45 EVS 24 Participants.
14.00 - 17.45 Public

**Friday 15 May:**
10.00 - 19.00 EVS 24 Participants
14.00 - 19.00 Public
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Germany
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www.aleees.com

Has devoted itself to the development of breakthrough LFP-NCO (LiFePO4•zM) material, mass production technologies and global patent deployment since establishment in 2005. Leveraging on advanced mass production technologies, cooperates with lithium battery supply chain partners in Asia to provide cost-effective motive lithium batteries with great quality to push the revolution in the automotive industry to fight the global warming crisis.

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Hans-List Platz 1
AT-8020 Graz
Austria
Tel: +43 31 67 87 50 05
www.avl.com

Stand no 362
BITRODE CORPORATION
1642 Manufacturers Drive
Fenton, MO 63026
USA
Tel: +1 63 63 43 61 12
www.bitrode.com

Stand no 370
BRIGHT AUTOMOTIVE
2701 Enterprise Drive, Suite 228
Anderson, IN 46013
USA
Tel: +1 76 52 98 66 00
www.brightautomotive.com

Stand no 236
BRUSA ELEKTRONIK AG
Via Ronchi
CH-6821 Rovio
Switzerland
www.brusa.biz.com

Stand no 339
CELGARD, LLC
13800 South Lakes Drive
Charlotte, NC 28273
USA
Tel: +1 704-588-5310
E-mail: CelgardMarketing@celgard.com
www.celgard.com

A global leader in the development and production of specialty microporous membranes, including separators used in lithium-ion batteries for personal electronic devices such as notebook computers and mobile telephones, and other emerging high-performance applications such as portable power tools and electric and hybrid electric vehicles (EVs and HEVs).

Stand no 325
D & V ELECTRONICS LTD
13 Ozenway Boulevard
Woodbridge
L4H 2Y7
Canada
www.dvelectronics.com

Stand no 308
DANISH TECHNOLOGICAL INSTITUTE
Kongsvанг Allé 29
DK-8000 Aarhus C
Denmark
Tel: +45 72 20 13 17
www.teknologisk.dk

Stand no 251
DASSAULT SYSTEMES/ DYNASIM AB
C/o DS Dynasim AB
Ideon Science Park
SE-22370 Lund
Sweden
Tel: +46 46 28 62 500
www.dymob.com

Stand no 244
DENSO CORPORATION
1-1, Showa-cho
Kariya-shi, Aichi 448-8661
Japan
Tel: +81 566 25 7548
Telefax: +81 566 25 4870
E-mail: masami_morikawa@denso.co.jp
www.denso.co.jp

Has been developing and producing various products for electric and hybrid electric vehicles (EVs and HEVs). Power control unit and HV-ECU are displayed as MG system components. DC-DC converter, battery monitoring unit, high voltage relay and current sensor are displayed as battery system components. Electric compressor is also displayed as an auxiliary component.

Stand no 377
EIG LTD
16-1 4th Provincial Industrial Complex
Mosi-ri, Jiksan-eup
Cheonan City, Chungcheongnam-do,
Korea 330-814
South Korea
Tel: 82 41 589 5131
Telefax: 82 41 589 5147
E-mail: ko.young.joo@eigbattery.com
www.eigbattery.com
Introducing the METROBuddy – creating a statement and easier days for city users and the environment. Buddy is a less-talk-more-walk philosophy, the rolling proof of words becoming action. Backed by 17 years of experience on the road with the electric Buddy vehicle, currently building up an international distribution network.

Stand no 266

ELECTRIC + HYBRID VEHICLE TECHNOLOGY INT

UKIP Media & Events
Abinger House, Church Street
Dorking, Surrey, RH4 1DF
UK
Tel: +44 1306 743 744
Telefax: +44 1306 742 525
E-mail: s.edmands@ukinpress.com
www.ukipme.com

First published in 1995 and now sent twice a year to more than 30 000 key specifiers and decision-makers throughout the global electric drive industry, firmly established as the world’s leading international showcase for technology and innovation in electric, hybrid and fuel-cell vehicle development and manufacture.

Stand no 373

ELECTRIC MOBILITY CANADA
Suite 309, 15-6400 Millarack Drive
Mississauga, C5N 3E7
Canada
www.emc-mec.ca

A national association of industries, utilities and fleet managers dedicated to the promotion of electric traction vehicles in Canada.

Stand no 321

ELECTROVAYA

Mississauga
Ontario L5J1K9
Canada
Tel: 1 905 855 4615
E-mail: gdasgupta@electrovaya.com
www.electrovaya.com

(TSX: EFL) a developer and manufacturer of proprietary Lithium Ion Super Polym® battery technology. Offers cells modules and battery systems for all classes of zero-emission and plug-in hybrid electric vehicles.

- Stand no 313

ELFORSK AB

Olof Palms gata 31
SE-101 53 Stockholm
Sweden
Tel: +46 8677 25 30
www.elforsk.se

Stand no 321

ELFORSK AB

Olof Palms gata 31
SE-101 53 Stockholm
Sweden
Tel: +46 8677 25 30
www.elforsk.se

Stand no 266

ELECTRIC + HYBRID VEHICLE TECHNOLOGY INT

UKIP Media & Events
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UK
Tel: +44 1306 743 744
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Suite 309, 15-6400 Millarack Drive
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www.emc-mec.ca

A national association of industries, utilities and fleet managers dedicated to the promotion of electric traction vehicles in Canada.

Stand no 321

ELECTROVAYA

Mississauga
Ontario L5J1K9
Canada
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Olof Palms gata 31
SE-101 53 Stockholm
Sweden
Tel: +46 8677 25 30
www.elforsk.se

Stand no 266

ELECTRIC + HYBRID VEHICLE TECHNOLOGY INT

UKIP Media & Events
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Tel: +44 1306 743 744
Telefax: +44 1306 742 525
E-mail: s.edmands@ukinpress.com
www.ukipme.com

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Canada
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Stand no 321

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Mississauga
Ontario L5J1K9
Canada
Tel: 1 905 855 4615
E-mail: gdasgupta@electrovaya.com
www.electrovaya.com

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- Stand no 313

ELFORSK AB

Olof Palms gata 31
SE-101 53 Stockholm
Sweden
Tel: +46 8677 25 30
www.elforsk.se

Stand no 201

ELBIL NORGE AS

Spireaveien 6
NO-0580 Oslo
Norway
Tel: +47 22 22 39 22
Telefax: +47 22 22 39 21
E-mail: post@buddyelectricvehicle.com
www.buddyelectricvehicle.com

Stand no 213

ELTEK VALERE AS

P O Box 2340 Strømsø
NO-3003 Drammen
Norway
Tel: +47 32 20 32 00
Telefax: +47 32 20 32 10
E-mail: eltek@eltekalere.com
www.eltekalere.com

Stand no 321

ELEFT SK AB

Olof Palmes gata 31
SE-101 53 Stockholm
Sweden
Tel: +46 8677 25 30
www.elforsk.se

Stand no 214

ENERDEL

8740 Hague Rd, Building 7
Indianapolis, IN 46256
USA
Tel: + 1 31 75 85 34 62
www.enerdel.com

Stand no 331

ENVIRO ELBILSALG AS

Losjeplassen 2-4
NO-3015 Drammen
Norway
Tel: +47 32 82 00 10
www.elbilsalg.no

Founded by Sigmund Eriksen in 2003, located just outside Oslo. Specialises in the import, sales and service of electric vehicles in Scandinavia. Has built up vast expertise in handling EV technology. Will shortly launch several new models, such as the Zero and Friendly. They will include the latest in EV technology.

Stand no 252

EUROPEAN BATTERIES OY

Karapelontie 11
FI-02610 Espoo
Finland
Tel: +358 9 221 2525
Telefax: +358 9 221 2545
E-mail: info@europeanbatteries.com
www.europeanbatteries.com

Technology builds on lithium-ion iron phosphate chemistry and its own large-capacity cell design. Its Finnish facilities engineer and manufacture high-energy, large-capacity rechargeable lithium-ion batteries. Aim is to deliver previously unattainable levels of battery energy, safety and life cycle, and to provide large energy storage solutions for the most demanding stationary, industrial and vehicle market applications.
The Kaisei switched reluctance motor system has been designed to recapture braking energy until the motor comes to a complete stop. No noise, no vibration and no torque ripple, captures braking energy until zero speed. Half the size and weight of an induction motor.

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EVO ELECTRIC LTD
Unit 14, Woking Business Park
Woking, Surrey
GU21 5JY
UK
Tel: +44 1483 745 010
Telefax: +44 1483 770 506
E-mail: gary.hindmarsh@evo-electric.com
www.evo-electric.com

Offers large-capacity solutions for storing electrical energy. Technology is based on lithium-ion batteries and proprietary intelligent CCS cell control system. Operations are focused on applications in the medium- and heavy-duty vehicle, industrial, and stationary equipment sectors. Customers include OEMs and system integrators.

Stand no 290
FLOW-RITE CONTROLS
Majenstr 4
DE-10787 Berlin
Germany
E-mail: dagfinn@flow-rite.com
www.flow-rite.com

Watering systems for flooded lead acid batteries. Manufacturer of the preferred watering systems for Club Car, Yamaha, Fairplay, Tomberlin and Par-Car, offers the Pro-Fill battery watering system for golf cars and utility vehicles. Waters golf car batteries in less than 30 seconds. Made in the USA. Safest, quickest and easiest way to fill batteries properly.

Stand no 246
FORTUM
Hangövegen 19
SE-11577 Stockholm
Sweden
www.fortum.com

One of the world’s major manufacturers and marketers of petrochemical products and catalysts. Channels breakthrough proprietary technology into valuable petrochemical products which improve the quality of life for people globally. A pioneer in LIB separator film innovation. Proprietary wet process, co-extruded separator production capacity is scalable to meet growing demand worldwide.

Stand no 220
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Hermeslaan 2
BE-1831 Machelen
Belgium
www.exxonmobilchemical.com

Provides test and diagnostic systems for fuel cells, batteries and energy management systems. Evaluator-B system permits fully automated testing, including features such as charge-discharge operation with constant current, voltage or power as well as freely definable ramps or utilisation cycles (driving cycle, dynamic stress testing [DST] and so on).

Stand no 276
FUJIELECTRIC DEVICES TECHNOLOGY EUROPE GMBH
Goethering 58
DE-63067 Offenbach
Germany
Tel: +49 69 66 90 290
Telefax: +49 69 66 90 29 56
E-mail: acreutz@fujielectric.de
www.fujielectric.co.jp

One of the world’s major power semiconductor manufacturers. Automotive division is focused on the hybrid and electric vehicle market. Has provided high-quality IGBT modules to Japanese hybrid vehicles for many years. To meet tough reliability requirements, combines all its engineering skills and close relationships with its customers to achieve success.

Stand no 349
GREATER STAVANGER ECONOMIC DEVELOPMENT
C/o Ipark
P O Box 8034
NO-4068 Stavanger
Norway
Tel: +47 51 87 49 08
E-mail: anneilise.anfinsen@greater-stavanger.com
www.greaterstavanger.com
Non-profit regional development agency owned by 16 local authorities and Rogaland county. Works closely with the region’s political and administrative leaders, the private sector and academia to make Greater Stavanger the ideal environment for business growth.

Stand no 252
HST AUTOMOTIVE LLC
2066 Aldergrove Avenue
Escondido, California 92029
USA
Tel: +1 760 432 6491
Telefax: +1 760 432 6490
www.hstintl.com

Stand no 222
HYNOR – THE HYDROGEN ROAD OF NORWAY
Vålerenga
NO-0246 Oslo
Norway

Stand no 203
IFP – INSTITUT FRANÇAIS DU PETROLE
1 & 4 avenue De Bois-Preau
FR-92852 Rueil-Malmaison Cedex
France
Tel: +33 1 47 52 60 00
www.ifp.fr

Stand no 345
INTELLIGENT ENERGY
The Innovation Centre, Epinal Way
Loughborough, LE11 3EH
UK
Tel: +44 1509 225 863
Telefax: +44 1509 223 911
E-mail: jon.moore@intelligent-energy.com
www.intelligent-energy.com

Clean power systems company developing fuel cell technologies for business partners and their global markets. PEM fuel cell systems are highly power-density, compact, rugged, with less balance of plant and designed from inception with mass manufacture in mind. Automotive partners include the Suzuki Motor Corporation, TRW Conext, London Taxis International and Lotus Engineering.

Stand no 349
IRIS – INTERNATIONAL RESEARCH INSTITUTE OF STAVANGER
P O Box 8046
NO-4068 Stavanger
Norway
Tel: +47 51 87 50 00
Telefax: +47 51 87 52 00
E-mail: firmapost@iris.no
www.iris.no

Medium-sized, non-profit independent research organisation with 240 employees. Research fields are petroleum, gas and energy, the marine environment, the social sciences and business development. Diversity permits a multidisciplinary approach in close cooperation with the authorities, the private sector and other research organisations.

Stand no 244
JAPAN AUTOMOBILE RESEARCH INSTITUTE
2530 Karima, Tsukuba
JP-305-0822 Ibaraki
Japan
Tel: +81 29 856 0818
Telefax: +81 29 856 1169
E-mail: mtakahas@jari.or.jp
www.jari.or.jp

Non-profit organisation for promoting the healthy and sustainable progress of motorisation in Japan. With environmental and energy issues increasingly important, has assumed a leading role in research and promotion of battery, hybrid, and fuel cell electric vehicles in Japan.

Stand no 352
JING-JIN ELECTRIC TECHNOLOGIES CO LTD
Building E, Suite 511A, Wangjing Tech Park No 2, Li Ze Zhong Er Lu
Chaoyang District
CN-100102 Beijing
China
Tel: +86 01 06 43 98 473
www.jje.cn.com

Stand no 252
K2 ENERGY SOLUTIONS
1125 American Pacific Dr, Suite C
Henderson, Nevada 89074
USA
Tel: +1 702 478 3590
Telefax: +1 702 558 0180
E-mail: danderson@peakbattery.com
www.k2battery.com

Stand no 225
KOKAM AMERICA
2901 NE Hagan Road
Lee’s Summit, MO 64064
USA
Tel: +1 816 525 1153
Telefax: +1 816 525 5388
www.kokamamerica.com

Stand no 207
KOKAM CO LTD
OVERSEAS SALES AND MARKETING DEPARTMENT
1261-3 Jungwang-dong
KR-429-849 Si-Heung
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Tel: +82 31 36 20 146
Telefax: +82 31 36 20 190
E-mail: charlie@kokam.com
www.kokam.com

Superior lithium polymer battery manufacture, specialising in electric vehicles.
Stand no 257
LIFEBATT
Skolvagen 33, Kungsangen
SE-19634 Stockholm
Sweden
Tel: +46 8 5580 3600
Telefax: +46 858 166 090
E-mail: n.wiklund@lifebatt.eu
www.lifebatt.eu

Manufacturer of lithium iron phosphate (LiFePO4) modular plug and play battery systems. Modules provide almost any voltage/Ah. High C-rates combined with long life. Operates under full licence from Phostech Lithium, the patent holder of LiFePO4 cathode material. Three-year or 3 000-cycle warranty.

Stand no 311
LIGHT ENGINEERING
5845 W 82nd Street, Bldg 20, Ste 110
Indianapolis, IN 46278
USA
Tel: +1 317 74 7118 00
Telefax: +1317 874-2484
E-mail: sales@Lt-Eng.com
www.Lt-Eng.com

Developed and refined a patented cutting-edge technology since 1998, incorporating amorphous metals and high energy density permanent magnets, to produce variable speed brushless motors and generators with high performance and energy density. Amorphous metal in the stator core replaces the silicon iron used in most electrical machines, allowing LE GenSmart and SmartTorq generators and motors to operate at higher frequencies.

Stand no 307
LITHIUM BALANCE A/S
Baldershøj 26 C 1
DK-2635 Ishøj
Denmark
Tel: +45 58 51 51 04
Telefax: +45 58 51 50 98
E-mail: info@lithiumbalance.com
www.lithiumbalance.com

An innovative company focused on lithium-ion battery pack technology for industrial and transport applications. With its partners, provides research, engineering, installation and maintenance for battery pack solutions. At the heart of every solution delivered is an advanced modular battery management system (BMS) which monitors, balances and protects each cell in the battery pack.

Stand no 337
LS INDUSTRIAL SYSTEMS
LS Tower 1026-6, Hosey-dong,
Dongan-gu
Anyang-si, Gyeonggi-do 431-848
North Korea
www.isholdings.com/eng/main.asp

Designs and manufactures fully programmable automated multiple station secondary and primary cell test systems, frequency response analysers and cell formation equipment among many other products. With equipment in operation in 40 countries, has delivered more test positions than all its competitors combined. Systems are built with voltages up to 700 VDC and currents from 300 nA to 2000 Amps.

Stand no 315
MACCOR INC
4322 South 49th West Avenue
Tulsa, Oklahoma 74107
USA
Tel: +1 918 446 1874
Telefax: +1 918 445 1496
E-mail: sales@maccor.com
www.maccor.com

A premier supplier to the global automotive industry, with full capabilities in power train design, development, testing and manufacture. Differs from competitors by offering complete system integration.

Stand no 226
MACNA POWERTRAIN AG
LANNACH PLANT
Industriestrasse 35
AT-8502 Lannach
Austria
Tel: +43 50 444-0
E-mail: info.eu@magnapowertrain.com
www.magnapowertrain.com

More than 100 years of experience and an extensive range of services. The worldwide leading brand-independent engineering and manufacturing partner for OEMs and provider of innovative solutions for future mobility.

Stand no 224
MES-DEA SA
Via Laveggio 15
CH-6855 Stabio
Switzerland
Tel: +41 91 641 5311
Telefax: +41 91 654 15 333
E-mail: info@mes-dea.ch
www.mes-dea.ch

Devoted to the development, production and marketing of components for electric vehicles. Founded as an independent company with the acquisition of Zebra battery technology in 1999. Produces and sells Zebra battery, fuel cell, electric and hybrid vehicle components, power train.
Aims to help create an environment-friendly society, backed by vast experience in many business fields. Just started mass production of large-capacity LiB (50Ah LEV50) at Lithium Energy Japan joint venture. Intends to expand operations to include other fields, thereby building a strong electric vehicle value chain.

The Mitsubishi i MiEV is a fully electric four-seater vehicle with a range of 160 km in Japanese mode. Its lithium-ion batteries can be charged from a household socket in seven hours, making this a practical and environment-friendly form of transport. Will be launched in Japan this summer, with tests currently being conducted throughout Europe.

The largest union for engineers and technologists in Norway, presents the best of engineering – the unique electric motorcycle from Takhi, developed by graduate students at Østfold University College.

Global player in power transmission field, with more than 80 years of experience. Has been applying its long experience in the zero emission field since 1996, making a significant move towards this new area of the mobility market by supplying the major electric vehicle manufacturers with electric drive axles.

Test and formation equipment for energy storage devices. Stands for world-class manufacturing and testing equipment for the energy storage market, including: high power and accurate cyclers for cells and packs, with super fast switching between different load levels, inline testing equipment, fully automated formation and grading systems. Used in electric and hybrid vehicles, aerospace, military and other applications.
Stand no 348
PERM-MOTOR GMBH
Kesslerstr 1-3
DE-79206 Breisach
Germany
www.perm-motor.de

Stand no 356
PNE SOLUTION CO., LTD
SALES
37-1, Youngsu-Ri, Choweol-Eup
KR-464-865 Gwangju-Si, Gyeonggi-Do
South Korea
Tel: +81 31 766 8136
Telefax: +81 31 766 8150
E-mail: power@pnesolution.com
www.pnesolution.com

Strong equipment manufacturer for all kinds of batteries and UCs.

Stand no 326
PROTOSCAR SA
Via Ronchi
CH-6821 Rovio
Switzerland
Tel: +41 91 649 60 60
E-mail: info@protoscar.com
www.protoscar.com

Stand no 236
QUANTYA SA
Riva Paradiso 26
CH-6900 Lugano - Paradiso
Switzerland
Tel: +41 91 980 32 58
Telefax: +41 91 648 16 45
www.quantya.com

Stand no 347
REVA ELECTRIC CAR COMPANY LTD
122 E Bommasandra Ind Area
IN-560099 Bangalore
India
www.revaindia.com

Stand no 371
REVOLUTIONARY ENGINEERING INC
36865 Schoolcraft Road
Lironia, MI 48150
USA
Tel: +1 734 432 9334
Telefax: +1 734 423 0129
E-mail: info@revoleng.com
www.revoleng.com

Provides hybrid vehicle test systems and component testing. Works hand in hand with the customer's team to develop innovative and practical solutions for its testing and systems needs. Services are customised to provide customers with cost-effective solutions tailored to the most challenging requirements.

Stand no 349
ROGALAND COUNTY COUNCIL
ROGALAND FYLKESKOMMUNE
P O Box 130
NO-4001 Stavanger
Norway
Tel: +47 51 51 60 00
Telefax: +47 51 51 66 20
E-mail: firmapost@rogfk.no
www.rogfk.no

Public administration in Norway has a structure with the following elements: central government, county councils and local authorities. Rogaland county council employs around 3,500 people and is responsible for county-level policies for secondary education, cultural affairs, communications, dental care, economic development and regional planning, including development of the road system.

Stand no 341
SFC AG
Eugen-Saenger-Ring 4
DE-85649 Brunnthal
Germany
Tel: +49 89 673 592 - 0
Telefax: +49 89 673 592 - 369
E-mail: info@efoy.com
www.efoy.com

Provides hybrid vehicle test systems and component testing. Works hand in hand with the customer's team to develop innovative and practical solutions for its testing and systems needs. Services are customised to provide customers with cost-effective solutions tailored to the most challenging requirements.

Stand no 222
SHHP - SCANDINAVIAN HYDRO-GEN HIGHWAY PARTNERSHIP
E-mail: info@scandinavianhydrogen.org

Stand no 278
STATOILHYDRO ASA
NO-4035 Stavanger
Norway
Tel: +47 51 99 00 00
Telefax: +47 51 99 00 50
www.statoilhydro.com

Introducing high-voltage wiring harness systems and components for hybrid electric vehicles from battery to motor. Porous metal Celmet is used for the electrode of Ni-MH batteries. CuMo heat spreader is used for the power module. From inverter to motor, high-voltage wiring harness is used. Magnet wire is used for the motor.
Swedenergy is a non-profit industry organisation representing companies involved in the generation, distribution and trading of electricity in Sweden. Has a total of 171 member groups.

Swedenergy is a non-profit industry organisation representing companies involved in the generation, distribution and trading of electricity in Sweden. Has a total of 171 member groups.

Founded in 1998, works to transform the Swedish energy system into an ecologically and economically sustainable system by guiding government capital to the energy sector. This is done in collaboration with trade and industry, energy companies, local authorities and the research community.

A distributed centre of excellence with the objective of developing and optimising existing and forthcoming technologies for propulsion and energy storage, in order to identify the most fuel- and cost-effective hybrid vehicle concept. The three Swedish universities involved are the Chalmers University of Technology, the Royal Institute of Technology and the Lund Institute of Technology.

Five students at Østfold University College constitute the Takhi Design team developing the prototype of an electric motorcycle. This is their final project for a bachelor of engineering degree in industrial design. Exhibiting with collaborator Nito.

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Five students at Østfold University College constitute the Takhi Design team developing the prototype of an electric motorcycle. This is their final project for a bachelor of engineering degree in industrial design. Exhibiting with collaborator Nito.
den and Belgium). This process is currently the best available technology for recycling of portable and/or industrial batteries.

Stand no 349
UNIVERSITY OF STAVANGER UIS
NO-4036 Stavanger
Norway
Tel: +47 51 83 10 00
E-mail: post@uis.no
www.uis.no

An innovative university which currently enrolls 8 300 students and employs 1 200 academic and administrative staff. Located in the city of Stavanger. Region and university are known for their success in the triple helix of academia, industry and government relations.

Stand no 260
UTC POWER
195 Governor’s Highway
South Windsor, CT 06075
USA
Tel: +1 866 900 7697
E-mail: info@utcpower.com
www.utcpower.com

Fleet vehicle programme powered by the PureMotion™ Model 120 system supplies zero-emission fuel cell power systems to several transit bus programmes in the USA and Europe, with nearly twice the fuel economy of a standard diesel-powered bus. Also plays a significant role in the US Federal Transit Administration’s national fuel cell bus technology development programme.

Stand no 212
VALENCE TECHNOLOGY
Unit 63, Mallusk Enterprise Park
Mallusk
County Antrim
BT36 4GN
UK
Tel: +44 28 9084 5400
Telefax: +44 28 9083 8912
E-mail: sales@valence.com
www.valence.com

Has redefined lithium battery technology and performance with the industry’s first safe, reliable and rechargeable lithium iron magnesium phosphate battery. Proven technology and manufacturing infrastructure deliver ISO-certified products and processes protected by an extensive global patent portfolio. Delivers to applications in the automotive, stationary, industrial and military sectors.

Stand no 375
ZHEJIANG UNITE MOTOR CO LTD
309 Huaxuan Building, Haibin Plaza
Jintian Road
CN-518045 Shenzhen
China
www.unitemotor.com

Stand no 314
ZHEJIANG YONGKANG HARDWARE PRODUCTIVITY PROM CENTRE
No 19 Jincheng Road
CN-321300 Yongkang, Zhejiang
China
www.5jpt.com

Stand no 294
ZYTEK AUTOMOTIVE LTD
Lancaster Rd, Fradley Park
Lichfield, Staffordshire
WS13 8RY
UK
Tel: +44 1543 412 789
Telefax: +44 1543 412 799
E-mail: sales@zytekgroup.co.uk
www.zytekgroup.co.uk

British engineering company with a reputation for success. Substantial automotive engineering experience provides major vehicle manufacturers with advanced power train and chassis control systems. This expertise has led to rapid growth and, most significantly, to the design, development and manufacture of innovative hybrid and electric drive trains.
11-12 MAY: THE PRELUDE

Monday & Tuesday

Executive Committee for the International Energy Agency Implementing Agreement For Hybrid and Electric Vehicle Technologies and Programmes

Tuesday May 12

EVAAP General meeting
14.45 - 15.45

Weva meeting
16.00 - 17.30

Open meeting for EV associations
17.30 - 18.30

20th WEVA Anniversary Cocktail
18.30 – 19.30

Wednesday May 13

CITELEC
16.30 to 18.00
WELCOME RECEPTION
May 13 2009
18.00 - 20.00 in the Exhibition hall

With the presence of
HSH PRINCE ALBERT II OF MONACO

Welcome address by
ROBERT STUSSI
Conference Chairman
President of the World Electric Vehicle Association

HARALD N. RØSTVIK
Chairman International Steering Committee and
EVS24 Stavanger Organizing Committee

Welcome to Stavanger.
LEIF JOHAN SEVLAND
Mayor of Stavanger

“International Energy Agency IA-HEV” award ceremony
“EVS 24 Viking rally awards”

BOAT TRIP TO LYSEFJORD
“THE PULPIT”
May 14 2009 18.45 - 23.00

Experience a typical Norwegian spring evening in
a wonderful landscape, dinner included.
Only for registered participants.
Dress code: relaxed and warm depending on weather.
CONFERENCE DINNER
MAY 15  2009 IN LINDESNES
20.00 - 23.00

Addresses and award comments by

ROBERT STUSSI
Conference Chairman
President of the World Electric Vehicle Association

HARALD N. RØSTVIK
Chairman International Steering Committee and EVS24 Stavanger Organizing Committee

ÓLAFUR RAGNAR GRIMSSON,
President of Iceland

MARGOT WALLSTRÖM
European Union Vice-President,

EVS24 E VISIONARY AWARDS

Dress code: Dress nicely, relaxed event
Smart but Casual
**GENERAL INFORMATION**

**Administration**
The conference office is located in Hall K and the exhibitior service centre can be found in Hall B.

**Registration - Exhibition**
The registration fee for visitors to the exhibition is NOK 100 including VAT.

**Restaurant - Cafeteria- Lunches 14-15 May**
Hall B

**Information desk**
The Information desk is located at the main entrance in Hall K

**Press centre**
The press centre is located on the first floor of Hall A
Room: Utsira

**Bank**
A cash point is located outside the entrance to Hall A

**First aid - Lost property**
Please contact the exhibitor service centre in Hall B or our reception desk in hall A.

**Buses**
The buses will leave from outside Hall K

**Telephone numbers:**
- Stavanger Forum +47 51 59 81 00
- Stavanger Taxi +47 51 90 90 90
- Norgestaxi 08 000
- Fire 110
- Police 112
- Ambulance 113

**Internet:**
Log-in details are available at the reception in hall A
Internet Cafe in Exhibition Hall

**Entertainment:**
Clasic guitar: Sean Theiss
# BUS TRANSPORT EVS 24

<table>
<thead>
<tr>
<th>Date</th>
<th>From/to</th>
<th>Departure to Symposium/Boattrip:</th>
<th>Return from Symposium/Boattrip:</th>
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<tbody>
<tr>
<td><strong>May 13</strong></td>
<td>CITY CENTRE - EVS 24 VENUE - CITY CENTRE</td>
<td>Departure to welc. reception:</td>
<td>Return from welc. reception:</td>
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<td><strong>May 14</strong></td>
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<td>Departure to Symposium:</td>
<td>Return from Symposium:</td>
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### May 13
- **CITY CENTRE - EVS 24 VENUE - CITY CENTRE**
- **BUS STOP 20 By HOTEL ATLANTIC**: 17.15/17.30/17.45/18.00
- **PARK INN HOTEL**: 17.50/20.10

### May 14
- **CITY CENTRE - EVS 24 VENUE - CITY CENTRE**
- **BUS STOP 20 By HOTEL ATLANTIC**: 07.50/08.00/08.10
- **PARK INN HOTEL**: 08.00/17.50
- **BOATTRIP: RICA FORUM - PARK INN - HARBOUR return**
- **RICA FORUM HOTEL via Park Inn**: 18.35
- **PARK INN**: 18.40

### May 15
- **CITY CENTRE - EVS 24 VENUE - CITY CENTRE**
- **BUS STOP 20 By HOTEL ATLANTIC**: 07.25/07.35/07.45
- **PARK INN HOTEL**: 07.35/19.00
- **CONFERENCE DINNER**
- **BUS STOP 20 By HOTEL ATLANTIC**: 19.50/23.00
- **PARK INN HOTEL**: 19.50/23.00

Please arrive early.
### May 16

<table>
<thead>
<tr>
<th>From/to</th>
<th>Departure to Symposium:</th>
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<tr>
<td>BUS STOP 20 By HOTEL ATLANTIC</td>
<td>0725/0735/0745</td>
<td>1310/1330</td>
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<tr>
<td>PARK INN HOTEL</td>
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<td>1310</td>
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**AIRPORT shuttle**

<table>
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<tr>
<th>To</th>
<th>Departure to Airport:</th>
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<tbody>
<tr>
<td>STAVANGER AIRPORT, SOLA</td>
<td>1310/1320/1330</td>
</tr>
</tbody>
</table>
Emergency Numbers:

Robert Stussi Tlf: +47 95 24 17 27

Stavanger Forum Tlf: +47 51 59 81 00

Rica Forum Hotel Tlf: +47 51 93 00 00

Fire 110

Police 112

Ambulance 113