

Konferenzprogramm | Conference Programme



5th International
Conference on
Sustainable Automotive
Technologies

25 - 27 September 2013
Ingolstadt, Germany

Conference Info

Institut für Technik und Design e.V.

Organising Committee
Technische Hochschule Ingolstadt

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Konferenzprogramm | Conference Programme

MITTWOCH | WEDNESDAY 25 SEPTEMBER 2013

from 08:00	REGISTRIERUNG REGISTRATION	
08:30 – 09:45	ERÖFFNUNG OPENING	Conference Chair Prof. Jörg Wellnitz
	Grußworte Greetings: Sepp Mißbeck, Peter Tesch, Prof. Jörg Wellnitz	
09:45 – 10:15	Prof. Ingemar Denbratt Challenges for future – Internal Combustion Engines Head of Combustion Division - Chalmers University, Gothenburg	
10:15 – 10:45	KAFFEPAUSE COFFEE BREAK	
10:45 – 11:15	Heinz Peter Hollerweger The increasing awareness of sustainability in the conventional industrialised society - opportunities and risks Head of Total Vehicle Development - AUDI AG	
11:15 – 11:45	Prof. Aleksandar Subic New design and manufacturing paradigms for vehicle lightweighting Dean of Engineering and Head of School of Aerospace, Mechanical and Manufacturing Engineering - RMIT University, Melbourne	
11:45 – 12:15	Prof. Lutz Fügener Novelties and the force of habit. What does it take to make new mobility tools attractive? Head of School of Transportation Design - University Pforzheim	
12:15 – 13:30	MITTAGSPAUSE LUNCH BREAK	
	PLENUM 01 AREA 01 FUEL & FUEL SYSTEMS	Conference Chair Prof. Jörg Wellnitz
13:35 – 13:55	01 Hydrotreated Renewable Feedstocks for High Performance Fuels and beyond Sebastian Dörr - Neste Oil	
13:55 – 14:15	02 Assessment of the viability of inherently safer vegetable oil based fuels Ian Thomas - I F Thomas & Associates	
14:15 – 14:35	03 Material Composition and Revenue Potential of Australian End of Life Vehicles using Machine-based Dismantling Ezzat El Halabi - Australian National University	
14:35 – 14:55	04 Deposits in Diesel Engines – Deposit mechanism of PPO fuels with focus on ashes, a practical approach Tino Wunderlich, Stefan Innerhofer - regineering GmbH	

RAUM 02 | AREA 02

Conference Chair Eva Wilhelm

THEORETICAL ASPECTS & SIMULATION

13:35 – 13:55

05 *Energy flux simulation on a vehicle testbed for validating the efficiency of different driving and assistance systems*

Stefan Geneder - Institute for Applied Research Ingolstadt

13:55 – 14:15

06 *Finite Element Analysis of Three-point Bending Test of a Porous Beam Emulating Bone Structure for the Development of Vehicle Side Intrusion Bars*

Yan Rui - RMIT University

14:15 – 14:35

07 *The usage of lightweight materials in hazard areas – Flex-Metal-Mesh*

Eva Wilhelm - ITD GmbH

14:35 – 14:55

08 *Conceptual design evaluation of lightweight load bearing structural assembly for an automotive seat adjuster mechanism*

Mladenko Kajtaz - RMIT University

RAUM 03 | AREA 03

Conference Chair Stefan Herrmann

MANUFACTURING & MONITORING

13:35 – 13:55

09 *Laser-assisted tape placement of thermoplastic composites: The effect of process parameters on bond strength*

Christopher Stokes-Griffin - Australian National University

13:55 – 14:15

10 *Coating of automobile structural components from ultra-high strength steels*

Verena Merklinger - SGL Group - The Carbon Company

14:15 – 14:55

11 *Structural Health Monitoring for Carbon Fiber Resin Composite Car Body Structures*

Stefan Herrmann, Steffen Jahn - Institute for Applied Research Ingolstadt, Honda R&D Europe GmbH

14:55 – 15:20

KAFFEPAUSE | COFFEE BREAK

15:00 – 18:15

ABFAHRT AUDI FÜHRUNG | DEPARTURE AUDI GUIDED TOUR

19:40 – 21:10

DR. FRANKENSTEINS MURDER MYSTERY TOUR

DONNERSTAG | THURSDAY 26 SEPTEMBER 2013

08:30 – 08:45 **BEGRÜßUNG | WELCOME** Conference Chair Prof. Aleksandar Subic

Grußworte | Greetings: Walter Schober

08:45 – 09:15 **Wulf-Peter Schmidt | Towards sustainable individual mobility: challenges and solutions**

Manager Sustainability, Vehicle Environmental Engineering - Ford - Werke GmbH

09:15 – 09:45 **Petros Lappas | Fuels, combustion strategies and recovery of waste energy**

Lecturer in Mechanical Engineering, School of Aerospace - RMIT University, Melbourne

09:45 – 10:15 **Thomas Brodbeck | How new things come into the world**

Media producer, associated professor - TH Ingolstadt

10:15 – 10:45 **KAFFEPAUSE | COFFEE BREAK**

10:50 – 11:20 **Prof. Ullrich Hesse | Thermal systems for vehicle thermal management, air conditioning, heat recovery and future fuels**

Bitzer endowed professorship for refrigeration, cryogenics and compressor technology - TU Dresden

PLENUM 01 | AREA 01

Moderation Johannes Töpler

PANEL DISCUSSION

11:20 – 11:35 **Introductory presentation on “Light Car Sharing”: Johannes Barckmann – Head of Design Studio EDAG - EDAG GmbH & Co. KGaA**

11:35 – 12:15 **Panel discussion**

Sven Leonhardt – Department Manager Functions & Material Technology - Honda R&D Europe GmbH

Johannes Barckmann – Head of Design Studio EDAG - EDAG GmbH & Co. KGaA

Volker Fink – Vice President Business Unit AUDI - EDAG GmbH & Co. KGaA

Wulf-Peter Schmidt – Manager Sustainability, Vehicle Environmental Engineering - Ford-Werke GmbH

12:15 – 13:30 **MITTAGSPAUSE | LUNCH BREAK**

PLENUM 01 | AREA 01

Conference Chair Daniel Duschek

FUEL TRANSPORTATION & FUEL STORAGE

13:35 – 13:55 **12 The Innotruck Case Study on a Holistic Approach to Electric Mobility**
Ljubo Mercep, Gernot Spiegelberg - TU München, Siemens AG

13:55 – 14:15 **13 High pressure hydrogen storage system based on new hybrid concept**
Daniel Duschek - ITD GmbH

14:15 – 14:35 **14 Risk optimisation of an automobile hydrogen system**
Jean Meyer - WIWeB

14:35 – 14:55 **15 A literature review in dynamic wireless power transfer for electric vehicles - Technology and infrastructure integration challenges**
Andrea Gil - Clemson University

DONNERSTAG | THURSDAY 26 SEPTEMBER 2013

RAUM 02 | AREA 02 MATERIAL RESEARCH

Conference Chair Horst Bansemir

- 13:35 – 13:55 *16 Structural Composite Elements with Special Behavior*
Horst Bansemir - Consulting for Composites
- 13:55 – 14:15 *17 A dynamical life cycle inventory of steel, aluminum, and composite car bodies-in-white*
Paul Compsten - Australian National University
- 14:15 – 14:35 *18 The project: Sustainability Racing - The vision: mobility of the future*
Hans-Josef Endres, Christoph Habermann - IfBB, University Hannover
- 14:35 – 14:55 *19 Patents of Nature*
Thomas Brodbeck - TH Ingolstadt

RAUM 03 | AREA 03 MANAGEMENT & COSTS

Conference Chair Martin Borschlegl

- 13:35 – 13:55 *20 Sustainability in Automotive Pricing*
Thomas Ruhnau, Wilfried Bunzel - BMW Group
- 13:55 – 14:15 *21 Increasing sustainability of road transport in European cities and metropolitan areas by facilitating autonomic road transport systems*
Jörn Schlingensiepen - TH Ingolstadt
- 14:15 – 14:35 *22 Holistic Approach to Reducing CO₂ Emissions along the Energy-Chain (E-Chain)*
Martin Borschlegl - Audi Planung GmbH
- 14:35 – 14:55 *23 Investment into alternative energies, climate protection and sustainable mobility – Power-To-Gas & Mobility*
Heinz Sturm - Climate Technology Center Bonn

14:55 – 15:20 **KAFFEPAUSE | COFFEE BREAK**

15:30 – 16:30 **ABFAHRT BUS | DEPARTURE BY BUS**

16:40 – 18:00 **SCHIFFFAHRT | BOAT TRIP**

18:30 – 22:00 **ABENDESSEN KLOSTER WELTENBURG | CONFERENCE DINNER**

FREITAG | FRIDAY 27 SEPTEMBER 2013

08:30 – 08:45 **BEGRÜßUNG | WELCOME** Conference Chair Prof. Ingemar Denbratt

08:45 – 09:15 **Prof. Reza Jazar | Autodriver Algorithm for Autonomous Vehicles for ground and aerial vehicles**
Discipline Head of Mechanical and Automotive Engineering - RMIT University, Melbourne

09:15 – 09:45 **Thomas Ferwagner | Lightweight Photovoltaic and E-Mobility**
Director - Officium, Design Engineering GmbH

09:45 – 10:15 **Michael Hofmann | Status Quo of E-Mobility**
Chief financial officer, federal association of E-Mobility - BEM e.V.

10:15 – 10:45 **KAFFEPAUSE | COFFEE BREAK**

PLENUM 01 | AREA 01 Conference Chair Prof. Jörg Wellnitz
E-MOBILITY & BATTERY SYSTEMS

10:50 – 11:10 **24 Battery Second Use: sustainable life cycle design through the extension of tools used in the vehicle development process**
Melissa Bowler - Clemson University, BMW Group

11:10 – 11:30 **25 Performance Evaluation of Two-Speed Electric Vehicles**
Holger Roser - University of Technology Sydney

11:30 – 11:50 **26 Novel latent heat storage devices for thermal management of electric vehicle battery systems**
Christian Huber - TUM CREATE Ltd.

11:50 – 12:10 **27 Efficient lithium-ion battery pack electro-thermal simulation**
Lucas Kostetzer - CADFEM GmbH

RAUM 02 | AREA 02 Conference Chair Prof. Thomas Binder
STUDENT CONFERENCE

10:45 – 11:00 **01 Santosh Akkaladevi**

11:00 – 11:15 **02 Philipp Machner**

11:15 – 11:30 **03 Johannes Stöckl**

11:30 – 11:45 **04 Yinan Chen**

11:45 – 12:00 **05 n.n.**

Committee: Thomas Binder, Johannes Töpler

FREITAG | FRIDAY 27 SEPTEMBER 2013

PLENUM 01 | AREA 01 ANNOUNCEMENTS

Conference Chair Prof. Jörg Wellnitz

12:15 – 12:25

BEST PAPER AWARD & STUDENT PROJECT AWARD

Award for best presentation and paper

12:25 – 12:35

ANKÜNDIGUNG ICSAT 2014 | CONFERENCE ANNOUNCEMENT ICSAT 2014

Prof. Ingemar Denbratt

12:35 – 12:50

ABSCHLUSS DES KONGRESSES | END OF CONFERENCE

Conference closing by Chairmen

13:00 – 14:00

TOUR TECHNISCHE HOCHSCHULE | UNIVERSITY TOUR