

# SCHEDULE

23rd – 24th April 2013, Győr Hungary

FORMULA  
STUDENT  
ENGINE  
SYMPOSIUM

## 23rd April 2013

place: Széchenyi István University, Mobilis Interactive Science Center, AUDI Hungaria Vehicle Engineering Department Group - Department for Internal Combustion Engines

- 8.00 – 9.00** Registration
- 9.00 – 9.45** I. Presentation, Martin Streckel - **Title work in progress**
- 10.00 – 11.30** **Workshop block** – 7 simultaneous workshops, plant visit:
1. Dr. Peter Schögggl - **Key criteria to win races**
  2. Thomas Pels - **Hybrid Powertrain System Design**
  3. Energotest - **Test energy management**
  4. Gergely Bári - **Racecar setup**
  5. Hannes Dettmann - **Tuning Vehicle Handling By Adjusting Tire Characteristics**
  6. **AUDI Hungaria Motor Kft. - Plant visit**
  7. Karl Durst - **The future is black - lightweight-design with CFRP**
  8. Workshop by Continental (**ABS implementation into FS car - case study**)
- 12.00 – 12.45** **II. Presentation**, Karl Durst - **Audi ultra-lightweight technology**
- 13.00 - 14.15** Lunch
- 14.15 – 15.00** **III. Presentation block**  
SZEngine - **The first unique single cilinder in the FS KA-RaceIng & joanneum racing** - **The FS133 - A Formula Student engine designed by KA-RaceIng and joanneum racing graz**
- 15.15 - 16.45** **Workshop Block** - 7 simultaneous workshops
1. Dr. Peter Schögggl - **Key criteria to win races**
  2. Thomas Pels - **Hybrid Powertrain System Design**
  3. Energotest - **Test energy management**
  4. Gergely Bári - **Racecar setup**
  5. Hannes Dettmann - **Tuning Vehicle Handling by Adjusting Tire Characteristics**
  6. Karl Durst - **The future is black - lightweight -design with CFRP**
  7. Workshop by Continental ( **ABS implementation into an FS car - case study**)
- 17.00 - 17.30** **Engineering and music - seemingly different**
- 17.45** **V.I.P. Reception**
- 19.00 - 20.00** **Battle of the Nations (Competitive games)**
- 20.00** - FSES Club Open

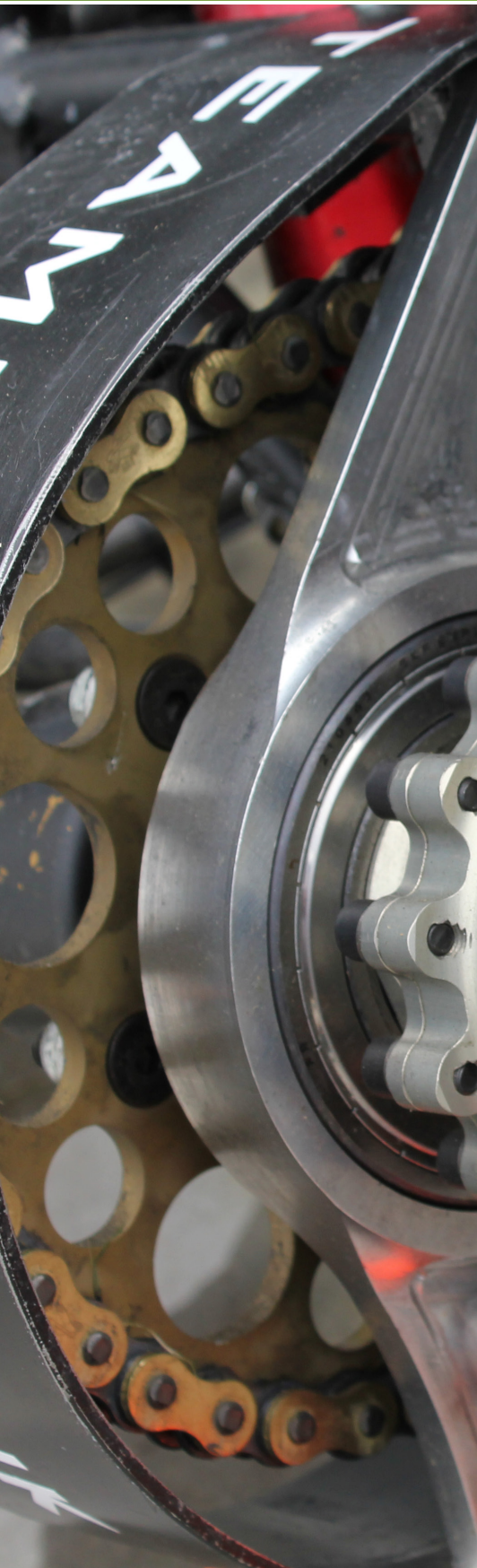


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- 08.00 – 09.00** Registration
- 09.00 – 09.45** V. Presentation, DUT Racing - **Formula Student: What could possibly go wrong?**
- 10.00 – 11.30** **Workshop block** – 7 simultaneous workshops, plant visit:
1. Dr. Peter Schöggel - **Key criteria to win races**
  2. Thomas Pels - **Hybrid Powertrain System Design**
  3. Energotest - **Test energy management**
  4. Dr. Jörg Ross - **The new engine regulation in F1 - How to define a concept**
  5. Gergely Bári - **Racecar setup**
  6. Hannes Dettmann - **Tuning Vehicle Handling By Adjusting Tire Characteristics**
  7. **AUDI Hungaria Motor Kft. - Plant visit**
  8. Workshop by Continental (**ABS implementation into FS car - case study**)
- 12.00 – 12.45** VI. Presentation, Dr. Peter Schöggel - **Formula 1 Technology 2013-2014**
- 13.00 – 14.15** Lunch
- 14.15 – 15.00** **VII. Presentation**, Donatus Wichelhaus - **Development of the VW WRC Engine**
- 15.15 – 16.45** **Workshop block** – 7 simultaneous workshops:
1. Dr. Peter Schöggel - **Key criteria to win races**
  2. Thomas Pels - **Hybrid Powertrain System Design**
  3. Energotest - **Test energy management**
  4. Dr. Jörg Ross - **The new engine regulation in F1 - How to define a concept**
  5. Gergely Bári - **Racecar setup**
  6. Hannes Dettmann - **Tuning Vehicle Handling By Adjusting Tire Characteristics**
  7. Workshop by Continental (**ABS implementation into FS car - case study**)
- 17.00 – 17.30** Martin Schuster – **Each gram counts - Efficiency technologies and lightweight manufacturing**

# PRESENTERS

## FORMULA STUDENT ENGINE SYMPOSIUM



### **Barna Hanula Phd**

Vice dean for industrial cooperation of the Széchenyi University, Head of the Audi Institute

He made his studies at TU Budapest. He has been one of the initiators of the universities racing team and won the Hungarian championship with his self- designed and built race car. At Schrick GmbH (later

AVL Schrick GmbH) he led several projects, later the engine development and used to be the managing director for the last 12 years. His scope of activities covered engine development, electric- and hybrid vehicle development, engine design and business development. Participating in the development of the W16 Bugatti Veyron engine he considers one of the greatest successes of his career.

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### **Dr.-Ing. Donatus Wichelhaus**

VW Motorsport GmbH, Leader of Engine Development

As a student of Technische Universität München and the University of Karlsruhe, he acquired knowledge about the physics of internal combustion engines and also got familiar with general relativity theory.

After working as a calculation engineer, his route lead to Ferdinand Porsche AG in Weissach to become a test engineer in the thermodynamics team of engine research.

The next milestone was Adam Opel AG in Rüsselsheim, where he was working as a test engineer for the MOFI (Motor Fuel Injection) Department. From industry he headed to racing. At Opel Motorsport Europe, Opel Team Rosberg, as the technical leader of OPC GmbH many championship titles hallmark his career.

For three years he was busy leading the development and introduction of the Opel Vectra OPC with a two-stage turbocharged diesel engine. Currently he is the leader of Engine Development at VW Motorsport GmbH and also a lecturer at the University of Stuttgart, Institute of Internal Combustion Engines and Automotive Engineering



### **Dr. Jörg Ross**

Head of IAV's new Advanced Development division

At the beginning of his career he worked for FEV Motorentchnik in Aachen as Responsible Engineer of FEV Valve-Train Projects. At Ford Werke AG in Germany he was the Supervisor of Zetec SE Engine Development. In 2001

he joined Ferrari and being Head of Base Engine Development he was responsible for developing Formula 1 engines. Since 1st January, 2009 he is employed by IAV GmbH filling the role Executive Vice President of Advanced Powertrain Engineering.

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### **Dr. Peter Schöggel**

Head of Business Field Racing in AVL, Powertrain Engineering and Technology AVL List GmbH, Graz, Austria

Leading AVL's Motorsport activities since more than 10 years with leading customers in Formula 1, DTM, F3, NASCAR,

Indycar. Multiple international Motorsport publications together with Racing customers (e.g. Ferrari Formula 1 in 2001, 2003 and 2005). Chief Judge in Formula Student since 2008

#### Active motorsport

- 1985-1987 Official test driver of Formula Ford 2000 program in Austria
- 1988 1st place in the 1600cc category in the Styrian Mountain Championship
- 1989 1st place in the 1600cc category in the International Alpen-Donau-Bergpoka, 1 race in Pecs, Hungary
- 1990 2nd place in the Austrian Championship Mountain Race 1600cc
- Since 2007 Participation in Regularity Rallies, e.g. Ennstal Classic, Planai Classic

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## Hannes Dettmann

Graduate Student at Continental AG.

In 2007 he began studying mechanical engineering at the UAS Stralsund where he joined "Baltic Racing", Germany's first Formula Student Team (founded in 1999). As a driver & the head of suspension department, he focused

intensely on vehicle dynamics &

suspension design. In 2009/2010 he became the technical director of the team until he left for Continental AG to complete his internship & bachelor thesis. His tasks at Continental included the further development of the Continental Formula Student Tire & the execution of several Tire Workshops for Formula Student Teams. Throughout the last 6 years he gained a respectable understanding of vehicle dynamics & tires interaction, both theoretically and practicaly and closely related to the challenges of Formula Student. Currently he is finishing his Master Thesis in the Segment "Suspension System" at Continental AG, Hanover.

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## Paul Achtsnit

Born: 24.11.1987 in Horn (Austria)  
Automotive Engineering since 2009  
(FH Joanneum Graz)

### Formula Student:

Joanneum racing since august 2011  
CFD-Simulation  
Lubrication system  
Internship and diploma thesis at Mercedes-AMG  
Optimization cylinder head  
Simulation inlet duct

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## Simon Mörsdorf

Born: 18.07.1990 in St. Wendel  
(Germany)  
Mechanical Engineering since 2009  
(Karlsruhe Institute of Technology)

### Formula Student:

KA-RaceIng since august 2011  
Shifting system  
Drivetrain  
Internship at Mercedes-AMG  
Project management



## Max Wink

Chief Engineer Rennteam Uni  
Stuttgart

Max Wink is 21 and currently a Bachelor Student in Applied Physics. He expects to finish his degree at Delft University of Technology in 2013. In the previous academic year, Max

has been involved with Formula Student as Team Manager of the DUT Racing Team 2012. Before that, he was also partly involved in the DUT 2011 year, always being busy with the management side of the story. He is a true people manager, always trying to get the best out of every team member.

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## Jim Rojer

Jim Rojer is 21 years old and currently a Bachelor Student in Aerospace Engineering. He aims to finish his Bachelor degree at the Delft University of Technology in 2014. In the previous year, Jim has been involved with Formula

Student as the Operations and Finance Manager of the DUT Racing Team 2012. He gained a lot of experience in identifying if plans are realistic or not, and what could possibly go wrong in an event as Formula Student. He always managed to keep the team satisfied on major events, being a crucial factor on the way to the team's victory.

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## Thomas Pels

Global Head of Hybrid and Electric  
Powertrain at AVL

Thomas Pels has a diploma in Mechanical Engineering / Automotive Engineering. As a development engineer his

professional career began at Continental AG in 1995. Later he became the team leader of ISG Development. From 1999 to 2003 he worked for LuK GmbH & Co. managing Hybrid Propulsion Systems in the advanced engineering division. Currently he is employed by AVL as the Head of Hybrid and Electric Powertrain Systems since November 2008. The key aspects of this skill area are system analysis and simulation, powertrain system design and integration, functional safety, prototype vehicle build as well as system V&V