

Issue 2 ● April 2011

*Dear President,  
Dear Secretary,  
Dear Members of the National EAEC Societies,  
Dear Friends and Colleagues,*



In the second issue of the 2011 Newsletters, the European automotive events from now to the end of this year are mentioned, as far as I am informed.

Please send me automotive events, which are not on the list.  
I will announce them in the next issues.

In March and April, there were some interesting automotive events and I can mention these congresses in the column „*Post Congress Information*”

Unfortunately I cannot announce any special birthdays, any automotive awards or other occasions in the national societies which might be of general interest. If some special things happen in your society that are worth announcing, please let me know.

The main event of our EAEC family is the

## **EAEC 2011 Congress**

14 – 16 June 2011

Valencia, SPAIN

<http://eaec2011.com/>

More information about the tourist attractions in the surroundings of Valencia are given.

The congress offers three attractive tours in the „Social Programme“ and a „Welcome Reception“ as well as a „Gala Dinner“

The accommodation in three hotel categories with links to the booking website and the links to the hotels are given.

The various possibilities for sponsors and users of the exhibition are mentioned again.

In „*The Historic Corner*”, I am starting with the very first commercially successful automobiles with combustion engines of the great inventors Benz, Daimler and Maybach.



Brigadier ret. Prof. Günter Hohl  
EAEC President

## Future Main Events

This year, one of the most important automotive meetings in Europe will be the:

### EAEC 2011 Congress

The Spanish Society of Automotive Engineers (STA) will host the 13th EAEC European Automotive Congress 2011, which will take place from June 14th - June 17th 2011 in Valencia, Spain.

The theme of the Congress is:

**The Automobile in the Second Decade:**  
Sharing all Energy Solutions

The venue of the EAEC 2011 Congress is the:

#### UNIVERSIDAD POLITÉCNICA DE VALENCIA



The University is located to the north of the city of Valencia in a peaceful setting that borders with traditional farmland.

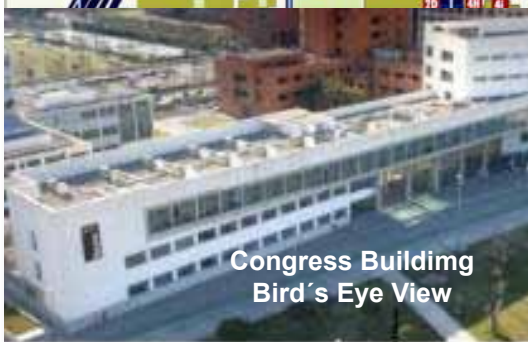
The Technical University of Valencia, Universitat Politècnica de València (UPV), was founded in 1968 as the Higher Polytechnic School of Valencia and became a university in 1971, however, some of its schools are more than 100 years old.

UPV is a public institution devoted to higher education, as well as to research and development (R&D) activities. The main scientific and technological domains are information and communication technologies, electric, electronic, mechanical and chemical engineering, civil engineering, architecture, food and agricultural technologies, business sciences and fine arts.

#### Congress & Exhibition Area



Congress building  
Front View



Congress Building  
Bird's Eye View



Congress Building

Exhibition

## TOPICS OF THE CONGRESS

**A**

### POWERTRAIN AND GREEN TECHNOLOGIES

- A1 Hybrid Drives
- A2 Electric Drives
- A3 Powertrain Performance
- A4 Fuels and Lubricants
- A5 Noise, Vibration and Harshness (NVH)
- A6 Environment and Vehicle Recycling

**D**

### MANUFACTURING AND PROCESS INNOVATION

- D1 Production Technology
- D2 Production Processes
- D3 Supply Chain and Logistics
- D4 Flexible Processes
- D5 New Quality Inspection Technologies

**B**

### NEW CONTROL SYSTEMS AND MATERIAL

- B1 Passenger Cars
- B2 Buses and Trucks
- B3 New Materials
- B4 New Vehicle Systems
- B5 TIC Systems

**E**

### SAFETY AND HUMAN FACTORS

- E1 Vehicle Safety
- E2 Human Factors and Safety
- E3 PMR Safety
- E4 Accident Analysis and Reconstruction
- E5 New HMI Technologies
- E6 Haptic Technologies

**C**

### NEW CONTROL SYSTEMS AND MATERIAL

- C1 Suspension
- C2 Steering Systems
- C3 Brakes
- C4 Tyres
- C5 Advanced Dynamic Vehicle Control

## CONGRESS SCHEDULE

**Technical Programmes**

**Accompanying Persons Programmes**

**Monday 13 June**

**Monday 13 June**



## CONGRESS SCHEDULE

### Technical Programmes

### Accompanying Persons Programmes

All excursions start at the  
**Meeting point:** Conference Building,  
 Registration Room. Building 6G. UPV

#### Tuesday 14 June

09:00 - 09:30	Opening Ceremony
09:30 - 13:00	Plenary Session
13:00 - 14:30	Lunch Break
14:30 - 16:00	Technical Sessions
16:16 - 16:30	Coffee Break
16;30 - 18:00	Technical Sessioions

#### Tuesday 14 June

### EXCURSION 1: VALENCIA CITY SIGHTSEEING AND ALBUFERA

Estimated length of the visit: 2 hours.  
 The visit will end at the Valencia City Hall.



#### Wednesday 15 June

09:00 - 11:00	Technical Sessions
11:00 - 11:30	Coffee Break
11:30 - 13:00	Technical Sessions
13:00 - 14:30	Lunch Break
14;30 - 16:00	Technical Sessioions
16:00 - 16:30	Coffee Break
16:30 - 18:00	Technical Session

#### Wednesday 15 June

### EXCURSION 2: HISTORICAL VALENCIA, CENTRAL MARKET TOUR AND TASTING OF TRADITIONAL FOOD

#### Thursday 16 June

09:00 - 11:00	Technical Sessions
11:00 - 11:30	Coffee Break
11:30 - 13:00	Closing Plenary Session
13:00 - 14:00	Farewell Drink

#### Thursday 16 June

### EXCURSION 3: CITY OF ARTS AND SCIENCES AND THE OCEANOGRAPHIC AQUARIUM

# CONGRESS REGISTRATION

The online registration is now available on the homepage

<http://www.eaec2011.com/>

**Reduced registration fees are available to:**

- Delegates who belong to one of FISITA's 39 national member societies  
Please visit [www.fisita.com/membership/members](http://www.fisita.com/membership/members) to see if you qualify
- Delegates from non-OECD countries – a list of OECD countries can be found at <http://www.oecd.org/>
- Students
- Speakers – one speaker per presentation is entitled to the reduced speaker fee.
- Session Chairs

**REGISTRATION AND TRAVEL**

VALENCIA, SPAIN

ACCOMMODATION

DELEGATE REGISTRATION

MEDIA & PRESS

VENUE

The congress fees in Euros are follows:

Delegate (FISITA member society)	760
Delegate OECD	810
Delegate non-OECD	600
Speakers, session chairs & poster authors OECD	600
Speakers, session chairs & poster authors non-OECD	460
Students	200
Day ticket	500
Accompanying person	200

## EXHIBITION & SPONSORING OPPORTUNITIES

The accompanying exhibition is an excellent opportunity to demonstrate your latest products and services, to present technology developments, or present the company itself.

The target groups of the congress are managers and specialists of car manufacturers, suppliers, logistical and freight companies, science, research and development specialists and representatives of international automotive organizations.

The exhibition is a perfect opportunity to retain present customers and gain new ones.

More details can be found on the congress homepage:  
<http://www.eaec2011.com/content/exhibition>





**EXHIBITION PACKAGE**

Has a price of 1,500 EUR (VAT not included) and includes an outdoor stand in white lacquered aluminum structure in the size of 12 m2 (3.00 / 2.80 m height).with additional equipment



**INFORMATION ON SPONSORSHIP PACKAGES**

The EAEC 2011 Congress provides multiple opportunities for sponsorship. It enables companies and other automotive organizations to participate and promote during the Congress.

To mention all benefits in this issue would extent the space of the Newsletter.

There are three main packages of sponsoring offered:

**SILVER PACKAGE**

**GOLD PACKAGE**

**PLATINUM PACKAGE**

The benefits are graded to the kind of packages. Some of the advantages are listed below:

**C**omplimentary full congress registrations and admission tickets to the Congress Dinner for several persons.

**D**isplay of company logo in the main session hall and acknowledgement in all congress and exhibition publications as well as placement of company logo in the congress bag.

**A**dvertisement in the announcements and in the Congress proceedings CD-ROM

**P**lacement of company logo on the congress website and brief description of the company profile with logo in the Final Programme booklet

**V**erbal acknowledgement at the opening of the congress and the exhibition

**T**he Platinum Package includes among other benefits the priority selection of two exhibition booths and the Gold package for one booth.

**CONGRESS INTERNET CENTRE**

Organizations are invited to sponsor the Congress Internet Centre, a multi-station computer centre networked with internet, e-mail and printer access for delegate use.

The three sponsors mentioned are announced in many ways and have complimentary congress registration.



**DELEGATE NAME BADGES AND LANYARDS**

Organizations are invited to be the exclusive sponsor of the name badges and lanyards/neck cords.

All delegates will be provided with a congress badge printed with the congress logo and the name of your corporation, and a lanyard printed with your corporate logo.

Participants must wear their name badge throughout the Congress and official Congress events.



**DELEGATE NOTEPAPER AND PENS**

Notepaper and pens printed with the company logo and will be included in the Congress Bags, given to each registrant at the congress.



## Accommodation

Five hotels in three categories are offered and can be directly booked.

These hotels can be found on the FISITA 2011 website:

<http://www.eaec2011.com/content/accommodation>

*Please find more details about prices and location on the above homepage!*

*Please note that the Valencia Grand Prix will be held soon after the EAEC Congress and book the hotel early!*

### HOSPES PALAU DE LA MAR \*\*\*\*\*

Navarro Reverter, 14, 46004



### NH LAS ARTES \*\*\*\*

Avenida Instituto Obrero, 28, 46003

<http://www.nh-hoteles.es/nh/es/hoteles/espana/>



### BARCELO \*\*\*\*

Avenida de Francia, 11, 46023

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



### NH CIUDAD DE VALENCIA \*\*\*

Avenida del Puerto, 214, 46023

<http://www.nh-hoteles.es/nh/es/hoteles/espana/>



### NH EXPRESS LAS ARTES \*\*\*

Avenida Instituto Obrero, 26, 46013

<http://www.hotelnhexpresslasartes.>



# Social Programme

The Social Programmes start with the  
**Welcome Reception on**  
**Monday, 13th June 2011, 20:00,** at the  
**Municipal Exhibition Palace**



The Exhibition Palace was designed by Francisco Mora Berenguer to be used as the municipal seat for the 1909 Regional Exhibition and the 1910 National Exhibition, where special events and celebrations were held.

Built in just seventy days as a temporary construction, the Modernist building, with its peculiar Neo-Gothic style, evokes the glorious past of Medieval Valencia, bringing together civil, religious and military Gothic architecture.

The Palace's merit undoubtedly lies in the harmony between the architecture and the sumptuary and industrial arts which, as in the work of Gaudí, are exquisitely represented here through the wrought and cast iron works, the ceramics, the stained glass, and the woodwork.



Advertisement for the 1909 Regional Exhibition



Exhibition Palace 1909 and now



All excursions start at the  
**Meeting Point:**  
 Conference Building,  
 Registration Room. Building 6G. UPV



**EXCURSION 1:**  
**VALENCIA CITY SIGHTSEEING AND ALBUFERA**  
**Date: Tuesday, June 14th, 2011**  
**Meeting time: 16:00**  
 Estimated length of the visit: 2 hours.  
 The visit will end at the Valencia City Hall.





**EXCURSION 2:  
HISTORICAL VALENCIA, CENTRAL MARKET TOUR  
AND TASTING OF TRADITIONAL FOOD**

**Date:** June 15th, 2011

**Meeting time:** 9:30 h.

Estimated length of the visit: 4 hours.



Estación del Norte  
(North Station)

This visit is focused on the historical city centre and the most outstanding monuments of the city such as the Estación del Norte (North Station), Torres de Serrano y Quart (Serrano and Quart Towers), Mercado Central (the Central Market), la Lonja (the old silk exchange), Plaza Redonda (the Round Square), the Cathedral, Plaza de la Virgen (Virgin Square) and the exterior of the Basilica and the Generalitat Palace.



(Serrano Towers),



Cathedral; Front view



**Paella** is a Valencian rice dish that originated in its modern form in the mid-19th century near Lake Albufera, a lagoon in Valencia, on the east coast of Spain.. Many non-Spaniards view paella as Spain's national dish, but most Spaniards consider it to be a regional Valencian dish. Valencians, in turn, regard paella as one of their identifying symbols.



**EXCURSION 3:  
CITY OF ARTS AND SCIENCES AND  
THE OCEANOGRAPHIC AQUARIUM**

**Date:** June 16th, 2011

**Meeting time:** 9:30 h.

Estimated length of the visit: 4 hours.



Palacio de las  
Artes Reina Sofía  
(Palace of Arts):



Museo de las  
Ciencias Príncipe Felipe  
(Science Museum):



Oceanographic Aquarium

# Sightseeing around Valencia

In this sightseeing trip, some three interesting cities in the **Province of Valencia, Sagunt, Llíria and Gandia** are presented.

The Province of Valencia is bordered by the provinces of Alicante, Albacete, Cuenca, Teruel, Castellón and the Mediterranean

Of the province's 2,267,503 people, one-third lives in the capital, Valencia, which is also the capital of the autonomous community. There are 265 municipalities in the province.

The city of **Sagunt** is located in the north eastern part of Valencia province, which offers a two millennia history written in ancient stone, a town of contrasts and contradictions, for it is both modern and ancient, new and old, rural and urban.

The Port of Sagunt is home to industry and tourism, which are the major economic activities, together with citrus fruit production

Sagunt has a changeful history beginning in the Bronze Age. The city was influenced occupied and destroyed by Greek, Phoenicians, Romans and the people from the emigration of nations.

After the Arab dominion in 1098, Sagunt was reconquered by El Cid.

Later, the city was severely damaged during the War of the Spanish Succession (1701-1714), the Peninsular War (1808-1814) and the Carlist Wars (1833).

With over 2,000 years of history, Sagunt has a wide range of remaining monuments which can transport the visitor back in time. Important monuments are:

**The Castle** declared as a national monument in 1931, remains as a silent witness of the battle between Saguntum and Hannibal.

**The Plaza de Almenara**, is the most Oriental part of the Castle, with ancient cisterns, Roman pavings and buildings from different periods.

**The Plaza de Santa Maria Magdalena**, is the nucleus of the Castle containing remains of the Roman forum, temples, shafts and columns, and a cistern sculpted in rock from the Roman period.

A visit through time brings us to the **Jewish quarter**, accessed through a portal with a round arch in the Calle del Castillo, known as the Portalet de la Juderia or the Portalet de la Sang (the 'Portal of Blood'), following the expulsion of the Jews by the Catholic Monarchs in 1492

**The Plaza de la Conejera** once formed part of the Arab fortress.



Sagunt; Castle



Sagunt; Jewish quarter  
Portal of Blood'



Sagunt;  
Roman amphitheatre



**Llíria** is the capital of the area known as Camp de Túria in the Province of Valencia. It is approximately 25 km north west of the city of Valencia, at an altitude of 164m.

The population in 2006 totalled approximately 21,500. The traditional economy is based on agriculture, but industries such as textiles, construction materials, plastics and furniture are becoming increasingly important.

Under Llíria lie the ruins of what was one of the most important Iberian cities in Spain.

The city is at the end of Valencia's metro train system.

Under the Romans, Llíria was as important as Valencia or Sagunto. The town is very rich in Roman remains, including a large Roman leisure centre with a temple, shops, pools and hot baths.

Recent archaeological excavations have uncovered one of Spain's largest-ever caches of buried coins in total some 6,000 silver denari, minted in the first and third centuries.

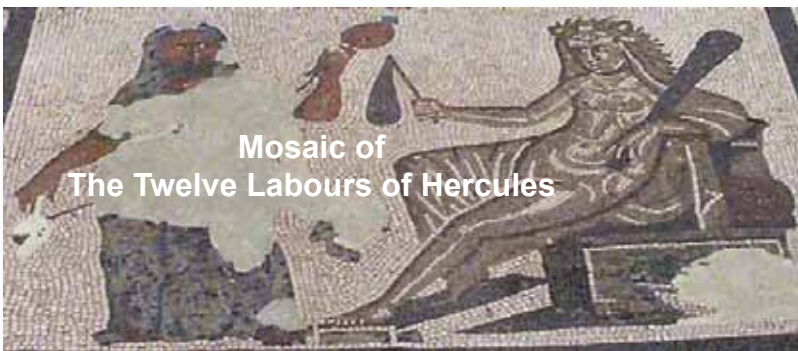
Another archaeological find was a mosaic of **The Twelve Labours of Hercules**, currently on show at the National Archaeological Museum of Spain in Madrid.



Llíria



Church San Miguel



Mosaic of  
The Twelve Labours of Hercules

One of the most common variations on the story of Hercules' and the 12 Labors is that Hercules undertook them to atone for the crime of murder.

Within that variation the order of the labors changes. Normally, canonical refers to what is accepted by most authorities, but in the case of the labors of Hercules, it's better than that. Those we consider the 12 canonical Labors of Hercules were carved into stone -- literally -- between 470 and 456 B.C. on the Doric

**Gandia** is a city and municipality in the Valencian Community, Eastern Spain, on the Mediterranean. Gandia is located on the Costa del Azahar, 65 km south of Valencia and 96 km north of Alicante.

It was an important cultural and commercial centre during the 15th and 16th centuries: in the 15th, it had a university. Perhaps Gandia is best known for the Borgias, through their family title, Duke of Gandia.

Today, Gandia is one of the largest coastal towns, with a population of over 80,000, and a thriving centre of commerce and tourism in the region.

There are two main zones, Gandia City, which has all the historical monuments, commercial activity and shopping, and Gandia beach, where apartments and summer residences used during the summer season are to be found.



## Other Events in Valencia

After the EAEC 2011 Congress, there is another exciting event.

The **European Grand Prix**, which will be held on 26 June 2011 at 14:00 local time at the Valencia Street Circuit in 2011.

**This is a special event in the Formula 1 calendar !**

The race will be held in the port of Valencia, where the 32nd America Cup took place. This will be the setting for a 21st century urban circuit, designed to ensure the safety of the drivers, as well as the comfort and enjoyment of the visitors. -



When the race concludes, why not take a 5 minute stroll down on to the beach, have a beer and chill out until the town comes to life again mid evening when the plethora of bars, restaurants and nite clubs burst into life.

Due to this event, there will be a high demand for hotels.

**Therefore, hotel accommodation for the EAEC 2011 Congress should be booked as soon as possible!**

The European Grand Prix in Valencia takes place around the exciting Marina street circuit where fans get a wonderful opportunity to get up really close and dirty to the action.

This F1 action at a frenetic pace, and you will not miss one second of it all around the circuit because almost every grandstand has a large screen TV for all the action replays.



Race information	
Laps	57
Circuit length	5.419 km (3.367 mi)
Race length	308.883 km (191.931 mi)
Number of times held	19
First held	1983
Most wins (drivers)	Michael Schumacher (6)
Most wins (constructors)	Ferrari (6)

Last race (2010):	
Pole position	Sebastian Vettel Red Bull-Renault 1:37.587
Podium	<ol style="list-style-type: none"> <li> Sebastian Vettel Red Bull-Renault 1h 40m 29.571s (184.421 km/h)</li> <li> Lewis Hamilton McLaren-Mercedes +5.042s</li> <li> Jenson Button McLaren-Mercedes +12.658s</li> </ol>



The **Automotive ENGINEER** periodical is the official EAEC Magazine and the leading magazine for automotive engineers.

**The Automotive Engineer Magazine is free for members of the national EAEC Member Societies.**

**To get free copies it is easy to apply via the national society.**

**The AE magazine is published 11 times a year. January and February are this year in a double issue**

**EAEC and AE cooperation**

- More editorial insight from senior industry figures facilitated by EAEC contacts
- Special content areas on AE-plus available only to EAEC members
- Special supplements –e.g. technical focus
- Special reports: industry insight and analysis.
- Announcements in the EAEC Newsletters about AE

AE, the official magazine of the EAEC



Please note that the EAEC logo is on the start page

# Automotive ENGINEER

 **SEARCH**

- NEWS
- TECHNOLOGY
- FEATURES
- BLOG
- GALLERY
- MAGAZINE
- EVENTS
- CASE STUDIES

**Magazine**



**THE MAGAZINE APRIL 2011**

In this issue

Cover story: The Focus is Ford's first truly global programme. AE finds out how Engineers in Europe and the US worked together to...

**A WORLD OF DIFFERENCE**

[View previous issues](#)

**April 2011**

Cover story: The Focus is Ford's first truly global programme. AE finds out how Engineers in Europe and the US worked together to deliver a smoother, quieter, smarter C-segment car.

Also in this issue we take a close look at the development of Lexus CT200h, Citroën C4 and the Honda Jazz Hybrid. This month's focus is on hybrid vehicles. Plus there's more news, columns and tech stories.

In addition to the hard copy of the Automotive Engineer magazine, the publisher also has very informative home page:

<http://www.ae-plus.com>

ae-plus.com is for all automotive engineers, executives, researchers and enthusiasts who wish to update themselves on the industry's technology, busi-

Both publications, the Magazine as well the website are in English language but it is intended by the publisher that the articles are written at a level of the English language which should be understood by all automotive engineers and other people who might be interested in automotive engineering no matter which country they come from.

## Future Automotive Events

### 23<sup>rd</sup> JUMV International Automotive Conference

Venue: Belgrade, Serbia  
19 – 21. April 2011  
Organizer: JUMV  
Website: <http://jumv.rs/en/>

### VTMS 10 Vehicle Thermal Management System

Venue: Gaydon, Warwickshire, United Kingdom  
15 - 19 May 2011  
Organizer: IMechE  
Website: <http://events.imeche.org/>

### Commercial Vehicles 2011

Venue: Steyr, Austria  
26 - 27 May 2011  
Organizer: VDI-FVT  
Website: <http://www.vdi.eu/>

### International VDI Congress Transmissions in Vehicles 2011

Venue: Friedrichshafen, Germany  
7 - 8 July 2011  
Organizer: VDI-FVT  
Website: <http://www.getriebkongress.de/>

### IAA 2011

Venue:  
15 - 25 September 2011  
Organizer: VDA  
Website: <http://archiv.iaa.de>

### CAR 2011

Venue: Pitesti, Romania  
2 - 4 November 2011  
Organizer: CAR 2011  
Website: <http://www.siar.ro/>

### Conference of Internal Combustion Engines: Performance, Fuel Economy and Emissions

London, United Kingdom  
29 - 30 November 2011  
Venue: London, United Kingdom  
Organizer: IMechE  
Website: <http://www.imeche.org>

### 32<sup>nd</sup> International Vienna Motor Symposium 2011

Venue: Vienna, Austria  
5 - 6 May 2011  
Organizer: OEVK  
Website: <http://www.oevk.at>

### 18<sup>th</sup> International Automotive Congress, Future Powertrains & Smart Mobility

Venue: Eindhoven, University of Technology  
16 – 17 May, 2011  
Organizer: Eindhoven, University of Technology  
Website: <http://www.automotivecongress.nl/>

### AMAA 2011

### 15<sup>th</sup> International Forum on Advanced Mi- crosystems for Automotive Applications

Venue: Berlin, Germany  
29 - 30 June 2011  
Organizer: VDI/VDE Innovation  
Website: <http://www.amaa.de/>



Venue: Valencia, Spain  
14 - 16 June 2011  
Organizer: STA and EAEC  
Website: <http://eaec2011.com/>

### Electronic Systems for Motor Vehicles

Venue: Baden - Baden, Germany  
12 - 13 October 2011  
Organizer: VDI-FVT  
Website: <http://www.vdi.de>

### X International Conference on Braking and Safety

Venue: Lodz, Poland  
3 - 4 November 2011  
Organizer: Association of Polish Mechanical Engineers  
Website: <http://www.ptim.simp.p>

## Post Conference Information



**International Advanced Mobility Forum**  
8 - 9 March 2011, during the Geneva International Motor Show

The **IAMF (International Advanced Mobility Forum)** is a scientific and public forum dedicated to individual mobility in the future, in other words, the cars of tomorrow.

Proceedings are available via:  
Exhibition Manager: Magali Fakhry  
E\_mail: [iampf@geneva-palexpo.ch](mailto:iampf@geneva-palexpo.ch)



**23 Mar - 25 Mar 2011**

Budapest, Hotel Intercontinental, Hungary  
Proceedings are available via:  
E\_mail: [info@icm.ch](mailto:info@icm.ch)

After the big success of the 10th International Automobile Recycling Congress in Basel, the Swiss organizer ICM AG held the 11th Congress IARC 2011 in Budapest, Hungary.

Delegates from industry, authorities and academia discussed and presented news and challenges of the manufacturing and end-of-life vehicle (ELV) business.

The congress brought together the various links in the ELV recycling chain such as car manufacturers, metal and plastic scrap traders, recyclers, shredder operators and policy-makers from around the world.



The 23rd JUMV International Automotive Conference was held in Belgrade, Serbia, on 19-21 April 2011, under FISITA /and EAEC patronage.

**The chairman of this event was the JUMV President, Prof. Dr. Cedomir Duboka, Professor of Automotive Engineering**

More than 60 papers were presented during this three-day Conference by authors from 20 countries, and 125 persons participated.

Prevailing general opinion is that this conference was a great success.

Those willing to purchase the Conference Proceedings are recommended to contact the JUMV. Shortly, the CD Conference Proceedings will also be available at the FISITA Bookstore.

The Conference started at the historic building of **SANU - the Serbian Academy of Science & Arts**.

The Serbian Academy of Sciences and Arts was founded by law (as the Serbian Royal Academy) in 1886, by **King Milan** and is the highest academic institution in Serbia.



**Building of the Serbian Academy of Sciences & Arts**



**Prof. Cedomir Duboka,**  
Congress Chairman



**Prof. Jovan Todorović**  
FISITA 2006 Congress Chairman



**FISITA VP Günther Hohl;**  
FISITA Address




 THE HISTORIC CORNER

Before starting with the history of the three early main developers of the automobile an early pioneer of a car with a combustion engine was the Danish motor and car manufacturer Albert Hammel (1835 - 1903).

Hammel is not so well known as the other pioneers before the “triumvirate” Benz, Daimler and Maybach. He probably having built around 1888 a gasoline-engine car, which is still preserved in the Copenhagen and the Technical Museum.

For a long time, it was not clear in which year the car was built. However, 1888 as the year of production is now widely recognized.

The Hammel automobile reached through his participation in the **London-Brighton Run in 1954** for the first time attention for the posterity.

*London-Brighton Run is Perhaps the most famous veteran car rally in the world*

*Formally called the London to Brighton Veteran Car run. It is the place to see truly classic cars in action.*

*The first London to Brighton car run took place in 1896.*

*Importantly this is not a car race. The drivers are allowed to stop (there are two official stopping points) and there is a maximum speed of 20 mph. The run brings together veteran car enthusiasts from all over the world, and gives the public a great chance to see really old cars in full working order.*

*The veteran cars are all lovingly restored and come in a huge variety of marques.*



Albert Hammel (1835 - 1903)  
driving his car



The original Hammel car

Special features included a reverse steering, which means that the steering wheel had to be turned to the right if you wanted to drive to the left. The Hammel car had a gearbox with forward and reverse gears..

The car represented approximately the development of the late 1880s in Germany, as dictated by the three inventors

#### Vehicle Data

- Four-stroke two-cylinder engine,
- Displacement 2720 cm<sup>3</sup>
- surface carburetor,
- hot tube ignition,

At the same time, the car of Siegfried Marcus in the Technical Museum in Vienna, mentioned in issue 1/2011, has one parallel.

Both vehicles were prototypes that never went into production and remained without any further influence on the subsequent development of the automobile

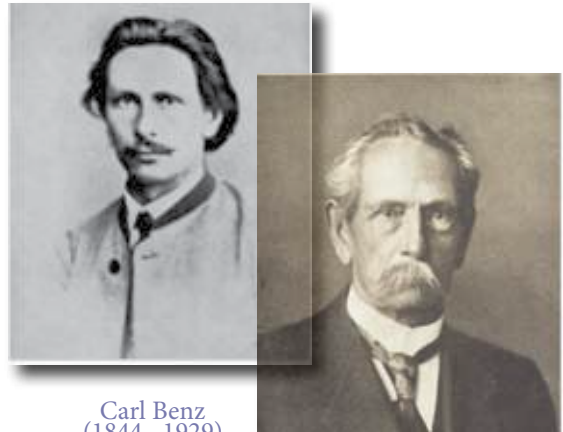
**The Hammel and the second Marcus-wagon, are the two oldest, original cars in the world!**

**„Time invented the automobile”.**



**Karl Friedrich Benz**, (1844 –1929) in later years changed his first name to Carl Friedrich Michael Benz. Despite that there were other inventors before him who had designed vehicles with combustion engines. He is generally regarded as the inventor of the gasoline-powered cars as with his invention the development of the automobile was initiated.

Other German contemporaries, **Gottlieb Daimler** and **Wilhelm Maybach** (also mentioned in this issue) working as partners, also worked on similar types of inventions, without knowledge of the work of the other, but Benz patented his work first and, after that, patented all of the processes that made the internal combustion engine feasible for use in cars. In 1886 Benz was granted a patent for his first car.



Carl Benz  
(1844 –1929)

When he was two years old, his father was killed in a railway accident. Despite living in near poverty, his mother strove to give him a good education. Benz attended the local Grammar School in Karlsruhe and was a prodigious student.

In 1853, at the age of nine, he started at the scientifically oriented Lyceum. Next he studied at the Poly-Technical University (also called the „Fridericiana“)

Benz had originally focused his studies on locksmithing, but eventually followed his father's steps toward locomotive engineering. In 1860, aged fifteen, he passed the entrance exam for mechanical engineering at the University of Karlsruhe. Benz was graduated in 1864 at nineteen. During these years, while riding his bicycle, he started to envision concepts for a vehicle that would eventually become the horseless carriage.

Following his formal education, Benz had seven years of professional training in several companies in Mannheim, in Pforzheim and finally in Vienna for a short period. However, he did not feel well in any of these jobs.

In 1871, at the age of twenty-seven, Carl Benz launched a mechanical workshop together with his co-partner August Ritter in Mannheim, also dedicated to supplying construction materials.



Bertha Benz  
(1849 - 1944)

The enterprise's first year was a complete disaster. Ritter turned out to be unreliable and local authorities confiscated the business. The difficulty was solved when Benz's fiancée, Bertha Ringer, bought out Ritter's share in the company using her dowry.

In 1872 Carl Benz and Bertha Ringer married, later having five children:

Despite such business misfortunes, Carl Benz led in the development of new engines in the factory he and his wife then owned and in 1878, he began to work on new patents. First, he concentrated all his efforts on creating a reliable gas two-stroke engine in 1878 and a patent was granted in 1879.

Carl Benz showed his real genius, however, through his successive inventions for his two-stroke engine. Benz soon patented the speed regulation system, the ignition using sparks with battery, the spark plug, the carburettor, the clutch, the gear shift and the water radiator.

Problems arose again with the banks at Mannheim and Benz and his wife were forced to improvise an association with new co-partners in order to get additional bank support.

The company became the joint-stock company Gasmotoren Fabrik Mannheim in 1882.

After all the necessary incorporation agreements, Benz was unhappy because he was left with merely five percent of the shares and a modest position as director. Worst of all his ideas were not considered when designing new products, so he withdrew from that corporation just one year later, in 1883.

Benz's lifelong hobby brought him to a bicycle repair shop in Mannheim. He and the two owners of the repairshop founded a new company producing industrial machines: **Benz & Company Rheinische Gasmotoren-Fabrik**, which quickly grew to twenty-five employees and soon began the production of static gas engines as well

The success of the company gave Benz the opportunity to indulge in his old passion of designing a horseless carriage. Based on his experience with, and fondness for, bicycles, he used similar technology when he created an automobile. It featured wire wheels (unlike wooden ones of carriages) with a four-stroke engine of his own design between the rear wheels, with a very advanced coil ignition and evaporative cooling rather than a radiator.

Power was transmitted by means of two roller chains to the rear axle. Carl Benz finished his creation in 1885 and named it the **Benz Patent Motorwagen**.

The 1885 version was difficult to control, leading to a collision with a wall during a public demonstration. The first successful tests on public roads were carried out in the early summer of 1886.



Benz Motorwagen (1886)

The next year, Benz created the Motorwagen Model 2 which had several modifications, and in 1887, the definitive Model 3 with wooden wheels was introduced, showing at the Paris Expo the same year.

## Benz began to sell the vehicle in 1888, making it the first commercially available automobile in history!

Early customers could only buy gasoline from pharmacies that sold small quantities as a cleaning product. The early 1888 version of the Motorwagen had no gears and could not climb hills unaided.

An important part in the Benz story is the following first long distance automobile trip, where entrepreneurial Bertha Benz, “supposedly without the knowledge of her husband”, on the morning of August 5, 1888, took this vehicle on a 106 km trip from Mannheim to Pforzheim to visit her mother taking her sons Eugen and Richard with her.

It had been her intention to demonstrate the feasibility of using the Benz Motorwagen for travel and to obtain publicity that would make people aware of it, in the manner now referred to as, “marketing”.

Today the event is celebrated every two years in Germany with an antique automobile rally. In 2008 the Bertha Benz Memorial Route was officially approved as a route of industrial heritage of mankind because it follows Bertha Benz’s tracks of the world’s first long-distance journey by automobile in 1888.

Now everybody can follow the 194 km of sign-posted route from Mannheim via Heidelberg to Pforzheim (Black Forest) and back.

Benz’s Model 3 made its wide-scale debut to the world in the 1889 World Fair in Paris and about twenty-five Motorwagens were built between 1886 and 1893. The great demand for stationary, static internal combustion engines forced Carl Benz to enlarge the factory in Mannheim, which had grown in the interim from 50 employees in 1889 to 430 in 1899.

During the last years of the nineteenth century, Benz was the largest automobile company in the world with 572 units produced in 1899 and became a joint-stock company. In 1895, Benz designed the first truck in history, with some of the units later modified by the first buses in history.







First bus in history:  
a Benz truck (1895)

The intention now was to create a less expensive automobile suitable for mass production. One of these models was the “Victoria”, a two-passenger automobile with a 3-hp engine, which could reach the top speed of 11 mph and had a pivotal front axle operated by a roller-chained tiller for steering. The model was successful with 85 units sold in 1893.

In 1894, Benz improved this design in his new “Velo” model. This was produced on such a remarkably large scale for the era—1,200 total from 1894 to 1901—that may be considered the first production automobile. The Benz Velo also participated in the first automobile race, the 1894 Paris to Rouen Rally.

In 1895, Benz designed the first truck in history, with some of the units later modified by the first buses in history.



Carl and Bertha Benz  
„Victoria“ Model



„Velo“ Model

Benz & Cie was in competition with Daimler Motoren Gesellschaft (DMG) in Stuttgart which began to challenge the leadership of Benz & Cie.

In October 1900, the main designer of DMG, Wilhelm Maybach, built new car named Daimler-“Mercedes”.



**Benz-Parsifal**  
 Touren-Automobile  
 sind über die ganze Erde verbreitet  
**Niemand**  
 kann sich durch die vielen in und außer-  
 wärtigen Automobil-Expositionen rechtlich  
 sondern heißt nur die Vorkämpferin  
**Benz-Parsifal**,  
 die 20 jährige Erfahrungen verkörpert  
 Benz & Cie., Rheinische Gasmotoren-Fabrik  
 Actiengesellschaft, Mannheim

„Parsifal“ Model

Benz countered with “Parsifal”, introduced in 1903 with a vertical twin engine that achieved a top speed of 37 mph (60 km/h).

Carl Benz announced his retirement from design management on January 24, 1903, although he remained as director on the Board of Management through its merger with DMG in 1926 and remained on the board of the new Daimler-Benz Corporation until his death in 1929.

**Gottlieb Wilhelm Daimler** (1834 –1900) was an engineer, industrial designer and industrialist, born in Schorndorf (Kingdom of Württemberg, a federal state of the former German Confederation), in what is now Germany.

He was a pioneer of internal-combustion engines and automobile development. He invented the first high-speed petrol engine and the first four-wheel automobile.

Daimler and his lifelong business partner **Wilhelm Maybach** were two inventors whose goal was to create small, high-speed engines to be mounted in any kind of locomotion device.

Therefore the path of life of these two automobile pioneers can not be seen separately



**Gottlieb Daimler**  
(1834 –1900)

Gottlieb Daimler was the son of a baker named Johannes Däumler (Daimler) and his wife Frederika, from the town of Schorndorf near Stuttgart, Württemberg. By the age of 13 (1847), he had completed six years of primary studies where he expressed an interest in engineering. The next year, he started studying gunsmithing, building a double-barreled gun.

In 1852 when eighteen, Daimler decided to take up mechanical engineering, and left his hometown. He continued his education at the Royal Vocational School of Württemberg. From 1853-1857 he worked for a mechanical engineering company Grafenstaden (Alsace).

Between 1857 and 1859 he studied mechanical at the Polytechnischen Schule (Politechnical school) in Stuttgart.

From 1860 to 1862 Daimler carried out educational journeys to Paris, Leeds, Manchester and Coventry. After that he worked for two metal ware companies. In the second one he met Wilhelm Maybach.

In 1867, he married Emma Kurz and they had five children.

In 1872 (at age 38), Daimler and Maybach moved to work at the world's largest manufacturer of stationary engines at the time, the **Deutz-AG-Gasmotorenfabrik in Cologne**.

It was half-owned by Nikolaus Otto, who was looking for a new technical director. As directors, both Daimler and Otto focused on gas-engine development while Maybach was chief designer.

Deutz-AG-Gasmotorenfabrik



After leaving Deutz-AG, Daimler and Maybach started to work together. In 1882, they moved back to Stuttgart in southern Germany, purchasing a cottage in Cannstatt.

In the garden, they added a brick extension to the roomy glass-fronted summer house and this became their workshop.

Daimler „Reirwagen“



Unbeknownst to Otto, Daimler, and Maybach, in Mannheim during 1878 Karl Benz was concentrating all his efforts on creating a reliable two-stroke gas engine based on the same principle. Benz finished his engine on December 31, 1878, and was granted a patent for his engine in 1879.

In late 1885 Daimler and Maybach developed the first of their petrol engines. In 1885, they created a carburettor which mixed gasoline with air allowing its use as fuel. In the same year Daimler and Maybach assembled a larger version of their engine, still relatively compact.

In November 1885, Daimler installed a smaller version of this engine in a wooden two wheeler frame with two outrigger wheels, creating the first internal combustion motorcycle vehicle with gas or petroleum drive machine. It was named the "Reitwagen" (riding car). Maybach rode it for three kilometers alongside the river Neckar, from Cannstatt to Untertürkheim, reaching 12 km/h.



First Daimler truck  
1898



First Daimler car  
1886



The German inventor **Wilhelm Maybach** was born 1846, in Heilbronn, Württemberg, Germany.

At the age of three years, his parent died. After the death of the mother, the father committed suicide by drowning.

Wilhelm lived for 13 years in an orphan house in Reutlingen, where children from poor families, received education and training, he as a draftsman and designer.

Maybach met Gottlieb Daimler there, for the first time. Daimler was responsible as head of the engineering works for the orphan house and was assigned Maybach as his assistant.

From these teenage years they were great friends and associates of one another. Maybach accompanied his patron Daimler to various places in Germany.

In 1873, he follows Daimler to the gas engine manufacturer Deutz AG in Cologne, where he headed the design office. There Maybach bring the combustion engine with spark ignition, gasoline engine, a construction of Nikolaus Otto, for mass production.

About 1882, Maybach and Daimler formed a partnership to develop the internal combustion engine. In 1885, they patented an efficient, light four-stroke engine, which was to be one of their most important engineering feats.

That same year, they mounted the engine first on a bicycle to produce perhaps the world's first motor cycle, and about a year later they used the engine to propel a modified horse carriage.

In 1878 Maybach married in Bertha Wilhelmine Habermahs (1851-1931), and they had three children, two sons and one daughter.

Differences between Daimler and Otto caused Daimler to start his own business. Maybach followed Daimler to his workshop in Cannstatt. As technical director at Daimler-Motoren-Gesellschaft, he was instrumental in the automotive development of the above-mentioned engine.

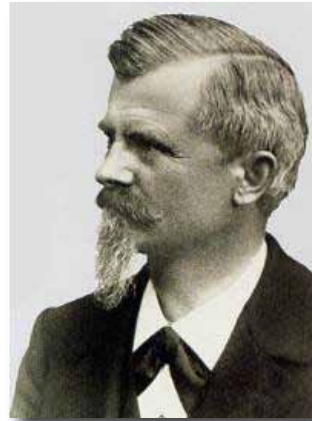
By 1900, he designed on the initiative of the Austrian businessman and Consul General **Emil Jellinek** (1853-1918) the Mercedes-Simplex, a racing car with a 35-hp four-cylinder engine and two carburetors. The vehicle, equipped with Maybach's invention, the honeycomb radiator and the transmission gear set, was for that time the car of the future. Jellinek named the after model after his daughter "Mercedes".

In 1909, he started his own business with his son Charles, born 1879, and the two founded the company Maybach-GmbH in Bissingen / Enz, producing the Zeppelin engines and later produced luxury cars in Friedrichshafen.

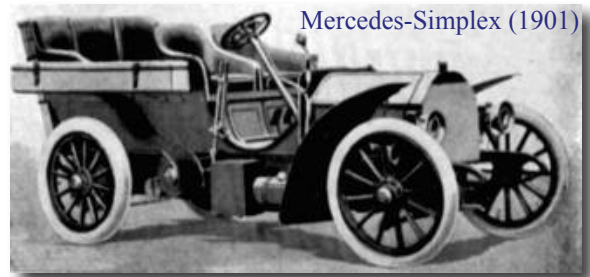
Wilhelm Maybach was awarded as an honorary doctor in 1916 from the Technical University of Stuttgart.

Wilhelm Maybach died in 1929 in Stuttgart-Bad Cannstatt and was buried close by Gottlieb Daimler.

Today, the automobile brand Maybach is owned by the Daimler.



Wilhelm Maybach (1846 - 1929),



Mercedes-Simplex (1901)



Emil Jellinek (1853-1918)



Adrienne Manuela Ramona „Mercedes“ Jellinek (1889 - 1929)



Old Maybach car ,Zeppelin Museum, Friedrichshafen, Baden\_Wuerttemberg, Germany

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