

# Auto-Fokus

Issue 4 / July 2017

## Commotion in the automotive industry

Sensational developments in the worldwide automotive industry are in the news almost every day. They include the takeover of Opel by PSA, the spectacular cooperation between an Indian automotive manufacturer of Tata and VW just as well as ceaseless new announcements regarding the driverless car.

The times are changing. The times are good for newcomers and challenging for all those who have long been established in the market. This includes the basic structures of automotive manufacturing which have remained almost unchanged since the days of Henry Ford.

So, it is quite amazing when a professor in Aachen claims that he has re-invented automotive design, launching a new vehicle generation, in this case a city truck together with the partner Deutsche Post.

How about the automation technology for this new generation of vehicles? This is what we ask ourselves every day to check the areas on which we will focus our future activities.

The recently signed cooperation with SINOVA, the manufacturer of AGVs – automated guided vehicles – is an answer to this question which means that we will play a part in this exciting segment in the future too.

The automotive industry stays in motion.

Kind regards,



Olaf Tüнкers

## RWTH Aachen wants to revolutionize electric vehicles

For Prof. Günther Schuh, head of the Laboratory for Machine Tools and Production Engineering (WZL) in Aachen, the negative comments on his initial design drafts for an electric car were an incentive that motivated him to continue the project. As a consequence, he contributed to Deutsche Post now pioneering with their own electric vehicles for city logistics.

However, what is actually pushing him is the idea that an electric vehicle can have a completely new design. He simply makes a virtue out of necessity: After all, a very rigid and safe trough must be designed for the battery set. This robust basic construction challenges the conventional vehicle concept of a monocoque, paving the way for a new approach to small electric vehicles.

The shell is completely made of thermoplastic which reminds us a little of the Trabant car. Expensive press parts are just as superfluous as the coating because the coloured parts



Electric car e.GO

are bonded or processed directly. This approach reduces not only the manufacturing costs but above all the investment costs. The construction of a new production line would cost millions while the model developed in

Aachen requires only a six-digit investment.

The vehicle from Aachen thus challenges the conventional production process and could become a blueprint for the future city e-mobile.

## Solar road

It was already in last December that the world's first solar panel road was opened in Normandy in the north of France.

For this purpose, an area of 2,800 sqm was equipped with particularly sturdy solar panels. In spite of the cars passing, they generate enough power to cover the entire electricity demand of the neighbouring village with 5,000 inhabitants.

The utilisation of existing areas has considerable potential for the genera-

tion of renewable energies. Even though the costs and production capacity compared to conventional systems is often criticized, the prototype on the road met with great international response. In the meantime, solar roadways are being tested all over the world, also in Germany. The Solmove project has announced to open a 150 metre long test road near Cologne this year.



Solar road in France

## France stops combustion engine

After the Swedish car maker Volvo has announced that it will produce only hybrid or electric cars from 2019, an entire country now follows suit.

France has tackled its environmental target of becoming carbon neutral by 2050 once again. One of the measures to reach this ambitious goal is to stop selling combustion engines by 2040.

Various automotive manufacturers have already started to develop viable strategies to achieve this. The French government also wants to support low-wage earners with a replacement incentive.



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## No more exterior mirrors required in Japan



Vehicle without exterior rearview mirror

In Japan, series production of the first car models without exterior mirrors will start as early as in August. The mirrors will be replaced by cameras integrated in tiny exterior parts or door handles. Assisted by systems located in the rear window, the display in the cockpit shows the area surrounding the car.

This has numerous advantages. No blind spot, no blinding from the sun or

full beams and a positive contribution to fuel consumption due to improved aerodynamics.

German automotive manufactures have started to tackle this issue, too. The first vehicles without a rearview mirror will be series-produced in the EU as from 2018.

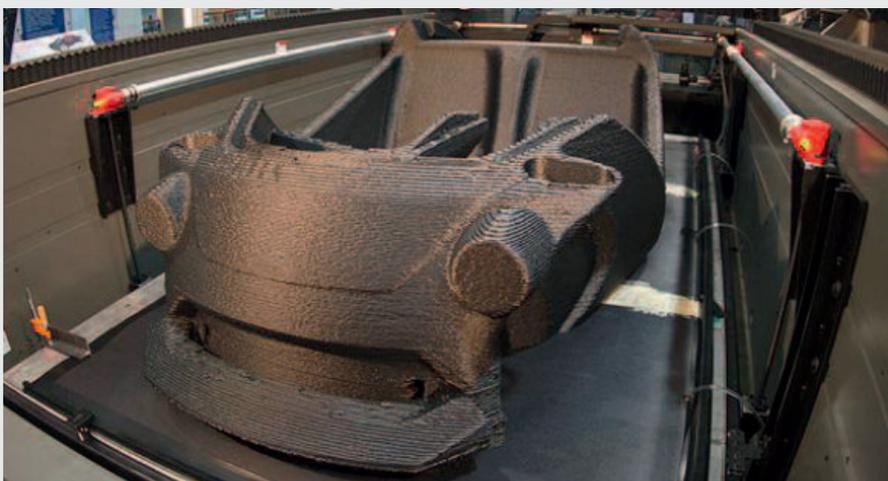
## 3D printing

No matter whether you look at a small start-up company or the automotive giant Mercedes-Benz – the 3D printer has become increasingly popular in automotive manufacturing.

While the US-based start-up company Local Motors is printing components such as wheel wells, rocker panels or interior trims for the production of the autonomous mini bus "Olli" in Berlin, Mercedes-Benz in Stuttgart has started use a 3D printer to provide spare parts like covers, spacers, spring caps, air and cable conduits, brackets, suspensions and controlling

elements for the former version of the current Actros truck on demand.

Due to various chemical and physical melting and hardening processes, the layered components consisting of materials such as plastic, resin, ceramics and metal meet the same requirements as the classical materials and may be provided at short notice.

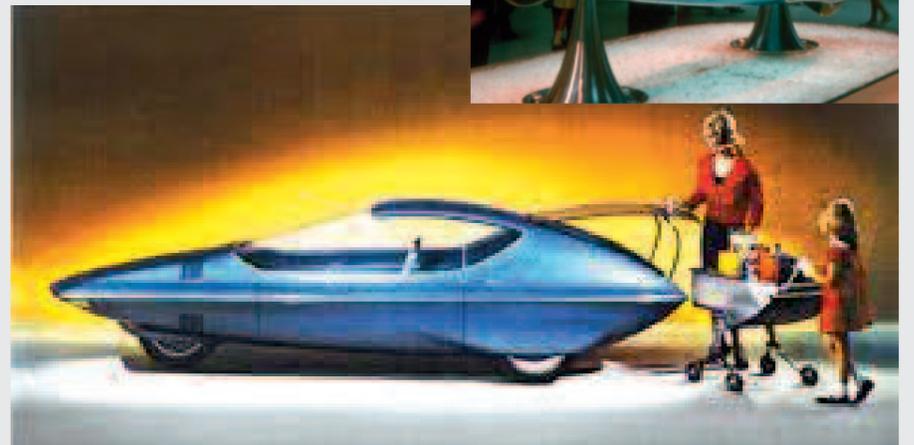


## GM shopping car(t)

Two doors, three wheels, turning by 180° for easy parking, a cockpit without a steering wheel, only with two large control knobs and two small buttons, a rail to protect against collisions and an electric loading hatch made of glass. This was the "RunAbout" GM presented at their "Futurama" in-house exhibition back in 1964.

The special feature of this city car was an integrated shopping cart with wheels folding out automatically. The vision of a city car equipped with electric motor and a range of 150 km to be reloaded conveniently during the night.

Today, this appears no longer far-fetched. And still, the idea which was quite innovative back then did not make it to the streets as a motor was not available.



Shopping car with integrated shopping cart – the RunAbout from GM

## Stuttgart fed up with diesel

Diesel-powered cars have gained a bad reputation. In addition to the high particle pollution, the high nitrogen dioxide emission is a heavy burden on the environment.

In Stuttgart, the figures measured in 2015 were 87 micrograms per cubic metre of air – with a maximum of 40 micrograms allowed. This is one of the reasons why several countermeasures including the complete ban of diesel vehicles are currently being discussed, not only in Stuttgart.

While the Deutsche Umwelthilfe

(DHU) association has filed a suit for a Germany-wide diesel ban, major cities like Paris, Madrid, Athens and Mexico City want to achieve a total ban of diesel vehicles from city traffic by 2025. The inherent prohibition is already leaving its mark on the sales figures. The investment bank UBS projects a drop of the world market share of diesel engines from currently 13.5% to 4% in 2025.



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## Current vehicle projects

These are some of the cars Tünkers is currently working for



Audi A6 Elektro



Jaguar J-Vogue



Porsche 911



Volvo XC40



Daimler M-Klasse



Land Rover Defender



Tesla Model 3



VW T-Roc

## European capital of the automotive industry

Not least since the takeover of Opel by the PSA Group has Paris started to develop into a European capital of the automotive industry.

While the number of cars produced here has decreased to almost zero in the last few years, the situation was quite different 50 years ago. The R4CV, nick-named "motte de beurre" (lump of butter), was produced by Renault on the Île Seguin for years and later on, the R4, France's people's car. It was as late as 1992 that production was stopped here. Currently, there are only the plants of PSA and Renault left in the Paris region, manufacturing the DS3 and Peugeot 208 as well as the Clio and Zoe models.

However, Renault-Nissan and Peugeot are based in Paris today which means that the most important development centres and headquarters of the French automotive industry can be found here. These two car makers sell 13.05 million vehicles worldwide.

But Paris has more to offer than cars, of course. Here are our travel tips:

**Hotel**  
Hotel CRAYON  
25, rue du Bouloi, Paris  
<http://www.hotelcrayon.com>  
- small, charming rooms, perfect location near Metro station and Louvre museum -

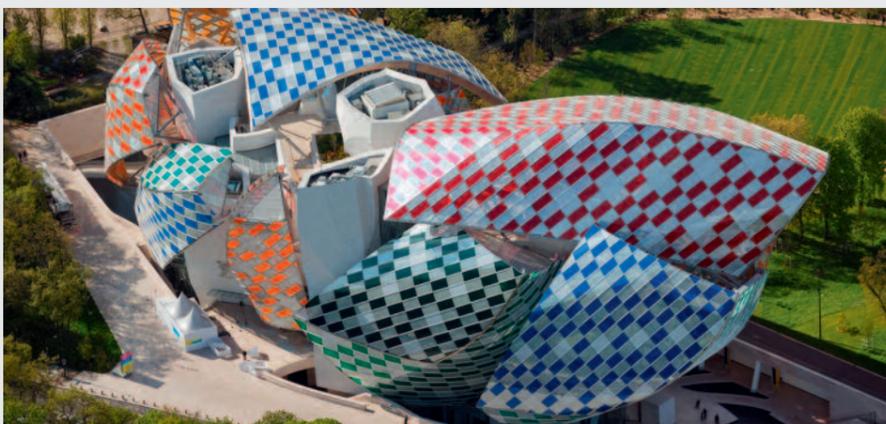
**Hotel**  
Hotel Lutece  
65 Rue Saint-Louis en l'Île, 75004 Paris  
<http://www.paris-hotel-lutece.com/>  
- right in the heart of Paris! -

**Restaurant**  
Le Chamarré Montmartre  
52 rue Lamarck, 75018 Paris  
- excellent cuisine, good value for money -

**Museum**  
Fondation Louis Vuitton  
App  
<http://www.cool-cities.com>



Former Renault plant on the Île Seguin



Fondation Louis Vuitton



Renault R4CV

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## TUNKERS New Factory China

Since 2003, TÜNKERS has been operating in Shanghai. From a small sales office with one employee, TÜNKERS China developed to the largest location outside Germany with its own production, manufacturing, design, development and distribution, and more than 150 employees.

The existing building at the Shanghai / Jiading site has become too narrow. Because of that we decided to tackle the new building on the green field. The new factory will be located in Taicang. According to the current plans, the construction of the new factory will begin in 2018, which will enable a production area of 20,000 m<sup>2</sup> on a plot of over 30,000 m<sup>2</sup>.

With the completion scheduled for the end of 2018, TÜNKERS China will be even broader, expand the product range, deepen the local value creation and thus meet the increased demand of Chinese customers.



Signing of the purchasing documents 11th of May 2017

## Symposium with international flair

This year again, the automation specialist TÜNKERS opened its doors to its special symposium, this time under the motto Automation AutoNom.

On two days, from 18 to 19 May, 409 visitors from Belgium, Brazil, China, the Czech Republic, France, India, Italy, Japan, Mexico, Netherlands, Spain, Thailand, Turkey, Great Britain, Austria, Poland, Portugal, Romania, Russia, Sweden, Slovakia, South Korea, USA and Germany met to discuss new approaches and ideas for automation in car body construction at more than 138 presentations and in creative discussions and specialist workshops.

In addition to the TÜNKERS Group with the brands TÜNKERS, EXPERT, HELU and SOPAP, partner companies also presented their products and services on a 1,710 sqm exhibition area, adjacent to the Ratingen production halls.

This year, a focus was on the topic of autonomous automation with AGVs and Co. in automotive production. Automation and automotive production already operate autonomously. Driverless transport systems, robots and processes without human intervention have already entered the factories. Now the aspect is on "what" becomes autonomous and "how".

Drones for the express supply, robots to AGVs, self-safe components, autonomous conveyors, integrated punching and welding processes ... and the question of the right

algorithms and techniques for the design and control of the whole without jeopardizing the safety of humans and processes.

On these and other topics the traditional company from Ratingen presented various techniques and novel solutions with its slogan "Ingenuity in series". The TÜNKERS meeting and show concept has proven its worth over 14 years and is generating increasing attention in the industry.



For more information about products and applications mentioned in this issue, please contact:

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