

Using aluminium to make mobility more efficient

“Mobility is a socio-political task that offers opportunities and challenges for everyone.” With this statement, Dr.-Ing. Hinrich Mählmann, President of Gesamtverband der Aluminiumindustrie (GDA), set the tone as the host of EAC - European Aluminium Congress 2019.

The guiding theme of this year's EAC was 'Aluminium and Mobility'. The various potential uses of aluminium were presented together with potential further developments that will make vehicles and other means of transport even lighter and more energy-efficient in the future. More than 200 experts from the aluminium industry and its customer industries and scientists and politicians discussed innovative developments, new technologies, strategies and the prospects for aluminium in future mobility applications and solutions.

More efficient mobility as a political topic and new technical developments

At the opening ceremony, Hinrich Mählmann said, “EAC is a congress that aims to take a joint look into the future - into both the future of our material and the future of our customers.” He and many other speakers agreed that it was not a question of creating a car-free future, but of having more efficient mobility in which all forms of mobility had to be included.

In this respect, Dr Mählmann described this development as being both a curse and a blessing for the aluminium industry: a curse because it is detrimental in some ways to the aluminium industry's established customers and a blessing because changes in mobility will open up many new opportunities. In every case, the transformation to new forms of mobility will mean finding the best, most efficient and most convenient way to get from A to B. “Aluminium is the material that can handle the major tasks and will play a major role in achieving efficient and climate-neutral mobility in future”, he added.

In his keynote address, Dr Tom Kirschbaum, CEO and founder of Door2Door GmbH, pointed out that mobility has become a political issue. This also results in the need to achieve technological change, i.e. the replacement of the combustion engine by the electric motor in the car.

In her presentation, Dr Blanka Lenczowski, a materials engineer at aircraft manufacturer Airbus, diverted the audience's attention from socio-political issues to the role of aluminium in the present and in the foreseeable future. There is no denying aluminium's successful contribution to aircraft construction. At the same time, however, it is just as unmistakable that aluminium has already passed its zenith as a construction material in certain areas. The trend is towards the increasing use of high-strength plastics, fibre-reinforced composite materials, which are more expensive than aluminium but also considerably lighter. In this respect, Dr Lenczowski emphasised the special role of digitalisation as an 'accelerator of technical development'.

The young generation and 'de-ideologisation' of the car

The panel discussion at the congress focused in particular on the changing attitude of the younger generation towards the car. For many young people, a private car is incomparably less attractive than for their parents' generation. Using public transport, at least in the big cities, is something they do every day.

Hinrich Mählmann pointed to the large differences between rural and urban regions, where the reaction of young people would not be the same by any means. According to his assessment, global automobile production will therefore rise again after a certain break in growth. In this respect, Dr Kirschbaum insisted on the need to 'de-ideologise' the car. In the long run, the gap between the different means of transport will continue to close.

Aluminium as the most efficient solution for future mobility

In the four sessions at EAC 2019, experts from industry and research provided information on the topics 'Automotive', 'Markets', 'Processes, Heat Treatment and Joining Technologies' and 'Surface, Additive Manufacturing, Recycling'. The presentations demonstrated that besides the current challenges like globalisation, electrification and autonomous driving, reducing vehicle weight is still an important factor for the automotive industry in order to reduce CO2 emissions in conventionally powered vehicles and increase the operating range of electrically powered vehicles.

The current market situation is challenging for the automotive industry due to the global decline in the passenger car market in 2019. In addition, the transformation process requires large investments. The aluminium industry and its main customer, the automotive industry, are facing major challenges in this area of conflicting interests. Nevertheless, the automotive industry remains the driving force for innovation and growth. The speakers concluded that aluminium is in any case the most efficient solution for automotive structural applications and future developments in the electromobility market.

"EAC 2019 has demonstrated impressively that the use of aluminium can significantly reduce vehicle weight even further," was the conclusion drawn by Marius Baader, Executive Director of GDA. "The use of aluminium makes a significant contribution to energy-efficient and thus ecologically sustainable mobility."

About the EAC:

The congress held in Düsseldorf at the end of November 2019 was the sector's meeting point of the year for experts from the international aluminium industry. 2019 was organised under the auspices of the 'D-A-CH, Alliance for Aluminium' umbrella with the support of alu.ch, the Swiss aluminium association, and Wirtschaftskammer Österreich, Fachverband NE-Metallindustrie, the non-ferrous metals trade association of the Austrian Economic Chambers. The three countries represent by far the largest European economic area with a common language.

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