

# 'Fuel efficient and lighter'



Composites are set to become a must-have for the commercial vehicle industry

**That is what composite materials can do for commercial vehicle makers, says JEC Composites Group President and CEO Frederique Mutel**

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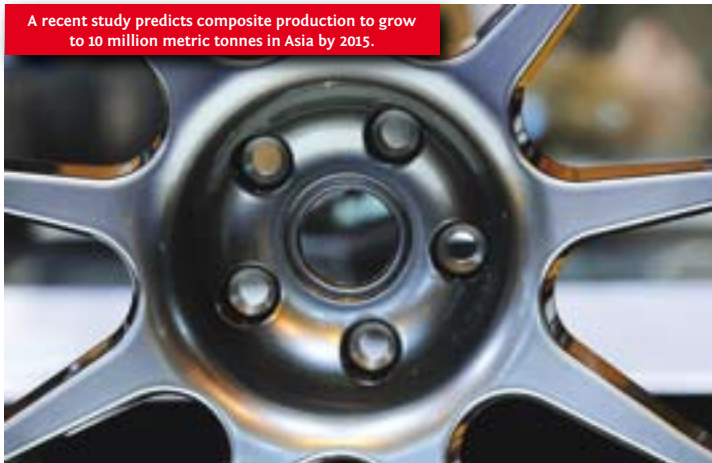
The use of composite materials is fast gaining prominence in the commercial vehicle industry. In fact, composites are increasingly emerging as a new viable alternative for global commercial vehicle manufacturers, and have distinct advantages over natural products like steel, aluminum and wood.

JEC Composites – a Paris-based organisation – has been doing its bit to foster use of composites globally ever since the composites industry came into being sixty years ago. JEC has pioneered supporting the development of composite materials and promoting knowledge transfer and exchanges between suppliers and users. It has a towering presence across the globe, connecting more than 2,50,000 profession-

als from 96 countries.

Composites have been a big draw in North America and Europe but if recent trends are anything to go by, there is an industrial shift from North America and Europe to Asia. Like in North America and Europe, composites are seen as the next big thing in the Asian region, with India being the prime hub. According to a new study by JEC Composites, composite production in Asia is expected to more than double by 2015 to 10 million metric tons. The study sees significant composite production growth in China and India in the automotive sector which along with wind energy, infrastructure, telecom and mass transportation are considered the most in-

A recent study predicts composite production to grow to 10 million metric tonnes in Asia by 2015.



composite consumption in India.

Commercial vehicle manufacturers are drawn into using composites mainly for lightness as a lighter vehicle can fetch a lot of benefits for an operator.

'Composite materials are more and more used in commercial vehicles as it makes a vehicle a lot lighter. Producing a lighter bus or truck enables you to have more resistance, and that helps to achieve fuel efficiency. Use of composites also contributes to reduction in energy consumption,' says JEC Composites Group President and CEO Frederique Mutel.

Composites can be used for buses and trucks. Composite materials are used for body panels, structural parts or strategic elements under the hood. They can also be used for interiors, ceilings and floors, seats and fittings.

'Besides use of composites for body panels, structural parts or strategic elements under the hood, pressure composites vessels are put into use for new vehicles powered by alternative fuels such as CNG. We have thermoset parts manufactured in RTM (Resin Transfer Moulding), SMC

added benefit is their acoustic and thermal insulation properties,' explains Mutel.

Maintenance is a key thing for com-

(Shape Memory Composite) or other processes, while the development of thermoplastic parts is continuously growing. For interiors, we find alternative composites applications such as sandwich panels. They are easy to install, have a lower noise and heat output. The

will be used in commercial vehicles."

Even in design of a bus or a truck, composites come in handy. 'Use of composites allows for design flexibility, which can pave the way for newer conceptions,' Mutel states.

Composite materials can also help commercial vehicle manufacturers in ensuring it is a less-time consuming affair. "Using composites can reduce number of parts thereby saving assembling time, while shaving off as many as 400 kgs on a vehicle," Mutel reckons.

It may be mentioned here that the Prima range from Tata Motors – the country's largest commercial vehicle owner and its popular four-wheeler LCV - Ace, has been using a lot of composites.

But there is another angle to be explored. TACO – the components making arm of Tata Motors feels that the use of composites is apt when volumes are small as it involved thermoforming which needs moulding and heat treatment and also necessitated creation of separate dyes/mold for each kind of product. So, does it restrict application of composites in large volumes if

Composites are not just lighter but also easier to work with



mercial vehicle operators as it can have a huge impact on business operations. For instance, steel sheets can be hammered and melted but composites do not corrode. Mutel says there's nothing to worry on this front. 'We will go a step further in terms of resistance with carbon composites. We may even forecast that carbon composites now currently used in aerospace, Formula One and world boat Races

one may ask?

'Look, new materials such as thermoplastic composites are more adapted to automated processes. Thermoplastic composites offer additional benefits as they



JEC Composites Group President and CEO Frederique Mutel addressing a press conference in Mumbai



Imagine a fancy race car made out of green composites!



But the prime factor is that the need for lighter vehicles is so high that new solutions have to be found,' she reasons.

And how about the tolerance of composites to overloading considering overloading is a big problem in India? Mutel explains, 'The weight reduction on account of composites translates into better payload. As for overloading, there needs to be better enforcement of laws meant to check this menace.' Another thing that can make commercial vehicle operators happy using composites is that they are fire-retardant. The fact that composites are flame-retardant serves as a significant advantage for mass transit in case of an accident in a tunnel for instance.

Then, there are green composites which are used for commercial vehicles. 'Green composites apply to matrix or reinforcements, either vegetal resins such as castor oil or corn for example or vegetal fibers such as hemp, sisal, bamboo and coco palm.

Manufacturers use them in non-structural pieces like interior parts. Main advantages are first you live upon renewable resources, secondly, natural composites are very easy to recycle, and thirdly you have a different appearance, touch or look. The texture is different, fibers enhance the product,' she says.

Composites are tipped to play a key role in contributing to the Indian commercial vehicle industry. Mutel has no doubts about that. 'The engineering expertise and good manufacturing of the Indian commercial vehicle industry will contribute to the qualitative aspect of the worldwide growth. In terms of market, the contribution of composites could be huge considering the development of infrastructure and networks and the experience it could deliver to the rest of the world.'

Big players in the commercial vehicle industry have also embraced use of composites. 'Composite materials are used by most of the big names in the commercial vehicle industry be it in America, Europe or Asia. The likes of Marcopolo/MVC, GM, Daimler, Mercedes Benz, Iveco, Volvo, Mitsubishi, Nissan Renault, Scania, Volvo are using composites. Even in India, the Tatas and Mahindras are also using it.

# JEC Show Asia 2010

Thai company Cobra International Co Ltd with its partner Porcher Industries of France, emerging as one of the JEC Asia Innovation Award winners in the Environment & Recycling category at the JEC Show Asia 2009 held in Singapore



JEC Show Asia 2010 to be held in Singapore from October 12-14 will bring together under

one roof the science, technology and business of composites. The show is expected to attract

more than 300 exhibiting companies and 10,000 visitors.

Composite materials are used for body panels, interiors, ceiling, seats, structural parts under the hood among others



This year, India has been chosen to be Guest of Honor at the JEC Asia 2010 conference and exhibition and Mutel explains why? 'Composites materials have a huge future in India. Consumption in industrial applications is set to grow at an annual rate of 15 percent through 2013 and is the highest rate in that region of the world. This is the reason why India has been chosen to be the Guest of Honor at the JEC Asia 2010 conference and exhibition.'

And, what are the parameters for judging the JEC Composites Awards? 'Composites solutions bring many benefits to humankind and information on them is vital. By creating the JEC Composites Awards, we encourage the composites industry to show its vitality and dynamism in several sectors and regions since the awards are delivered in Paris, Mumbai, Shanghai and Singapore,' she signed off. ■