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Lamborghini, General Motors and Lotus Engineering provide their vision for the future for automotive carbon fiber

London, 22 September 2011: IntertechPira have interviewed key GOCarbonFiber2011 speakers from Lotus Engineering, Lamborghini and General Motors prior to the conference.

'The thing of childhood dreams? You could be driving a carbon fiber car sooner than you know it!'

That's the message coming from a good number of the world's leading automotive manufacturers from Lotus to Lamborghini, from Ford to General Motors via BMW. **"The U.S. government is mandating significantly higher fuel economy requirements for future vehicles,"** says Gregg Peterson, Senior Technology Specialist at Lotus Engineering who has over 30 years automotive OEM and Tier 1 engineering experience, **"and reducing the mass of a vehicle is a known means of improving fuel economy and, directionally, decreasing emissions"**.

The U.S. is not alone in implementing ever more stringent emissions targets so the automotive industry is looking to carbon fiber to provide the answers. A long history of development in Formula 1 has trickled down into the super-sports car market, but it is through the dedicated R&D at the likes of Lamborghini and McLaren that have brought more cost effective solutions to the market.

Prof Paolo Feraboli, Director of the Automobili Lamborghini SpA Advanced Composite Structures Laboratory (ACSL) at the University of Washington explains, **"Since 2007 we have been developing these revolutionary technologies that have led to the Aventador and the Sesto Elemento. The vision of (President and CEO) Stephan Winkelmann and (VP R&D and CTO) Maurizio Reggiani has enabled the engineers to explore radically innovative technologies for increasing automation and reducing manual labor"**.

"In every aspect, lightweighting improves vehicle performance," adds Peterson, citing handling as a specific example, **"BMW uses a low mass roof on some performance models to reduce the center of gravity. This translates into increased driver control which could mean improved control in an emergency lane change, for example."** This clearly has a strong appeal for automotive manufacturers across the entire price range, not just premium vehicle brands.

"In addition to mass savings there are other potential benefits such as enhanced styling, fast to market, parts consolidation, and lower tooling cost," observed Dr Hamid Kia, Lab Group Manager - Polymer Composites at the General Motors R&D Center where he is currently leading a team of experts conducting research across the whole gamut of polymers and composites for vehicle design and manufacture.

Major commitments to producing carbon fibers for this market have been announced over the last 2 years by global leaders in fiber production SGL, Zoltek, and Toray among others. This investment will drive down production costs and help remove what Mr Peterson, Dr Kia and Prof Feraboli all agree is the main barrier to increased uptake – price.

Will the car of the future be 100% carbon fiber? **"There will always be a role for metals, whether steel or aluminium, in car construction. The best car is not a CF-only car, but the one that use the best material, processes, and designs for each of its components,"** says Prof Feraboli, echoing Dr Kia's thoughts that **"the best strategy is the mixed material approach to enable the right material for the right application. Therefore, the optimum**



solution would be a vehicle engineered with a variety of materials to deliver the best performance".

What is clear though, is that carbon fiber has a lot to offer automotive engineers and it is entering the mainstream in terms of materials options for the design of today's mass production vehicles.

You can hear exclusive presentations from Prof Feraboli, Maurizio Reggiani, Dr Hamid Kia, Gregg Peterson and many more who will speak at the GOCarbonFiber2011 conference in Seattle on 4-6 October, or read full interviews with the speakers at www.gocarbonfibre.com.

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