

# MERCEDES BENZ SLR MCLAREN – A STEP TOWARDS AFFORDABLE CFRP STRUCTURES

*Rob Backhouse*

*McLaren Automotive, Woking, UK*

## **Abstract**

The Mercedes Benz SLR McLaren body structure is created using a number of composite manufacturing technologies. Eighty percent of the composite structure weight is processed by out-of-autoclave methods; including Resin Film Infusion, Liquid Resin Infusion, Resin Transfer Molding and Advanced Carbon SMC.

For upper body structure, a novel one-shot moulding process (InCore) was developed. In the process 15 net-shape preforms are assembled into the mould cavity and sequentially injected with thermoplastic bead foam and two component epoxy resin. The component meets all legal vehicle roof crush requirements and is substantially responsible for the bending and torsional rigidity of the monocoque.

The cycle time of the foam injection process is 15 seconds and its use eliminates the need for expensive moulded cores or internal bladders. The RTM injection cycle takes 30 minutes and the component is de-molded requiring only minimal de-flashing, drilling and inserting prior to assembly.

The presentation introduces the preforming and InCore molding process and how this component is integrated in the assembly bonding process to create the finished Body in White; to be inspected and transported to the McLaren Technology Centre for painting and final assembly.