

RM car finishes second in World Solar Challenge in Australia

The innovative solar car “Umicar Infinity” that participated in 2007’s World Solar Challenge in Australia, consisted of various Fused Deposition Modelling (FDM) components. The perfect proof of this RP technology’s reliability as a full production method.



The Umicar Infinity

In October 2007, fourteen engineering students from Leuven participated in the Panasonic World Solar Challenge in Australia.

This is a race of 3000 km through the Australian desert from Darwin to Adelaide in which 42 teams from all over the world competed against each other.

The race has now finished and the results are known.

The Belgian team crossed the line in Adelaide in second place and has received the silver medal for their splendid performance... They travelled 2999 km in 34 hours and 36 minutes with an average speed of 88.05 km/h.

For this edition, the team worked hard on an improved design of the solar car, taking into account the advice of their colleagues who participated in the previous race of 2005 and finished eleventh.



Wheel house made in FDM

The company Materialise (www.materialise.com) assisted the solar team with the development of a series of the crucial components and built a.o. functional parts for the suspension (wheel house to keep together 2 components) and the wheels (custom-made sealers) via Fused Deposition Modelling (FDM). An FDM machine works on an "additive" principle by laying down thermoplastic material, which is melted by a heated extrusion nozzle. In a similar manner to stereolithography, the model is built up from layers as the plastic hardens immediately after extrusion from the nozzle.



FDM sealer for one of the wheels which carries the engine

Since the materials being used are real plastics like polycarbonate and ABS, the eventual models are extremely suited for functional tests and for end production. As no moulds are used, so there are almost no restrictions during the design stage.

In this modern age there is great demand for exclusivity and custom-made products. Consequently, the rapid prototyping industry is growing very quickly, as RP technologies are the obvious methods to manufacture unique products. The “Umicar Infinity” is a prime example of personalised manufacturing. It is a one-off car, of which every single component is custom-built for the Solar Challenge, on the one hand to comply with the regulations and on the other to finish first.



As an experienced high-tech company, Materialise often lend support and assistance to innovative, high technology projects that pay attention to durable development and renewable energy.

Bart Van der Schueren, Director Materialise Industrial Services : “We are proud that the “Umicar Infinity” crossed the line in Adelaide as one of the first, showing once more that RP technology is ready to be used in real production environments.”

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