

Stade, 03.05.2011

Institute of Aircraft Design - University of Stuttgart presents: Automated impregnation of thick preforms for cost-effective manufacturing of fibre reinforced plastics

Michael Kaiser, research associate, will give a lecture on this topic at the 5th CFK-Valley Stade Convention, 07-08 June 2011 in Stade (Germany).



Michael Kaiser, Speaker at the 5th CFK-Valley Stade Convention

The Convention focuses this year on the leading topic of “CFK Automation – Simulation, Processes & Materials”. Particularly the production and the cost-efficient development of CFRP structures will be the focus of the series of lectures held by representatives from renowned companies and institutes. Overall 17 top speakers will give their lectures at the two-day conference.

One of them, Michael Kaiser, Institute of Aircraft Design - University of Stuttgart, will give a presentation on “Automated impregnation of thick preforms for cost-effective manufacturing of fibre reinforced plastics” – A short summary:

“Liquid composite moulding (LCM) processes have shown the potential to enable a cost-effective manufacturing of fibre reinforced plastics in medium production rates and have proven to increase the quality of the components. With the aim to reduce manufacturing steps and to enhance the range of application of LCM processes, an automatable impregnation routine for the manufacturing of preforms was developed. The product of the automated impregnation process is a flexible, multilayer, impregnated semi-finished product, which can be draped and joined together in a wet state and finally cured in a second step. Since the semi-finished product is already fully impregnated and compacted with low void content, the assembled preimpregnated preform can be cured also in low pressure out-of-autoclave processes.

In the presentation, the different process steps of the automated infiltration technique for thick preforms will be shown and compared with standard prepreg



and infiltration routines. Additionally, potential savings concerning process time, necessary investments and technical advantages will be scrutinised.

The impact of different parameters on the preimpregnated semi-finished product, like compaction, applied amount of resin and resin distribution on the preform will be explained based on the results of the first trials. Quality assessments are conducted through mechanical and optical analysis. A concluding outlook of potential applications using the new manufacturing routine is given. (...)”. The whole lecture will be given on 08 June at 09:55 am.

The whole program including detailed information on the accompanying exhibition and application forms are available for downloading at www.cfk-convention.com. Please register now! (Number of participants is limited, registration deadline 21 May 2011)

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