**TITLE**

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Swinburne’s Factory of the Future aims to play a leading role in the global drive to integrate the design, automation and control of manufacturing systems.

In the past two decades, cure cycle times for carbon fibre composites have been dramatically reduced from hours to minutes. At the same time, the global market for carbon fibre composites is confidently expected to grow exponentially to $36 billion by 2020 with key applications in aerospace, automotive, defence, wind energy and civil engineering.  Now composite cure cycle times are no longer the rate limiting step in the production process, the remaining challenge is to increase production rates by replacement of manually intensive steps with automated production.

An example of the state of the art for automated composite production is the BMW i3 battery electric vehicle manufacturing plant in in Leipzig, Germany.  The i3’s carbon fibre composite “life module” is built using several of the latest technologies for industrial automation. However, it is noted that whilst this process represents a paradigm shift in advanced composite manufacture, there are still significant manufacturing challenges which further innovative research can help overcome.  The cure cycle time for the carbon fibre composite components is 8 minutes (automotive targets are under 1 minute to compete with sheet metal forming) and this process requires some manual intervention.

This presentation will describe the current capabilities of the Factory of the Future and will highlight the future directions for the development of a new High Volume Automated Composite Centre.