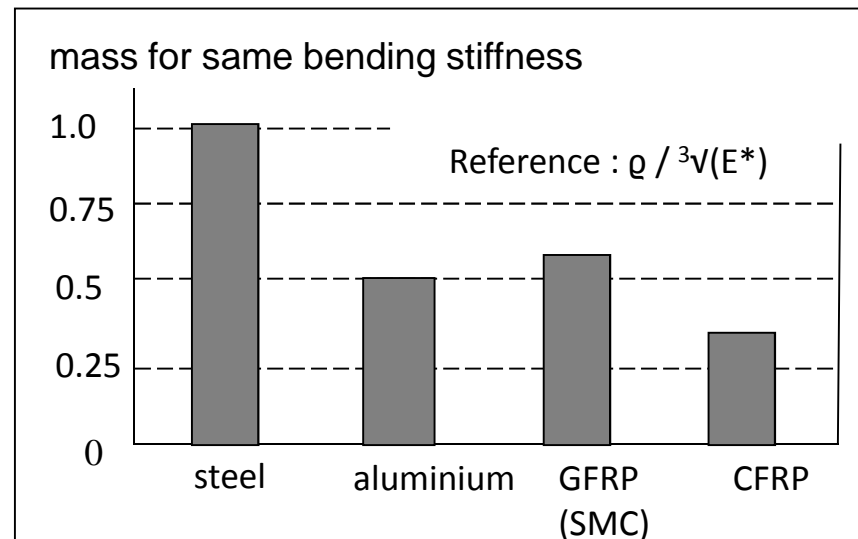


OPPORTUNITIES AND PREREQUISITES FOR COMPOSITES IN CARS

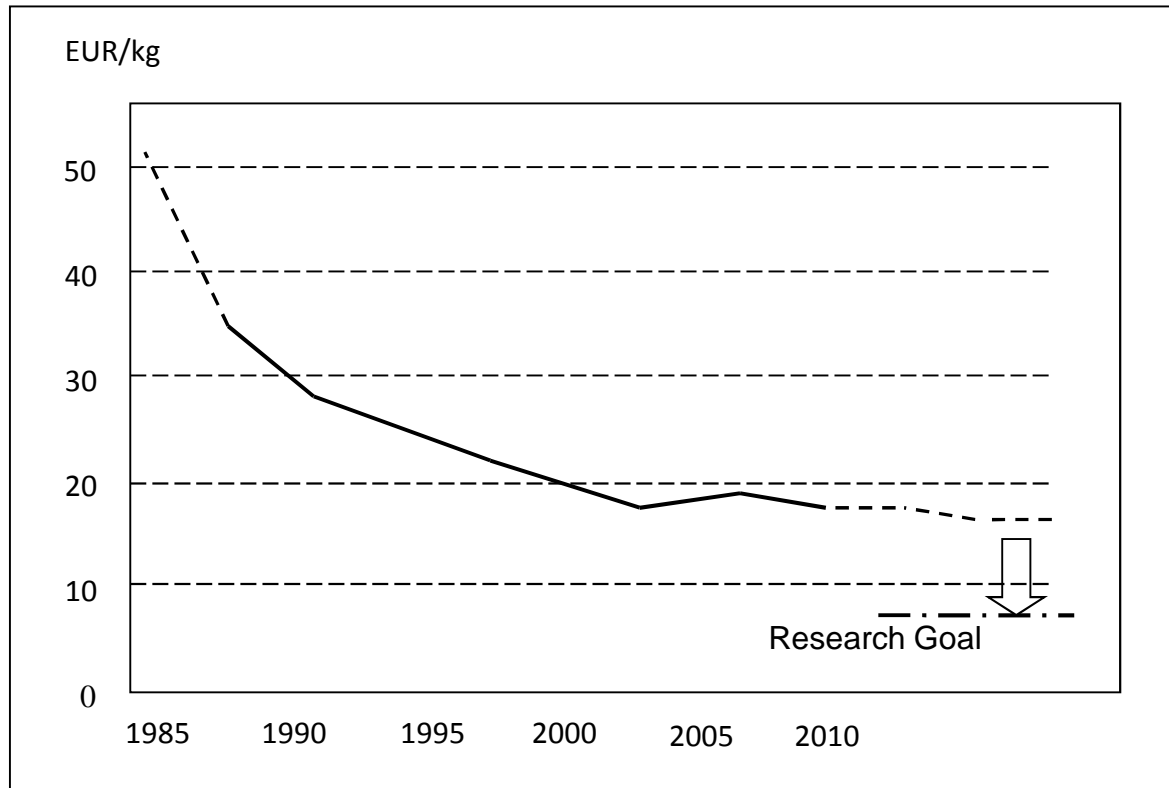
Chris Ruegg

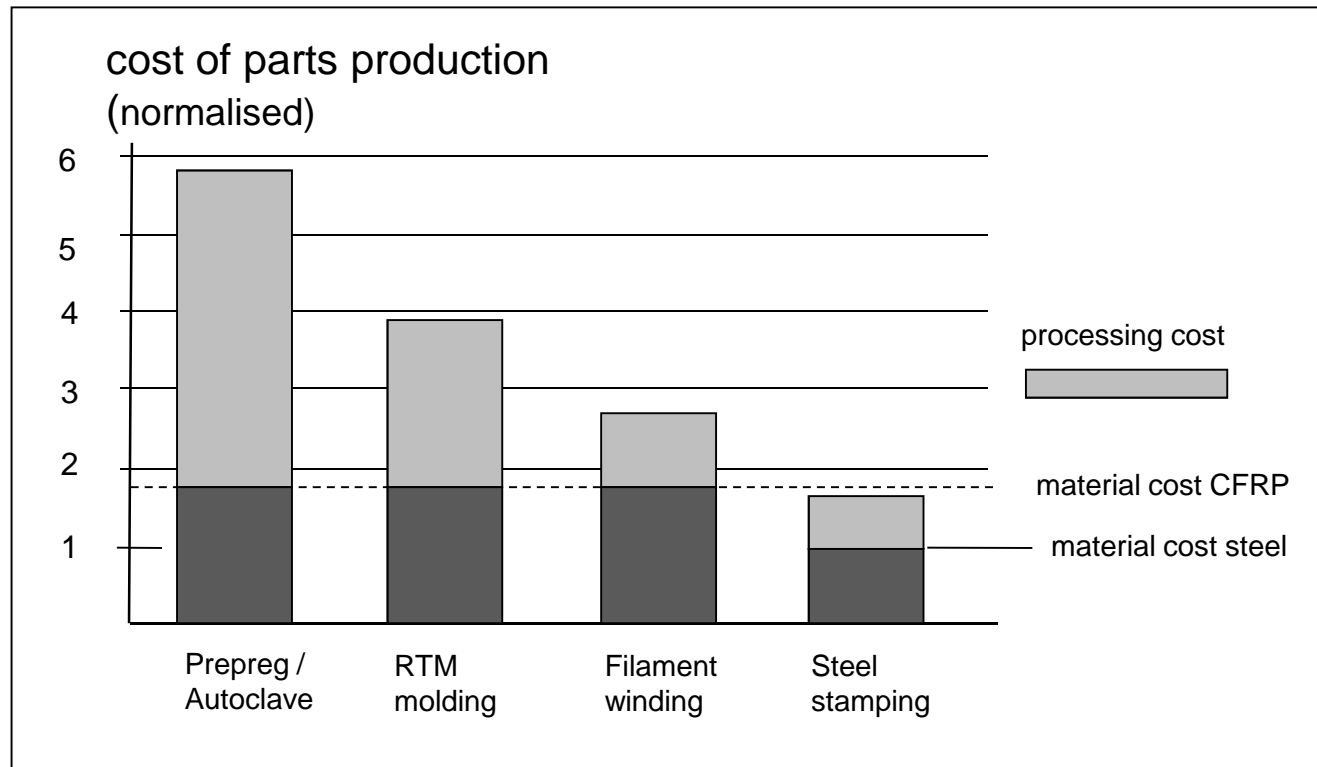
OPPORTUNITIES AND PREREQUISITES FOR COMPOSITES IN CARS



2010

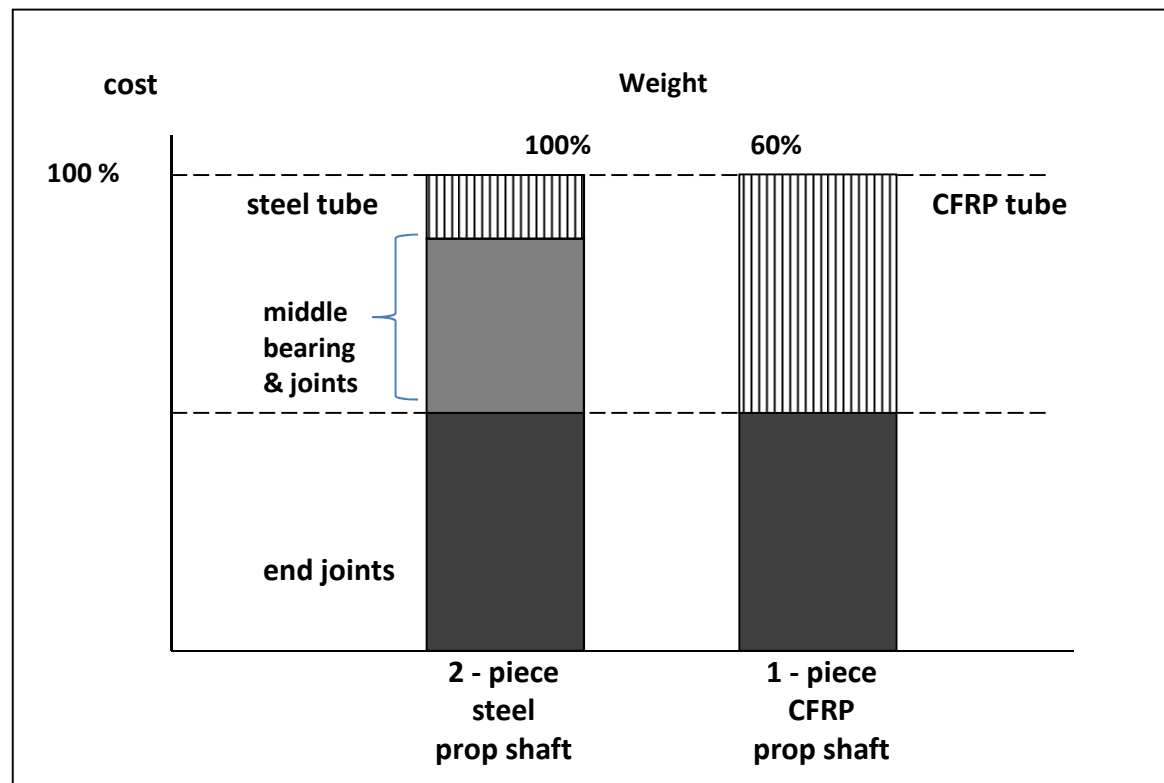
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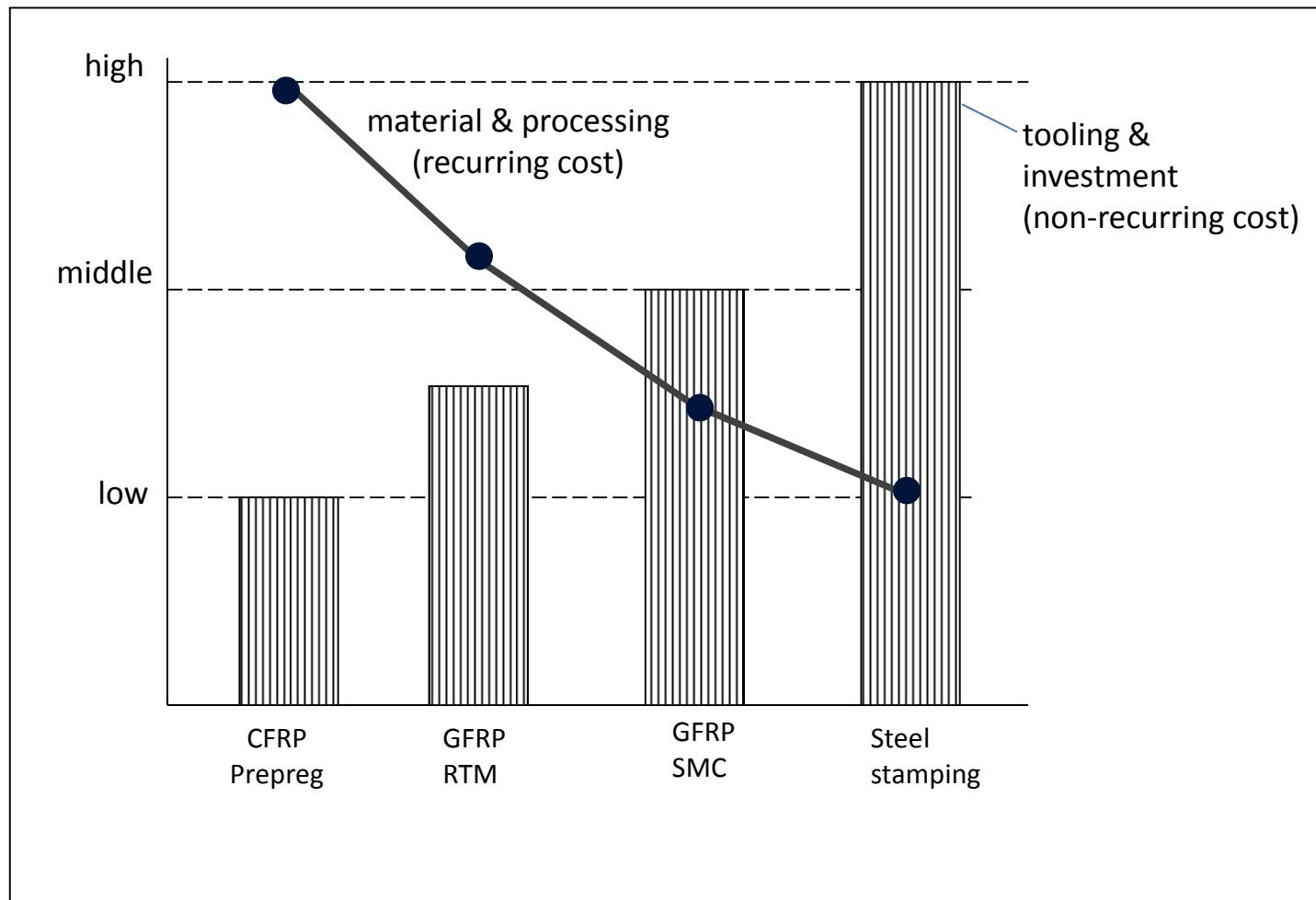




$$L_{\text{crit}} = \sqrt{\frac{\pi}{4\sqrt{2}} \cdot \frac{d_m}{v} \cdot \sqrt{\frac{E_x}{\rho}}}$$









2010

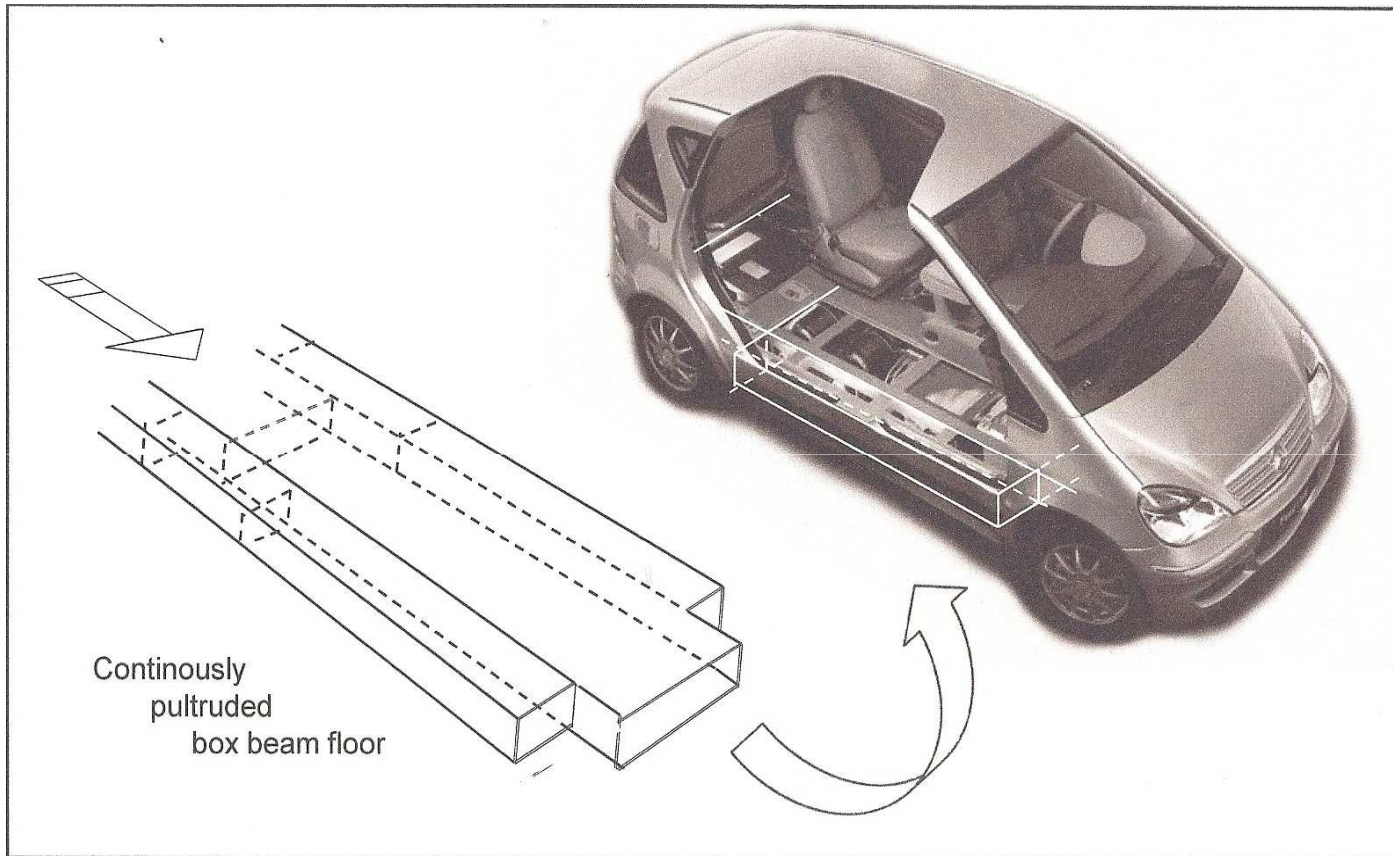
icsat

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TRENDS AND NEEDS

Economics /Production	standardisation of non-visible components, e.g. chassis / suspension / power train
Marketing & Sales	individualisation of visible parts, e.g. body and interior
Environment	1. low or zero emission <ul style="list-style-type: none">- engine efficiency- lower vehicle mass<ul style="list-style-type: none">- smaller cars- light weight materials- electric / hybrid / H₂ / fuel cells 2. Recyclable materials
Safety	may shift from high passive safety to increased active safety

2010



PREREQUISITES FOR LIGHT WEIGHT COMPOSITES VOLUME CARS IN THE FUTURE

- **INNOVATIVE NEW DESIGN CONCEPTS**
- **EFFICIENT MANUFACTURING PROCESSES**
- **LOW COST CARBON FIBERS**

Thank you for your attention

Chris Ruegg

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