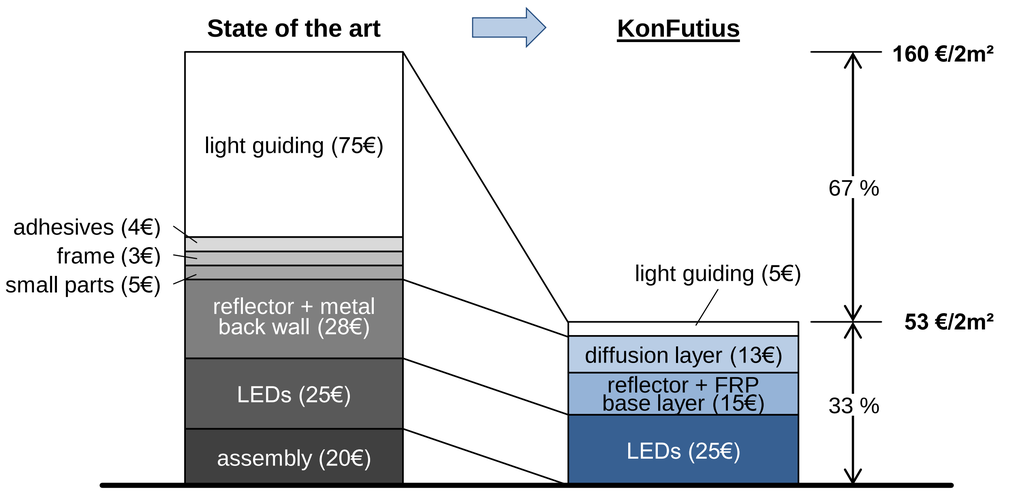
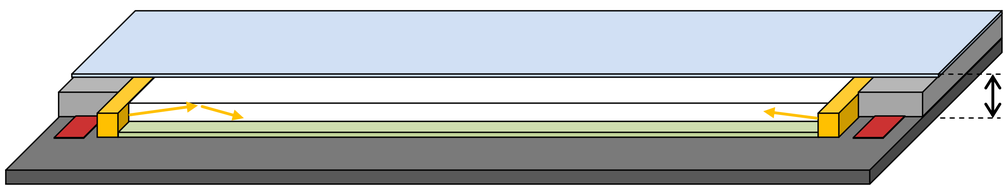
KonFutius

Continuous functionalization of structural lightweight material with printed electronics and hybrid integration

Project Target

The overall goal of the joint project "KonFutius" is the development of an integrated process chain for the cost-effective and energy-efficient production of electrically and optically functionalized fiber composites. The lighting panels produced for the first time in a continuous process outperform conventional LED panels in terms of weight and stiffness while at the same time reducing thickness and increasing design freedom.

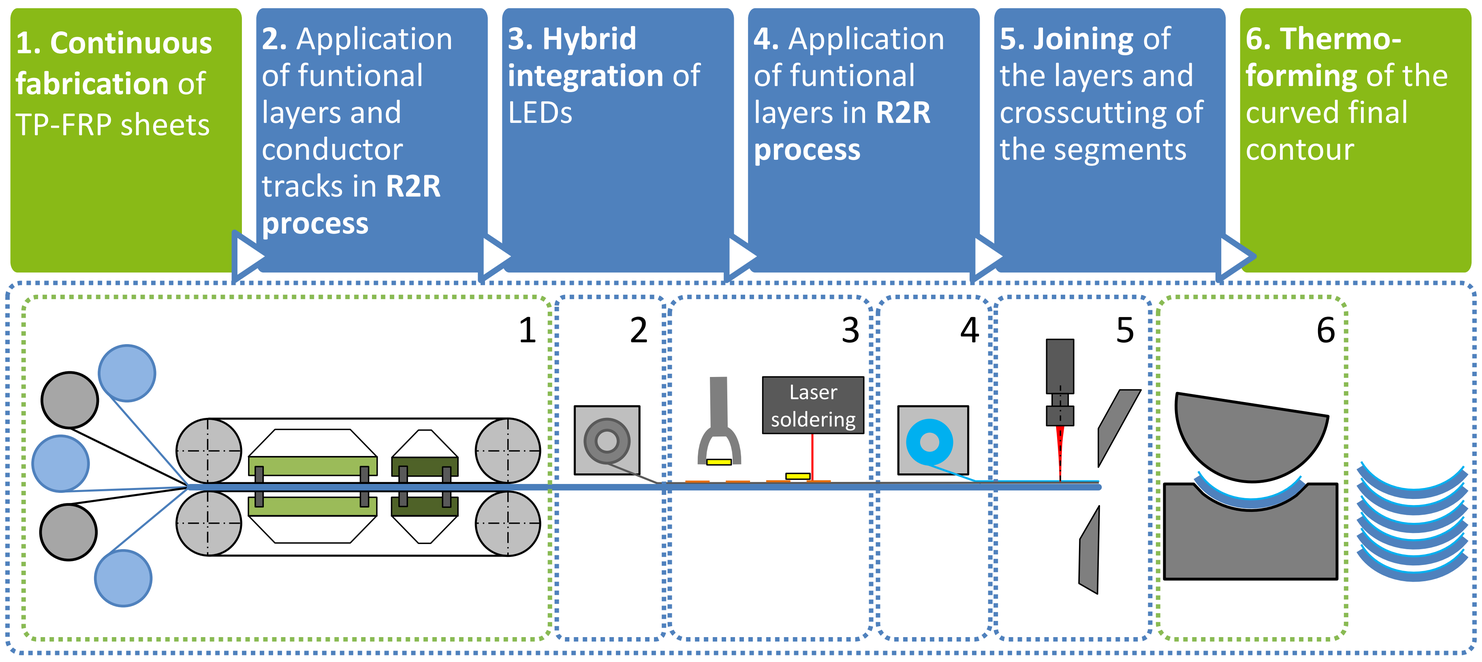




thickness approx. 4 mm

Initial Situation

- LED is most energy-efficient light source
- Projected increase in revenue with LED light system from 1 Mrd. € in 2011 to 14 Mrd. € in 2020
- Production of lighting panels is currently primarily carried out with many manual assembly steps
- Relocation of the value chain from LED panels in the Asian region
  → need for new system architecture to secure the competitiveness of the lighting industry in NRW
- Light guiding technology provides higher energy efficiency and longer lifetime than organic LEDs



Project Approach

- Cost reduction of 60% by continuous fabrication
- Weight reduction by use of FRP instead of steel or aluminum
- Compact system architecture through integrative manufacturing process
- Geometrical flexibility for usage in architecture and transport
- Fully automated production process for economic use in high-wage countries

Project Partners

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