Highlight

Aachen,
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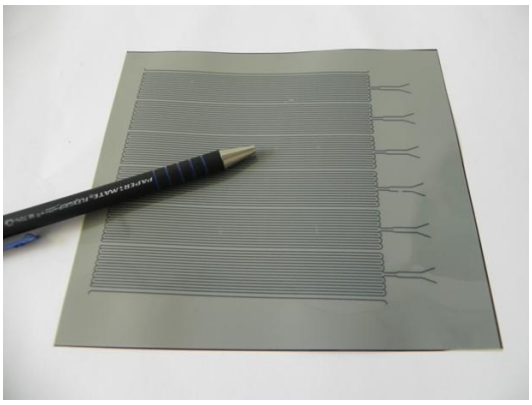
Laser welding of polymer foils using TWIST method and adapted clamping

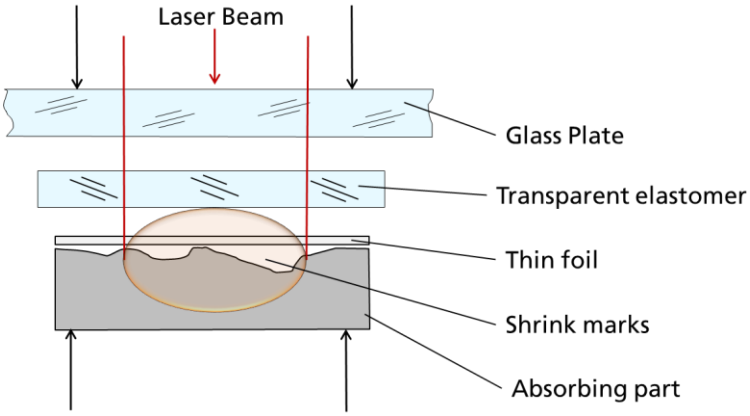
Within PolyBright's WP5, many technical aspects of laser polymer welding are under consideration. Clamping is one important issue, especially when foils are to be welded onto a rigid lower joining partner.

Figure 1: PEEK foil welding setup at ILT with scanner, collimated fiber laser input (yellow) and clamping unit.

To ensure a good mechanical contact all along the surface, a transparent elastomer is introduced between glass plate and upper foil, see sketch below.



This compensates sink marks of the lower part and enables welding of contours along the entire plane, see photo above of TWIST channel welding 100 µm PEEK foils.



Parameters: 60 mm/s, 10 W, TWIST frequency 1000 Hz, TWIST diameter 0,12 mm.

SEVENTH FRAMEWORK PROGRAMME

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