

# Highlight


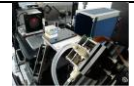



Aachen,  
April 18, 2012


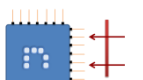
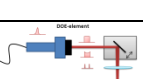
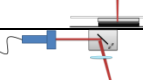
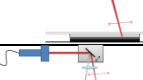
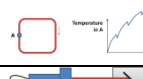
## Evaluation of experimental laser polymer welding setups

Six systems had been chosen for PolyBright experimental testing and at least three of them are planned to be realised as a prototype laser manufacturing system.

The conclusion of concept evaluation is that four of the described experimental setups are suited for a (industrial) prototype, i.e. Mask Welding, Remote Welding, Quasi-Simultaneous Welding, TWIST Welding, see table below.

Figure 1:  
Comparison and evaluation of PolyBright experimental setups for Laser Polymer Welding

Mask	Dynamic Mask	DOE+Scanner	Remote	Quasi-Sim.	TWIST
					

		Costs	Contour-Flexibility	Stand-alone suited?	Inline suited?	Technically established?	Contour resolution
	<b>Mask</b>	low	no	yes	?	yes	medium
	<b>Dynamic Mask</b>	high	yes	--	--	no	medium
	<b>DOE+scanner</b>	medium	yes	yes	yes	no	medium
	<b>Remote</b>	medium	yes	yes	yes	yes	low
	<b>Quasi-Sim.</b>	medium	yes	yes	yes	yes	medium
	<b>TWIST</b>	high	yes	yes	yes	yes	high

Dynamic Mask Welding, which is highly interesting, currently doesn't have the potential to be developed as prototype, since the LCoS key element will have to be tested intensively. DOE+Scanner may serve as an add-on for Remote, Quasi-Simultaneous or TWIST Welding, since physical integration of DOEs into the beam line is simple, although computation and manufacturing of a DOE are not.

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