

Project Aims

The objective of European collaborative PolyBright project is to provide high speed and flexible laser manufacturing technology and expand the limits of current plastic part assembly. New laser polymer joining processes for optimized thermal management in combination with wavelength adapted polymers and additives will provide higher quality, high processing speeds up to 1 m/s and robust manufacturing processes at lower costs.

Partners

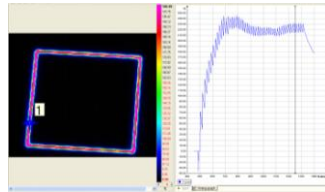
The consortium consists of 18 partners from 9 countries, including laser companies, optics suppliers, material and processing specialists and machine suppliers.

Key Innovations

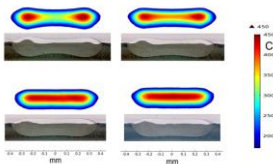
Key innovations of the PolyBright project are high brilliance mid-IR-wavelength fibre and diode lasers with powers up to 500 W, high speed scanning and flexible beam manipulation systems, such as dynamic masks and multi-kHz scan heads.



G3-C antenna housing (navXperience), welded with 1,5µm fiber laser



High speed thermal image of quasi-simultaneously welded rectangle



Calculated temperature distribution and weld seam cross sections for PP TWIST laser welding



500 W Laser system emitting at $\lambda=1567\text{nm}$