

CONSORTIUM

NewDeli is part of the APPOLO project, which seeks to establish and coordinate connections between end-users and laser equipment manufacturers. NewDeli gathers together two SMEs, a technology provider (OPI) and an end-user (IRIS), and a lab belonging to the Appolo hub (BUAS).



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Collaborative project
No. 609355 APPOLO
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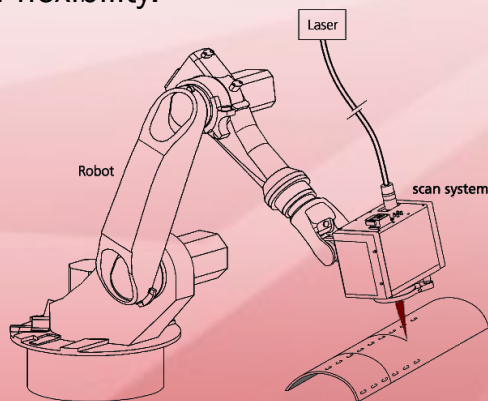


**A new
fiber-based
delivery
system for
pulsed laser
beams**



OBJECTIVE

NewDeli wants to propose a **new ultra-short pulse fiber delivery systems**, whose objective is to be the enabling factor for the new generation of **additive manufacturing machines**. This innovative solution is based on a **Hollow Core Photonics Crystal Fiber (HC-PCF)** that allows ultra-short pulsed beam delivery in a cable, giving the possibility of coupling with an anthropomorphic robot with an unprecedented degree of flexibility.



SPECIFICATIONS

The goal is the realization of a proper delivery system, coupled with an appropriate laser source that is able to process a sample with a given surface quality within a certain processing time.

Delivery system specifications	
Max cable length [m]	6
Wavelength range [nm]	930 - 1100
Pulse duration [ps]	< 1
Pulse energy [mJ]	< 0,5
Max avg optical power [W]	< 50
Input beam M ² factor	< 1,2
Output beam M ² factor	< 1,35

APPLICATIONS



NewDeli's solution has been specifically developed for **med-tech**, **automotive** and **aerospace** sectors. The demand of these industrial sectors is characterized by extremely high manufacturing costs because of extreme part complexity, low volumes or even one-of-a-kind request and pricey raw materials.