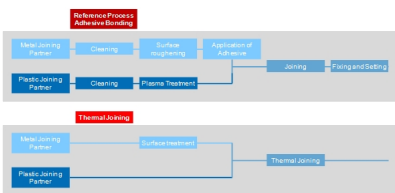


The project primarily aims to develop a new innovative thermal joining concept for Plastic and Metal (PM) materials using a direct non-contact laser joining process without the need for additional (filler) materials, liquid/solid adhesive bonds or assembly elements, but that offers a robust physical and mechanical bonding, and ensures the integrity of the structure.



It is important to remark that the joining properties will be governed mainly by the kind of the plastic and the laser irradiation conditions.

Thus, another important aim of this project fits with a general requirement for technical components which is to achieve flexible automatic joining prototypes for dissimilar plastic-metal materials with short cycle times and a broad field of applications.

The project concept is based on the application of laser sources with two main objectives:

1) to modify the surface of the metal (structuring) to prepare it for the joining of the plastic if necessary and

2) to obtain the laser joining between both materials based on a plastic melting, without phase transformation in the metal.