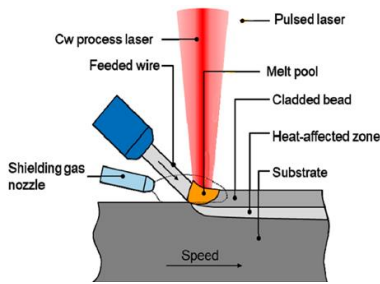


PROYECTO I+D+i



Title of the project

Development of a multiprocess solution for the in situ recovery and reinforcement of railway rail elements

Acronym

REPAIR

Project content

Maintenance and recovery operations in railway infrastructure networks take place continuously, due to the high frequency of vehicles passing through the tracks. The objective of these recovery works is to ensure the circulation of trains in safe and comfortable conditions, avoiding great efforts on the different components (sleepers, rails, turnout cores, etc.). One of the most widespread methods is manual recharge operations using arc welding technology. This welding technology, assisted by other tools, such as grinders and grinders, allow rail components to be recovered quickly. However, these conventional welding methods do not constitute a definitive solution, since they present different drawbacks. In this context, the use of a less aggressive, more versatile and efficient recharging technology is proposed. Laser technology, given its particularities in terms of flexibility, localized energy supply, high productivity and ease of use, is presented as a suitable technology to carry out these lane recovery operations.

General objectives

The aim is to develop/optimize a system based on laser technology to carry out different manual maintenance operations (cleaning, recharging, polishing) on railway rail elements, mainly Vignole-type rails (standard) and crossings.

Project phases

- PT1. Definition of specifications**
- PT2. Characterization of materials and numerical simulation of recharging process**
- PT3. Design and manufacture of fixtures and tools**
- PT4. Study and optimization of recovery operations**
- PT5. Validation and final conclusions**

Results and conclusions

Project in execution



BUSINESS AREAS

Technical and Innovation R&D Area COMSA

DURATION

1/6/2022 al 31/12/2023

BUDGET

COMSA : 361.712,81€

KEYWORDS

Rails, laser, LMD process

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