HORIZON 2020

Plasma Nitriding and Nitrocarburising for high wear resistance and high corrosion stability Stainless Steel

Fact Sheet

Project Information

PlaSSteel

Grant agreement ID: 774285

Project website

DOI
10.3030/774285

Project closed

EC signature date
15 May 2017

Start date
1 June 2017

End date
30 November 2017

Funded under
INDUSTRIAL LEADERSHIP - Leadership in enabling and industrial technologies – Nanotechnologies

Total cost
€ 71 429,00

EU contribution
€ 50 000,00

Coordinated by
IONITECH LTD
Bulgaria

Objective

Hardening the surface of stainless steel parts and at the same time retaining its corrosion resistance presents a major technical challenge to surface engineering, particularly for the stainless steel pumping equipment and stainless steel parts used in industry. Technology solutions and procedures that are capable to provide stainless steel surfaces with high corrosion stability, high wear resistance and good tribological properties are intensively sought. These are going to increase use the life

time of stainless steel parts, reduce frequent parts replacement and unplanned breakdowns and decrease operational stoppage costs.
Our solution represents a Special Plasma Nitriding Process and chamber under a brand name PlaSSteel, which is particularly designed and developed to provide three low-temperature (<450oC) surface treatment technologies – plasma nitriding, plasma carburising and plasma nitrocarburising. PlaSSteel is able to treat a high wear resistance (up to 10 times higher) and high corrosion stability stainless steel parts with an operational cost of approximately €5/kg of treated parts which ensures to our customers and end users a payback period of approximately 1 year. In the first commercialisation phase our customers are going to be primarily stainless steel pumps producers and operators, while in the second phase all remaining users whose processes are combating the wear/corrosion conditions will be targeted. Our plan is to clinch >€38 millions in first eight years of commercialisation from the PlaSSteel direct sales model, whose goal is more than 60 units sold. Other business models, technology franchising and revenues from aftersales service will be evaluated and estimated by the proposed feasibility study.
In Phase 1 we will validate our PlaSSteel prototype, develop the Intellectual Property strategy, carry out a market study, search and recruit partners/stakeholders and produce a draft a business plan.

Fields of science (EuroSciVoc)

engineering and technology > electrical engineering, electronic engineering, information engineering > electrical engineering > **electric energy**

engineering and technology > other engineering and technologies > **food technology**

engineering and technology > **nanotechnology**

engineering and technology > other engineering and technologies > **nuclear engineering**

engineering and technology > materials engineering > **coating and films**

Programme(s)

H2020-EU.2.1.2. - INDUSTRIAL LEADERSHIP - Leadership in enabling and industrial technologies – Nanotechnologies MAIN PROGRAMME

H2020-EU.2.1.5. - INDUSTRIAL LEADERSHIP - Leadership in enabling and industrial technologies - Advanced manufacturing and processing

H2020-EU.2.1.3. - INDUSTRIAL LEADERSHIP - Leadership in enabling and industrial technologies - Advanced materials

H2020-EU.2.3.1. - Mainstreaming SME support, especially through a dedicated instrument

Topic(s)

SMEInst-02-2016-2017 - Accelerating the uptake of nanotechnologies advanced materials or advanced manufacturing and processing technologies by SMEs

Call for proposal

H2020-SMEInst-2016-2017

See other projects for this call

Sub call

H2020-SMEINST-1-2016-2017

Funding Scheme

SME-1 - SME instrument phase 1

Coordinator

IONITECH LTD

Net EU contribution

€ 50 000,00

Total cost

€ 71 429,00

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SME

Yes

Region

Югозападна и Южна централна България > Югозападен > София (столица)

Activity type

Private for-profit entities (excluding Higher or Secondary Education Establishments)

Links

Contact the organisation
Participation in EU R&I programmes
HORIZON collaboration network

Last update: 6 September 2024

Permalink: https://cordis.europa.eu/project/id/774285