MADE IN EUROPE 2026

ONLINE PITCHING

ECO-efficient advance manufacturing of cold spray COATings for European High-Performance Products ECOCOAT

23 June 2026

INTRODUCTION TO Fraunhofer IZFP

- 1/76 Institutes of Fraunhofer
- Founded in 1972
- Situated in Sarbrücken, Ilmenau
- Operating budget 18.2 million euros (financial year 2025)
- Financing: → 75 % project revenue

The Fraunhofer IZFP mission…

Photo by: Uwe Bellhäuser

1 … develops “Sensor and Data Systems for Safety, Sustainability, and Efficiency“.

2 … **uses its expertise in the areas of:**

- (unconventional) sensor systems for volume and surface properties
- software and services for sensor data management along the data value chain
- software and services for data analysis and data value creation with AI and ML techniques
- consulting and holistic services around measurement, testing, data value creation and standardization.

3 **… optimizes circular processes for materials and products** to ensure advanced industrial manufacturing and processing, as well as healthy living, nutrition and security of supply.

HORIZON-CL4-2027-01-MATERIALS-PRODUCTION-02

Goal: Customization of an automated, production-ready coating technology designed for integration into industrial environments

Objectives

O1:	Customisation and integration of industrial Kinetic-Fusion Cold Spray manufacturing technology in key industrial production lines
O2:	Enable circular advanced manufacturing through secondary raw materials
O3:	Implementation of a data-based multi-parameter tool for product quality and process monitoring

Use Case 1: Advanced manufacturing of novel coatings

Use Case 1.a – Electrification components for energy and e-mobility
Use Case 1.b – Thermal management components for electronics manufacturing
Use Case 1.c – Lightweight functional coatings for space and aerospace

Use Case 2: Hybrid additive manufacturing for (coating) repair purposes

HORIZON-CL4-2027-01-MATERIALS-PRODUCTION-02

WP1 – Requirements and industrial specifications	Definition of industrial requirements and performance targets for the selected use cases, including sustainability and circularity criteria.
WP2 - Material and process simulation/modelling	Develop simulation-based methods for increasing product quality and process productivity. The considered simulation tools address the material behavior, the optimisation of test procedures as well as the simulation of the entire cold-spray process in terms of process optimisation.
WP3 - Pre-manufacturing – circular feedstock	**Secondary raw materials and recycled metal powders.**
WP4 - Digital process monitoring and product quality based on multi-parameter tool	Development of **inline sensing, data analytics and digital process control** to ensure reproducibility and industrial scalability Multimodal sensor system will be developed which records, evaluates and optimise in-situ process parameters and forwards them to the digital platform Qualification of coatings.
WP5 – Industrial demonstration	Validation of the manufacturing technology in the selected use cases/process lines and demonstration in relevant industrial environments (TRL 7). Integration and optimisation of the Kinetic-Fusion Cold Spray technology into an automated industrial production platform.
WP6 – Sustainability	Assessment of **resource efficiency, circularity and economic viability**, including business models. A traceability concept embedded in a digital product passport will be developed. LC
WP7- Innovation management	
WP6- Project management	

HORIZON-CL4-2027-01-MATERIALS-PRODUCTION-02

EFFRA
EUROPEAN FACTORIES OF THE FUTURE RESEARCH ASSOCIATION

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What we need :

- **Machine and equipment manufacturer (OEM)**
  Development and integration of the industrial Cold Spray production platform, automation and machine scalability.

- **Industrial end-users**
  Validation of the technology in industrial demonstrators (energy systems, electronics, automotive, aerospace).

- **Materials and recycling partners**
  Development and qualification of coating feedstock based on **secondary raw materials and recycled metal powders**.

THANK YOU

Contact:

Madalina Rabung
Madalina.rabung@izfp.fraunhofer.de

www.izfp.fraunhofer.de