Project Partners

Politecnico di Milano
aimen Technology Centre
creative nano
elsyca
MBN nanomaterialia
BRAVE Analytics
Tecnochimica
FALEX Tribology
Group Kampakas
DIAD Group
COŞKUNÖZ Kalıp Makina
National Technical University of Athens
Axia Innovation
Associazione Italiana Finitura dei Metalli
University of Birmingham

Funded by the European Union

Funded by the European Union under GA number 101058450. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union. Neither the European Union nor the granting authority can be held responsible for them.

#MOZART

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MOZART

METAL MATRIX NANO-COMPOSITE COATINGS UTILIZATION AS ALTERNATIVE TO HARD CHROMIUM

PROJECT DETAILS

Start date: June 2022
Duration: 42 MONTHS
EU contribution: 4.66M EURO

MOZART IN A NUTSHELL

MOZART project has the ambitious purpose of assisting the fulfillment of REACH requirement to eliminate Hard Chromium (HC), a toxic and carcinogenic substance, offering an environmentally less harm and less toxic alternative to the painting and coating industry.

Its main goal is to develop high quality durable metal coatings to replace Hard Chromium (HC) based on Nickel (Ni) matrix nano-composite electroplating processes following Safe and Sustainable by Design (SSbD) principles.

MOZART aspires to develop the first in the world real applicable nano-composite coatings that will revolutionize the surface finishing industry in specific applications such as the automotive, manufacturing and machining industry.

TECHNOLOGIES

- 2 families of Ni composite coatings: reinforced by ceramic nanoparticles and by 2D materials
- Data driven model for coatings' structure under the SSbD principles
- Simulation/modelling of composite plating
- Online monitoring of nano-ceramic and 2D materials
- Achievement of mono-dispersed composite electrolytes

3 INDUSTRIAL APPLICATIONS

AUTOMOTIVE

MANUFACTURING

MACHINING

IMPACT

SCIENTIFIC

ADVANCED NANOCOATINGS AND AI MODELS AND SIMULATIONS

TECHNOLOGICAL

2 NEW FAMILIES OF SSbD NANOCOMPOSITE COATINGS

ECONOMIC

50% MORE EFFICIENT Ni-BASED NANOCOATINGS

SOCIETAL

HEALTHIER AND SAFER ENVIRONMENT DUE TO ELIMINATION OF HC