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Dissemination day

25 November 2024

RINA Consulting - Centro Sviluppo Materiali S.p.A.

ONLINE EVENT

The participation is free of charge

STEeLS-EM Project

Hydra Project

Miria Project

Registration at

STeELS-EM Project

STeELS-EM

Project number: RFCS-RPJ 101034063

STabilized ELectrical Steels for Electric Mobility

The Aim of the project is to produce "Non Grain Oriented Electrical Steel" obtained by using unconventionally high concentration of Ti in the alloy, so that it can act as "scavenger" for interstitial elements as N and C. Such elements are captured by Ti in coarse precipitates, avoiding in such a way the formation of fine precipitation, which is expected to be deleterious for the electrical steel characteristics.
In fact, fine precipitation negatively interacts with grain growth processes, preventing the formation of an optimal microstructure, as well as interfering with the magnetic domain's walls displacement during the magnetization processes.

09.00 - 09.15	**Overview of STeELS-EM Project** *Stefano Cicalè, RINA*
09.15 - 09.35	**Processing, texture and grain size in Ti micro alloyed Non-Oriented Electrical Steels** *Alexey Gervasyev, UGENT*
09.35 - 09.55	**Characterization of precipitates on hot strips and final products** *Paolo Emilio Di Nunzio, RINA*
09.55 - 10.15	**Advanced characterizations methods for rotating magnetization - Vector properties and magnetic domain structure** *Andreas Thul, RWTH-Aachen*
10.15 - 10.35	**Overall evaluation of final properties of Ti stabilized NGO - Magnetic and mechanical properties** *Luciano Albini, RINA*
10.35 - 10.50	**Q&A**
10.50 - 11.00	**Coffee break**

PARTNERS

RINA · OCAS · RWTH AACHEN UNIVERSITY · voestalpine ONE STEP AHEAD. · GHENT UNIVERSITY

Hydra Project

Project number: IPCEI-I2_0000002

Hydrogen innovative plants and related processess for the production of green steel in Europe

The IPCEI project HYDRA IT06 is executed by Rina Consulting – Centro Sviluppo Materiali S.p.A. (in short RINA-CSM) as sole partner.
The main objective of HYDRA IT06 project is to contribute to the development of industrial solutions for the introduction and use of hydrogen in the steel supply chain as well as its integration with the related hydrogen production, transport and distribution infrastructures.
The introduction of the use of hydrogen in the production process potentially allows the decarbonization of the entire European steel sector, in line with the European objectives for 2050, increasing its global competitiveness.
In the HYDRA project it is envisaged the creation of an open innovation platform, potentially supporting all European steel producers, including small ones.
Hydra IT06 foresees the realization of new laboratories for material testing with H2, mainly located in Castel Romano (Italy).
On the other hand, the project regards the installation of an innovative pilot plant for:

- the production of pre-reduced iron with hydrogen (DRI Tower)
- the production of "green steel" in an Electric Arc Furnace (EAF), using pre-reduced iron from DRI Tower as raw material.

11.00 - 11.05	**Introduction** *Pietro Gimondo, RINA*
11.05 - 12.25	**Overview of the HYDRA project** *Filippo Cirilli and project team from RINA* • **Preliminary Remarks**, Filippo Cirilli • **Focus on WP1** • **Focus on WP4**
12.25 - 12.35	**Q&A**
12.35 - 12.50	**Project Partners' Contributions**
12.50 - 13.00	**Q&A**
13.00 . 14.00	**Lunch**

Miria Project

Project number: 101058751 - HORIZON-CL4-2021-RESILIENCE-01-20

Development of antimicrobial, antiviral, and antifungal nanocoatings for everyday surfaces

Since the end of 2019, the spread of COVID has deeply changed our lifestyle, resulting in historical events and decisions, such as the EU block of non-essential travel among countries, affecting the whole EU society economically and psychologically.
However, the persistence of the emergency status requires daily actions that tackle the spread of COVID. In this economical, societal and clinical context, the project MIRIA aims to develop wide-range-antimicrobial nanocoatings to be used in hospitals and other environments where cross-contamination and contagion risk are significant issues. In the wake of the covid outbreak, there has been large concern about infection spread of pathogens via high traffic surfaces. State of the art and commercial products coating solutions that both target a range of mixed pathogens and different surfaces (e.g., glass, metal, textile) are unfortunately scant. MIRIA solutions aim to fill this void, impacting on EU health, both directly (by creating public safe environments) and indirectly (by reducing COVID spreading and decreasing ill-related work absences and psychological pathologies). MIRIA ambition is to develop nanocoatings with a 99.99% effectiveness against a wide range of pathogens, especially SARS-CoV-2. The exploitation of MIRIA outputs deeply involves SMEs and the dissemination plan will follow a spill-over strategy in order to involve public and private stakeholders.

14.00 - 14.15	**Background, objectives and expected results**	*Mario Tului, RINA*
14.15 - 14.30	**Methodological approach**	*Mario Tului, RINA*
14.30 - 14.45	**Characterization methodologies**	*Alessia Bezzon, RINA*
14.45 - 15.00	**Nanopowders**	*Angelo Meduri, RINA*
15.00 - 15.15	**Nanocoatings**	*Angelo Meduri, RINA*
15.15 - 15.30	**Demonstrator**	*Alessia Bezzon, RINA*
15.30 - 15.45	**Dissemination & Exploitation**	*Ilaria Favuzzi, INSTM*
15.45	**Conclusion**	*Mario Tului, RINA*

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