01

EDITION 2,
AUGUST 2024

AID4GREENEST

AI-Powered Characterisation and Modelling for Green Steel Technology

WHAT IS AID4GREENEST?

AID4GREENEST is a three-year (September 1, 2023 – August 31, 2026) Horizon Europe project with a budget of around 5 million EUR. It aims to develop a range of new Artificial Intelligence-based rapid characterisation methods and modelling tools for the steel sector.

IN THIS EDITION

CELEBRATING A SUCCESSFUL FIRST YEAR OF AIDGREENEST

The first year of AID4GREENEST has been marked by significant progress. The Consortium has clearly defined all the materials and processes to be modelled, manufactured the materials, and supplied all project partners with the materials for characterisation. Our experts in modelling and AI have started conceptualisation and drafting their models and AI-tools. Meanwhile, activities in standardisation and life cycle analysis also began.

But the main outcome of the first year is the great team spirit developed by all consortium members! And so, our journey continues.

Dr. Ilchat Sabirov
Project Coordinator

PROJECT NEWS

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AID4GREENEST holds first Project Review and General Assembly Meetings

On March 21, AID4GREENEST members held the first Project Review and General Assembly meetings. The purpose of the meetings was to review the progress made on the project within the first six months, to identify challenges that have arisen, and to provide an opportunity for consortium members to communicate updates, concerns, and feedback to one another. **Read more...**

FIRST WEBSITE FOR EPOTENTIA'S OPEN DATA PLATFORM LAUNCHED

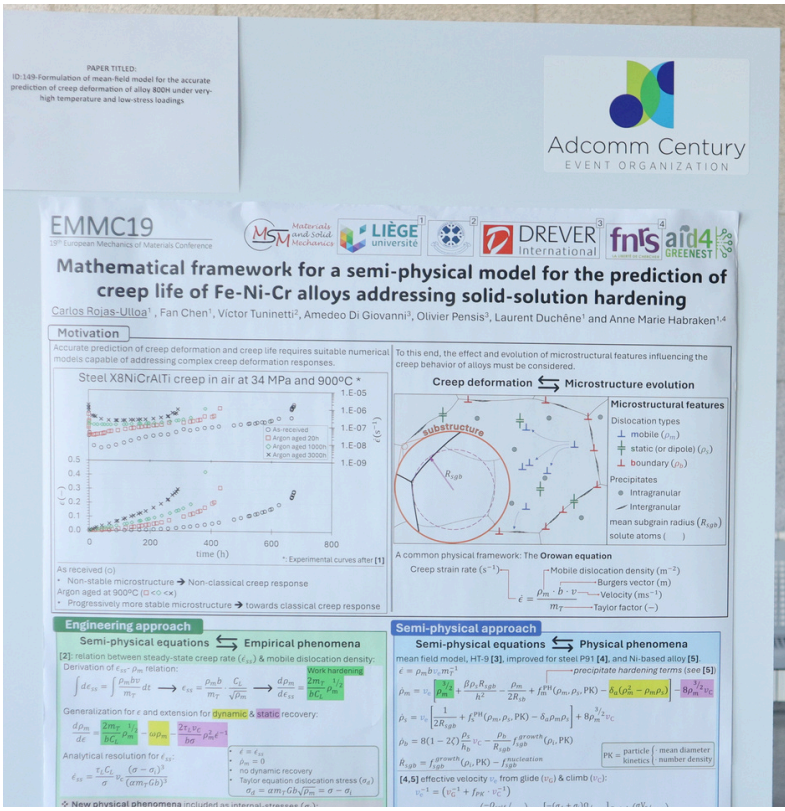
AID4GREENEST project partner, ePotentia, has launched the first website for MicrostructureDB, an open data platform for microscopy. Th database gathers various forms of SEM data, including (B)SE and EBSD data, as well as derived properties. **Find out more...**

EXPLORING THE ADVANTAGES AND DISADVANTAGES OF DIVERSE HYBRID CALIBRATION

AID4GREENEST researcher, Dr. Christina Schenk has presented on the the advantages and disadvantages of diverse hybrid calibration and prediction approaches at the Conference on Mathematical Aspects of Materials Science (#MS24) in Pittsburgh. **Read more.**

PROJECT NEWS CONT.

AID4GREENEST on show at EMMC19 in Madrid

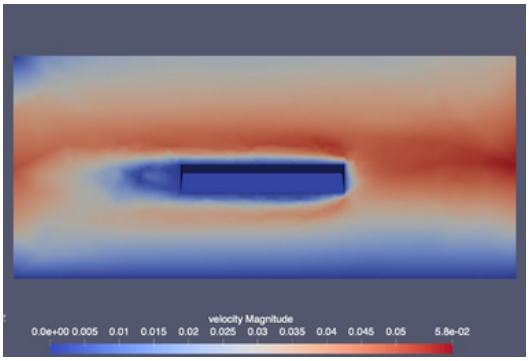


AID4GREENEST researcher, Carlos Rojas Ulloa, from the University of Liège, was a participant in the Poster Competition at this year's European Mechanics of Materials Conference (EMMC19) in Madrid. **Read more...**

FROM CREEP MECHANISMS TO MACROSCOPIC AND MICROSCOPIC MODELS

AID4GREENEST's Prof. Anne-Marie Habraken from the University of Liège, was featured as part of the Metallic Microstructures European Lectures Online (MMELO) series.

Read more...



AID4GREENEST RESEARCHERS DEVELOP INNOVATIVE PHYSICAL SIMULATION SET-UP

The AID4GREENEST research team at the University of Oulu has developed an innovative set-up for the physical simulation of the quenching process of meter-scale products.

Read more...

MEET THE NEWEST AID4GREENEST TEAM MEMBERS

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AID4GREENEST consists of 10 partners from 4 countries from the public and private sectors and a range of academic, research, industrial and government bodies including IMDEA Materials Institute, EurA AG, ePotentia, Fraunhofer IWM, Ghent University, OCAS NV, Reinosa Forgings & Castings, The Spanish Association for Standardisation, the University of Oulu and the University of Liége.

During the last 6 months of the project, a number of new researchers from these partners have joined the AID4GREENEST project, and we welcome them here!

Kiran Kumaraswamy
Fraunhofer IWM

Kiran has held a full-time role at Fraunhofer IWM since 2023. He earned his M.Sc. degree in Computer Science, specialising in AI, from the University of Freiburg. He works as a full stack developer on the *Materials Informatics* team, focusing on promoting interoperability and the FAIR data principles in German and European projects.

Martin Fuchs
Fraunhofer IWM

Martin joined Fraunhofer IWM as a Test Engineer in 2019 having graduated from Offenburg University of Applied Sciences with a degree in Mechanical Engineering/Materials Science. His current role involves optimising forming tools and processes, while utilising numerical simulations facilitate the avoidance of trial and error loops

Sepideh Khalatabad
Ghent University

Sepideh's role in AID4GREENEST focuses on developing advanced AI-based tools for material characterisation and data management. Her doctoral research is related to the use of AI to classify and interperate steel microstructure images. Additionally, she works on designing and implementing AI-driven platforms to manage and standardise data efficiently.

Rishabh Bharadwaj
University of Oulu

Rishabh is a Doctoral Researcher at the University of Oulu. He earned his Master of Technology degree from the Indian Institute of Technology, Bombay. His areas of interest include Thermomechanical processing, Microstructural characterisation, Phase transformation, Physical simulations, and Numerical modelling.

Paula Chonillo
IMDEA Materials

Paula is a predoctoral researcher in materials science and engineering. She holds a B.Sc. in Mechanical Engineering and an M.Sc. in Materials Science and Engineering from UPC in Barcelona, Spain. Her current research focuses on creep-resistant metals in IMDEA Materials' Physical Simulation research group.

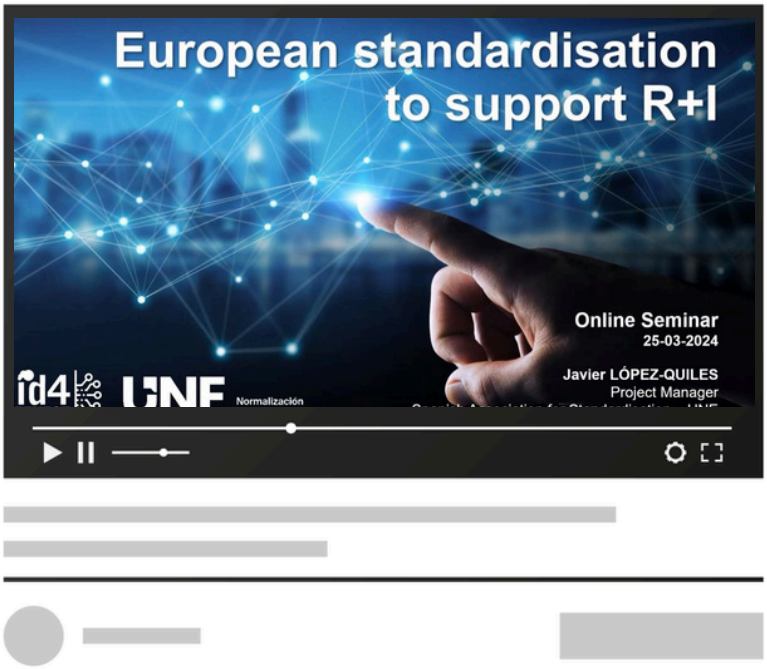
Partners

aid4 GREENEST

STANDARDISATION ACTIVITIES/COLLABORATION

A key element of the AID4GREENEST project is the collaboration with our EU sister projects and initiatives. We are committed to establishing collaborations with our sister and partner HORIZON Europe projects such as AddMorePower, CoBRAIN, D-STANDART, DiMAT, Knowskite-X and MatCHMaker as well as EU initiatives including the European Materials Modelling Council (EMMC) and the European Materials Characterisation Council (EMCC).

One of the key elements of the AID4GREENEST project, as well as our sister projects, is the focus on standardisation. AID4GREENEST has been actively collaborating with these sister projects in this area. Javier López-Quiles from UNE organized an online seminar titled "*European Standardization to Support Research and Innovation*," which garnered significant attention from the research community and was well attended by both sister projects and other relevant EU initiatives. **Watch below.**



EUROPEAN STANDARDISATION TO SUPPORT R+I: JAVIER LÓPEZ-QUILES

Furthermore, AID4GREENEST is actively participating in the standardisation activities organised by its sister projects, particularly in the revision of CWA 17815:2021, “Materials Characterisation – Terminology, Metadata, and Classification.” This revision, organised by the NanoMECommons project, kicked off on May 16, 2024.

Sister and partner projects

AddMorePower · CoBRAIN · DiMAT · D-standart · KNOWSKITE-X · MatCHMaker Materials Characterisation & Modelling

Latest project videos

MEET THE AID4GREENEST TEAM: YOAV NAHSHON FROM FRAUNHOFER IWM

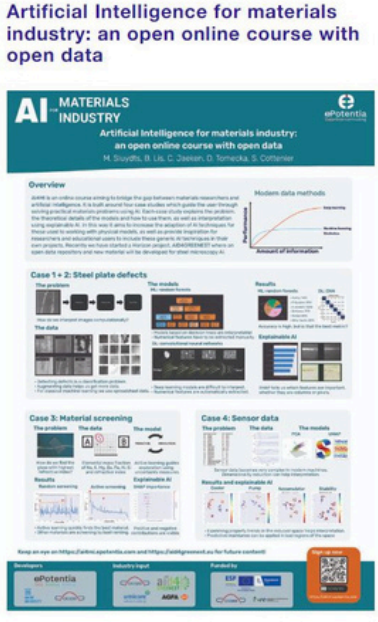
MEET THE AID4GREENEST TEAM: RINA JAEKEN FROM EPOTENTIA

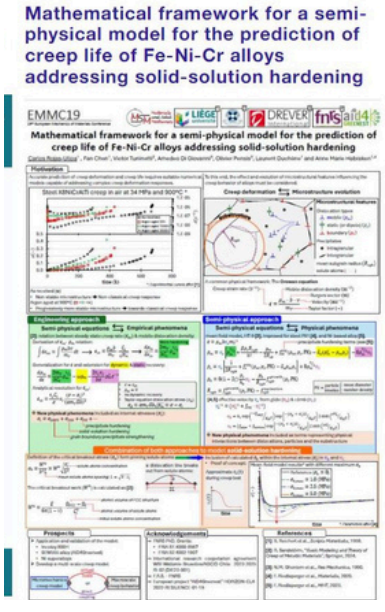
EUROPEAN STANDARDISATION TO SUPPORT R+I: JAVIER LÓPEZ-QUILES

BEHIND THE SCENES AT REINOSA FORGINGS & CASTINGS

Follow us on YouTube for more multimedia content, here.

AID4GREENEST Poster Gallery





UPCOMING EVENTS

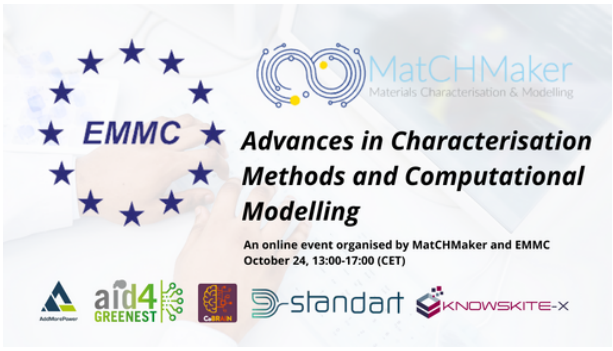
On September 19-20, AID4GREENEST will hold its second Project Review and General Assembly meetings, the first time these meetings, which will also focus on planning research for the next six months, will be held in person.

AID4GREENEST's Dr. Aarne Pohjonen from the University of Oulu will present on the development of a cellular automata model for austenite formation at September's SIMS EUROSIM 2024. **Find out more.**

Dr. Lukas Kertsch from Fraunhofer IWM will feature as part of the Materials Science and Engineering Conference, September 24-26. **Find out more.**

Dr. Maxim Zapara from Fraunhofer IWM will represent AID4GREENEST at the EUROFORGE conFair. **Find out more.**

IMDEA Materials' Dr. Christina Schenk will explore predictive modelling techniques at this September's CNM 2024. **Find out more.**



ePotentia's Rina Jaeken will present at the Advances in Characterisation Methods and Computational Modelling seminar organised by MatCHMaker and the EMMC. **Find out more.**

UPCOMING EVENTS

FEMS 2025 EUROMAT

18th European Congress and Exhibition on Advanced Materials and Processes

Granada,
14 – 18 September 2025

The AID4GREENEST consortium is organizing a symposium titled "Artificial Intelligence, Modelling, and Data Science in Advanced Alloy and Process Design" in Area D: "Characterization, Modelling, and Artificial Intelligence" at the EUROMAT 2025 Congress in Granada (September 14-18, 2025). We warmly invite you to submit your abstract and present at the event! **More information.**

ESTEP

ESTEP Annual Event 2024

The annual ESTEP event "*H2 for Green Steel meets A Circular Economy driven by the European Steel*" will take place in Austria from October 29-31. This event brings together the European steel community to discuss two pillars of the Clean Steel Partnership towards carbon-lean processes: the hydrogen exploitation and the circular economy application. Dr. Ilchat Sabirov will present how AID4GREENEST is contributing to the development of green steel technology. **More information.**

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Thank you for signing up for the AID4GREENEST newsletter. Our next edition will be released in February 2025. Until then, follow us at our website: www.aid4greenest.eu

And don't forget to follow us on our social media channels

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