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EDITION 3,
FEBRUARY 2025

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

RECOGNISING THE HUMAN ELEMENT OF AID4GREENEST

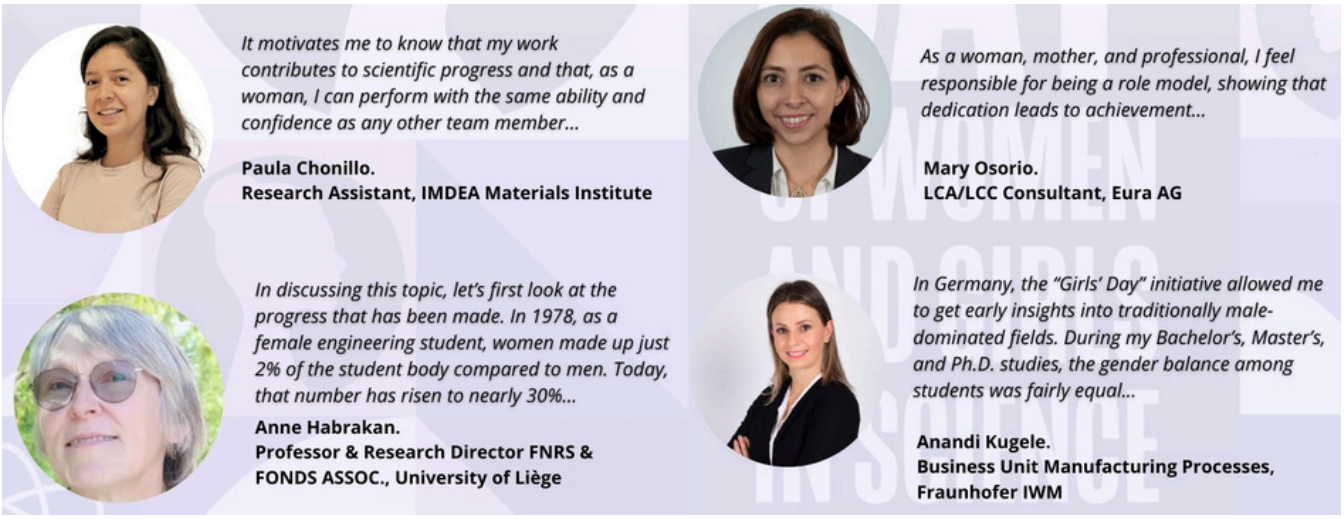
Welcome to our third project newsletter! We're excited to share updates on our green steel technology initiative, dedicated to the health of our planet and the well-being of humankind. Our project aims to revolutionise steel production by focusing on sustainability, reducing environmental impact, and creating a cleaner, greener future for all.

This vision is being brought to life by a team of 40 researchers, consultants, project managers, communication experts and more, all of whom are passionate, dedicated individuals working tirelessly, and we are deeply grateful for their commitment.

Thank you for being part of this exciting journey!

Dr. Ilchat Sabirov
AID4GREENEST Project Coordinator
IMDEA Materials Institute

AID4GREENEST celebrates International Women and Girls in Science Day



In celebration of International Women and Girls in Science Day, which was celebrated on February 11, AID4GREENEST would like to recognise the invaluable contributions of women in driving scientific and technological advancements. We are proud to have a team of talented female researchers and project managers playing a crucial role in our mission to innovate materials characterisation in the steel sector. **Read more...**


Dr. Christina Schenk
IMDEA Materials Institute

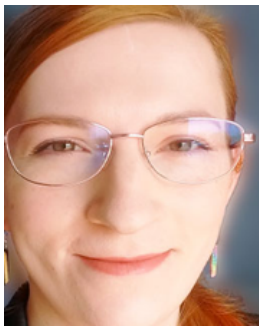

Paula Chonillo
IMDEA Materials Institute


Estela Izquierdo
IMDEA Materials Institute


Marta Hidalgo
IMDEA Materials Institute


Mary Osorio
EurA AG


Dr. Daria M. Tomecka
ePotentia


Barbara Lis
ePotentia

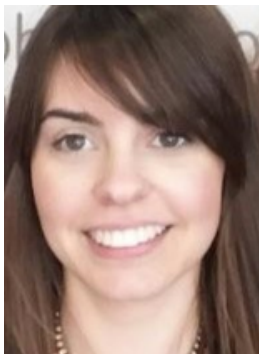

Rina Jaeken
ePotentia


Anandi Kugele
Fraunhofer IWM


Dr. Jennifer Reichert-Schwärzle
Fraunhofer IWM


Sepideh Khalatabad
Ghent University


Karen Hemelsoft
Ghent University

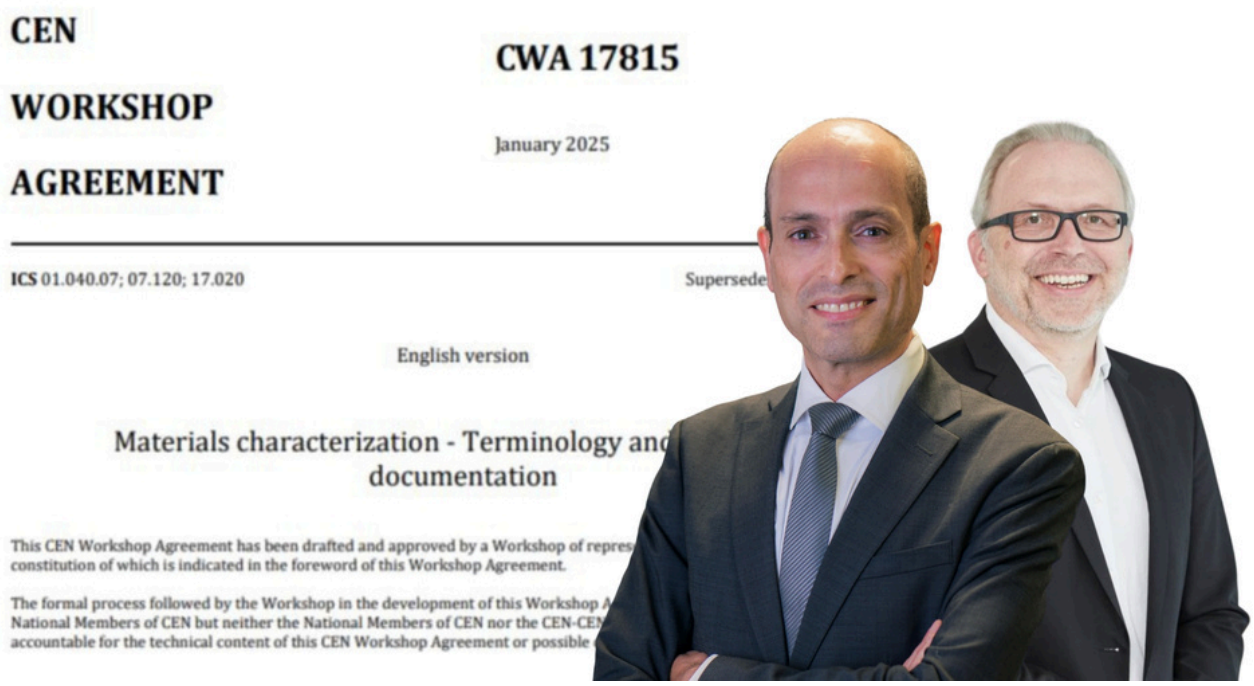

Claudia Saiz Bringas
Reinosa Forgings and Castings


Asst. Prof. Anne Mertens
University of Liège


Prof. Anne Habraken
University of Liège

PROJECT NEWS

AID4GREENEST researchers help craft new CEN Workshop Agreement to enhance materials characterisation standardisation


CEN

WORKSHOP

AGREEMENT

CWA 17815

January 2025

ICS 01.040.07; 07.120; 17.020

English version

Materials characterization - Terminology and documentation

This CEN Workshop Agreement has been drafted and approved by a Workshop of repres constitution of which is indicated in the foreword of this Workshop Agreement.

The formal process followed by the Workshop in the development of this Workshop A National Members of CEN but neither the National Members of CEN nor the CEN-CE accountable for the technical content of this CEN Workshop Agreement or possible

AID4GREENEST researchers have helped craft the new CEN Workshop Agreement (CWA) to enhance materials characterisation standardisation. Kiran Kumaraswamy from Fraunhofer IWM, one of those involved, highlighted notable improvements in the recently approved document. **Read more...**

AID4GREENEST CELEBRATES FIRST YEAR OF PROGRESS IN GREEN STEEL INNOVATION

The AID4GREENEST project has reached a significant milestone, celebrating its one-year anniversary while hosting its second Project Review and General Assembly meetings in Ghent, Belgium. **Read more...**

EPOTENTIA PLAYS ROLE IN DRAFTING EU'S AI CODE OF CONDUCT

As the European Union finalises its third draft of the AI Code of Conduct, ePotentia's scientific AI experts have been actively contributing to feedback sessions, highlighting crucial considerations for projects like AID4GREENEST. **Read more...**

PROJECT NEWS CONT.

AID4GREENEST'S DR. AARNE POHJONEN DELIVERS THREE TALKS AT EUROSIM 2024

Dr. Aarne Pohjonen, a University of Oulu researcher on the AID4GREENEST project, delivered three talks at Eurosim 2024, covering topics in materials modelling and computational methods. **Read more...**

HOW ARTIFICIAL INTELLIGENCE IS IMPACTING MATERIALS SCIENCE

In a recent roundtable event organised by the Universidad Nebrija, AID4GREENEST and IMDEA Materials Institute researcher, Prof. Ignacio Romero presented his results and reflections on advances in AI in materials science. **Read more...**

DEVELOPMENT OF AI-POWERED CHARACTERISATION AND MODELLING IN THE SPOTLIGHT

Ghent University researcher Sepideh Khalatabad has highlighted AID4GREENEST's role in developing AI-powered characterisation and modelling for green steel technology at the annual VSC | Vlaams Supercomputer Centrum Users Day. **Read more...**

MICROSTRUCTURE EVOLUTION DURING FORGING: A KEY ELEMENT OF AID4GREENEST RESEARCH

AID4GREENEST's Dr. Lukas Kertsch (Fraunhofer IWM), has presented on Mean-Field simulation of microstructure evolution during forging using FORGE and DynamiX GUI at the Transvalor International Simulation Days. **Read more...**

EXPLORING A LIBRARY FOR THE CALIBRATION OF COMPLEX AND EXPENSIVE MODELS

In September, AID4GREENEST researcher Dr. Christina Schenk took part in the Congress on Numerical Methods in Engineering (CMN2024) at the Universidade de Aveiro in Portugal. **Read more...**

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CREEP MODELLING HIGHLIGHTED AT METAL PLASTICITY SEMINAR

The University of Liège and AID4GREENEST researcher, Prof. Anne Marie Habraken, presented a poster on a creep modelling framework at 2024's Metal Plasticity Seminar organised by consortium member OCAS NV in November. **Find out more...**

MEET THE NEWEST AID4GREENEST MEMBER...

Yufei Liu
IMDEA Materials

IMDEA Materials Institute researcher Yufei Liu is a Master's graduate in Computational Mechanics from the University Duisburg-Essen in Germany. He has joined IMDEA Materials as a Predoctoral researcher in the institute's Computational Solid Mechanics group led by Prof. Ignacio Romero.

His current research focuses on the modelling of creep and bayesian calibration of models. He joins Prof. Romero, Dr. Ilchat Sabirov, Dr. Christina Schenk and predoctoral researchers Paula Chonillo and Marta Hidalgo in the IMDEA Materials AID4GREENEST team.

...AND A FOND FAREWELL

Recently, AID4GREENEST said goodbye to two of our valued project members, Anandi Kugele and Lukas Kertsch from Fraunhofer IWM. Anandi and Lukas both contributed greatly to the success of the project over the past 18 months and we wish them all the best in their new roles and in their future endeavours!

Anandi Kugele.

As a research manager at Fraunhofer, I coordinated and reported on communication, dissemination, and exploitation activities within the AID4GREENEST project. It was inspiring for me to see the impact we can achieve by showcasing our motivation and efforts. Only by making our work visible and building networks, the world will see the great impact AID4GREENEST will make for a greener future of the European steel industry. My experiences in AID4GREENEST, especially in science communication, have been a great addition to my scientific background in chemistry. Particularly, I appreciate that, as a young scientist, I was encouraged to take responsibility in the project. I am deeply grateful to have been part of AID4GREENEST, leaving with good memories, wonderful new colleagues, and skills to carry forward into my next role in academia.

Lukas Kertsch

Contributing to the RFC (Reinosa Forgings & Castings) business case was a great step towards bringing advanced material modelling techniques into application. My activities in the project covered a variety of different fields ranging from material testing and modelling to process simulation. I appreciate the great commitment of all partners, especially RFC, to the business case, all of them greatly contributing to tomorrow's way of material and process design. After my doctorate at the Fraunhofer IWM, AID4GREENEST was a great opportunity to apply the material modelling techniques I had developed for my PhD. Now I say goodbye to start a new chapter outside academia, however, with a similar mission: to make industry more sustainable.

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AiMPACT

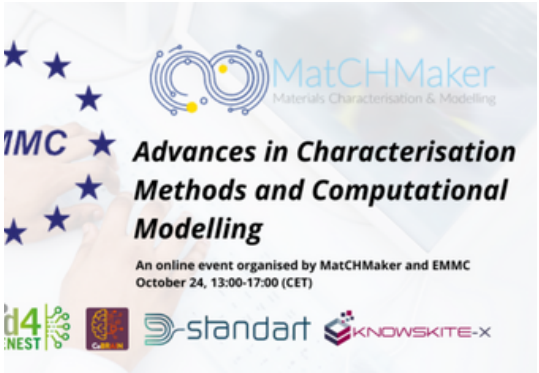
ADVANCED MATERIALS MODELLING & CHARACTERISATION CLUSTER

AID4GREENEST FORMS PART OF NEW AIMPACT CLUSTER

As part of the ongoing collaboration with our EU sister projects and initiatives, AID4GREENEST is proud to form part of the newly conceived **AiMPACT or Advanced Materials Modelling & Characterisation Cluster (AIMPACT)**, alongside our sister and partner Horizon Europe projects: AddMorePower, CoBRAIN, D-STANDART, Knowskite-X and MatCHMaker. The formation of this new cluster will facilitate knowledge sharing, event organisation, and communication and dissemination to maximise the societal impact of each individual project.

THE DIGITAL TRANSFORMATION AND SUSTAINABLE INNOVATION IN EUROPEAN STEEL MANUFACTURING

In October, IMDEA Materials researcher Dr. Ilchat Sabirov was on hand for the European Steel Technology Platform (ESTEP)'s Annual event in Austria where he highlighted AID4GREENEST's ongoing contribution to the development of a circular green steel economy. **Read more...**



COLLABORATION IN ADVANCING CHARACTERISATION METHODS AND COMPUTATIONAL MODELLING

As part AID4GREENEST's collaboration with the European Materials Modelling Council (EMMC), researcher Rina Jaeken from ePotentia took part in the online event *Advances in Characterisation Methods and Computational Modelling*, coordinated by the French Atomic Energy Commission, and the EMMC. **Read more...**

Sister and partner projects

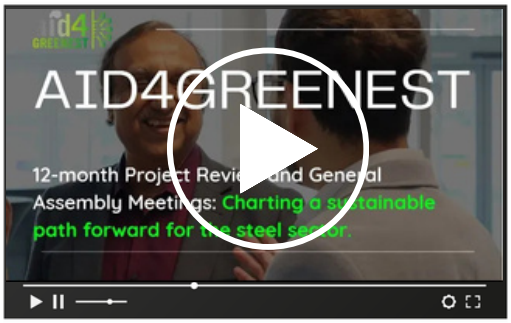
AddMorePower · CoBRAIN · DiMAT · D-standart · KNOWSKITE-X · MatCHMaker Materials Characterisation & Modelling

Latest project videos

MEET THE AID4GREENEST TEAM: DARIA TOMECKA FROM EPOTENTIA

AID4GREENEST PARTNER IN FOCUS: UNE

AID4GREENEST PARTNER IN FOCUS: UNIVERSITY OF OULU

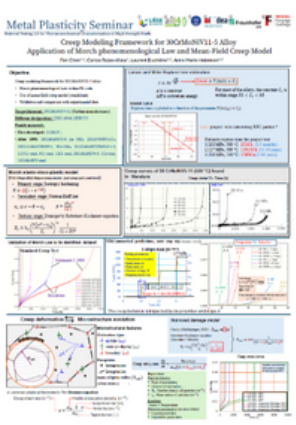


TAKING THE GREEN STEEL CHALLENGE

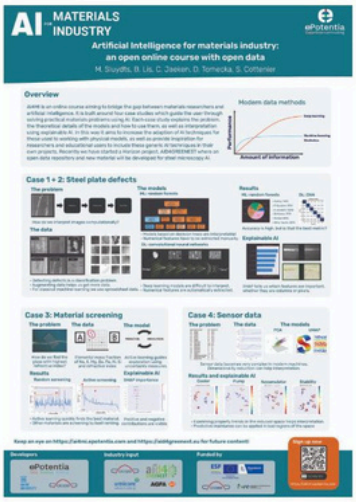
Follow us on YouTube for more multimedia content, here.

AID4GREENEST Poster Gallery

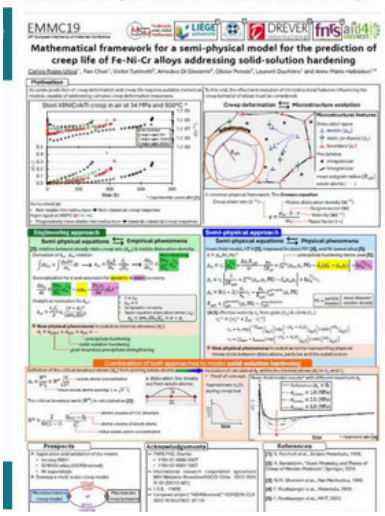
Creep modeling framework for 30CrMoNiV11-5 alloy application of Morch phenomenological law and mean-field creep model



Artificial Intelligence for materials industry: an open online course with open data



Mathematical framework for a semi-physical model for the prediction of creep life of Fe-Ni-Cr alloys addressing solid-solution hardening



UPCOMING EVENTS

The AID4GREENEST consortium is organising 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). More information. **Find out more...**

7th International Conference on Advances in Solidification Processes

June 10-13, 2025, Madrid, Spain

AID4GREENEST researcher Dr. Aarne Pohjonen from the University of Oulu will present on the effect of solidification-induced segregation on austenite formation and grain growth during re-heating of a forged steel part at this year's 7th International Conference on Advances in Solidification processes. The event is organised by fellow AID4GREENEST project member IMDEA Materials Institute. **Find out more...**

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

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

AID4GREENEST has received funding from the European Commission under the European Union's Horizon Research and Innovation programme (Grant Agreement No. 101091912). 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.

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