

Insights of our Sister Projects and Clustering Activities

Sister Project: KNOWSKITE-X - Interview



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Please introduce yourself and describe your entity's role in the KNOWSKITE-X project. Please also introduce the project's team.

I am Elise Berrier, I am researcher in the French national centre for scientific research (CNRS) since 2006. My research topics cover the spectroscopic in situ and operando investigation of functional materials at work. In KNOWSKITE-X, the CNRS has the role of coordinating the KNOWSKITE-X project and is practically involved in modelling and advanced characterisation activities.

Please present KNOWSKITE-X, its basic goals and visions.

The basic goal of KNOWSKITE-X is to contribute to foster the discovery of new materials by following a science-based approach augmented by the means of artificial intelligence. In the KNOWSKITE-X context, such materials are to be used as solid-oxide and supercapacitor electrode materials. Our scientific

approach puts on the scene multi-scale modelling, materials design and synthesis besides basic and use-relevant characterisation. The landscape of possible composition is endless, pressing the need for artificial intelligence at various stages of the process.

Our vision is of gap bridging nature, with an intense cooperation between modelling levels, between experimental and computational approaches, as well as between materials design and characterisation.

Please give us an overview of the plan and the consortium.

Our workplan involves two intensively cooperating scientific work-packages devoted to (i) multi-scale modelling, including the ab initio generation

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of missing datasets for machine learning (hybrid modelling) and (ii) materials design and characterisation.

Downstream of the value chain, 2 work-packages are devoted to the transfer of scientific results into valuable outputs, in the form of dissemination and communication activities on the one hand and exploitation on the other hand.

A pivotal workpackage on harmonisation is especially dedicated to facilitate the implementation of standard protocols relevant to the industry commons.

The KNOWSKITE-X Consortium gathers 3 universities and high schools (Univ. Padova-IT, Univ. Lille-FR and Centrale Lille-FR), 5 research centers from both the public (CNRS-FR, NCSR-Demokritos-GR, INL-PT) and private sectors (IDENER-SP, KNOW-CENTER-AT), one synchrotron facility (Elettra, IT) and two companies involved in the project's use case: FIAXELL-SW and C2C Caps-PT. The project is managed by WarrantHub-IT.

Is there a particular moment or achievement related to this project that you would like to share with us?

Each project's meeting is a great source of inspiration and is full of very intense moments, when ideas and concepts take shape. One achievement is the stimu-

lation of the cooperation between the young researchers of the project and their outstanding progresses. A great moment has been to meet several of the KNOWSKITE-X partners at the International Conference on Catalysis (ICC 2024) and to present the project to the community at our booth.

Is there anything else you would like to share about KNOWSKITE-X?

KNOWSKITE-X is a stimulating, supportive challenging and friendly research and development ecosystem. We are glad and excited to share our views and enthusiasm along our periodic webinars and the events we participate in and we are eager to initiate new collaborations worldwide.

How can subscribers stay informed about your KNOWSKITE-X progress, news and major achievements?

To keep updated, the easiest way is to pay a visit to our [website](#) and subscribe to our [LinkedIn](#) or [X](#) account.



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AiMPACT Cluster Official Video

Created by D-STANDART project

The AiMPACT video presents the cluster's shared vision for accelerating sustainable, digital materials innovation across Europe by integrating advanced modelling, characterisation, and data-driven approaches. As part of this ecosystem, **AID4GREENEST** plays a key supporting role: it is a three-year Horizon Europe project developing AI-based rapid characterisation and modelling tools tailored to the steel sector, from alloy chemistry and microstructure to process design and product performance, and is building an open online platform to share data and workflows across the wider materials community. **CoBRAIN** contributes deep learning-enabled integration of computational and experimental workflows to design wear- and corrosion-resistant coatings, emphasising interoperable, structured data for decision-making. **AddMorePower** targets next-generation power electronics materials, advancing characterisation and modelling of wide-bandgap semiconductors like GaN and SiC to boost performance and industrial resilience. **D-STANDART** creates rapid, data-driven surrogate models for durability and fatigue of composite structures, enabling quicker, more sustainable structural assessments. **KNOWSKITE-X** focuses on energy storage materials for reversible chemical-to-power devices, integrating multi-scale modelling, AI, and characterisation to accelerate discovery of efficient electrodes. **MatCHMaker** strengthens the cluster by developing interoperable characterisation and modelling tools that connect datasets and workflows, helping all projects share insights efficiently. As highlighted in the video, the cluster embodies a coordinated push toward greener, faster and more digitally enabled materials innovation.

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