EIC – ARPA-E Workshop on:
Artificial Intelligence as a tool to accelerate scale-up of advanced materials
30 September 2024 15:00 – 17:00 CET
https://ecconf.webex.com/ecconf/j.php?MTID=m5d5f86550b6cf905cdf40742a3675bd1

Rationale

The potential to design and scale-up custom-made advanced materials could significantly impact new applications and open new possibilities for innovation.

There is a pressing need to accelerate all stages of advanced materials development, including their design, scale-up, and manufacturing capabilities (from lab to production), as demand for these materials is expected to grow substantially in the coming years.

In this context, the traditional approach of design, synthesis, characterization, and testing is shifting toward a more integrated, closed-loop process.

However, the timeline for bringing new materials to market remains a strategic challenge. Fast-tracking the development and deployment of new technologies requires a multidisciplinary collaboration among academia, governments, and industry.

Artificial intelligence (AI) is a key technology to speed up the transition from lab to production. AI techniques, including machine learning (ML) and deep learning (DL), play a vital role in accelerating materials development, as their computational strategies improve automatically with more data. Additionally, AI-enhanced robotic platforms, known as self-driving laboratories or materials acceleration platforms, offer greater control and precision in experiments, producing high-quality data to facilitate faster scaling of advanced materials.

This workshop, co-organized by the European Innovation Council (EIC) and the Advanced Research Projects Agency - Energy (ARPA-E), will highlight the latest trends in the use of AI for advanced materials design and scale-up.

Date

Monday, 30 September 2024, 15:00 – 17:00 (CET) / 9:00 – 11:00 (EST)

Location

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Time	Topic	Speakers
14:45	**Registration**	
15:00	Welcome & introduction	Cory Phillips, ARPA-E Program Director on Catalytic Materials
	Welcome & introduction	Francesco Matteucci, EIC Programme Manager for Advanced Materials for Energy & Environmental Sustainability
	Landscape Analysis from Accelerated Materials Experimentation Enabled by the Autonomous Materials Innovation Infrastructure (AMII) Workshop	Phil Kim, ARPA-E Program Director on AI for Materials
	EIC portfolio activities in the field of advanced materials	Paolo Bondavalli, EIC Programme Manager for Advanced Materials for Energy
15:20	**Short keynotes**	
	Materials acceleration platform (high throughput method)	Kourosh Malek, Head of Division: Artificial Materials Intelligence Forschungszentrum Juelich
	Usage of AI to accelerate the discovery of materials/catalysts	Kevin Leonard, University of Kansas (KU)
	Fusing AI and simulations for materials design	Rafael Gomez-Bombarelli, Massachusetts Institute of Technology (MIT)
	Emergence of Agentic AI for Accelerating Catalytic Materials Research	Honglian Xin, Virginia Tech (VTech)
16:30	**Tech to market**	
	Future trends in AI-driven materials for industrial applications	Matej Macak, McKinsey
	AI-accelerated incubation of new climate technologies	Daniel Miodovnik, Orbital Materials
	Leveraging simulations and machine learning for efficient materials screening on a scalable platform	Josua Vieten, ExoMatter
17:00	**Conclusions & final remarks**	