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PRESS RELEASE

Call for Abstracts: AI Circular Economy Conference 2026

Unlocking the Potential of Renewable Carbon from Biomass, CCU, and Recycling.

Hürth, 15 July 2025: Artificial intelligence (AI) is no longer just a technological trend; it is a transformative force that is accelerating the transition from fossil fuels to renewable carbon sources in the chemical and materials industry. This represents one of the greatest industrial challenges since the beginning of the industrial revolution, requiring the most advanced digital solutions available. AI is emerging as the key enabler of this transformation.

nova-Institute proudly presents its new highlight event, bringing together the best innovators, researchers, and practitioners of this fundamental digital transformation of our society: The AI Circular Economy Conference, 4-5 March, 2026 in Cologne and online. Join us at this groundbreaking conference to explore how advanced AI tools and applications are shaping the future of circular and sustainable materials by unlocking the full potential of renewable carbon from biomass, carbon capture utilisation (CCU), and recycling:

- High-tech innovators are delivering cutting-edge AI solutions for science and industry.
- Chemical and plastics producers are using AI to innovate more quickly, efficiently, and sustainably.
- The agricultural and biomass sectors are using AI to identify new sources of raw materials and close the loop on material flows.
- Cutting-edge applications of AI, including AI-assisted modelling of CCU processes and catalysts, optimisation of CO_2 capture, and the design of novel chemical pathways such as those involving electrochemistry.
- Use of AI for process control and optimisation in depolymerisation, advanced waste stream sorting and feedstock analysis, as well as quality assurance of recycled materials.

Featuring top experts in AI development, chemical and plastics manufacturing, biotechnology, agriculture, recycling and sustainability, this interdisciplinary event will explore the latest developments in the field. Whether you are a data scientist working on new industrial applications, a materials professional seeking for practical tools, or part of the management or investment community looking to understand strategic and financial opportunities, this conference will provide you with actionable insights, valuable use cases and collaborative opportunities. The “AI Circular Economy Conference” will bring together all relevant stakeholders to discuss the need for AI solutions in a circular economy in the chemistry and materials sector and to match these needs with technical solutions from scientists and developers.

Conference topics

We invite you to send your abstracts for presentations at the AI Circular Economy Conference that contribute to advancing AI in circular and sustainable material systems. Topics include, but are not limited to, the following:

1. Bio-based Materials

- AI-driven design of bio-based and biodegradable polymers (digital twins)
- Machine learning for enzyme and protein optimisation
- Precision agriculture and smart biomass cultivation

2. CO_2-based Solutions (Carbon Capture & Utilisation)

- AI-assisted modelling of CCU processes and catalysts
- AI for CO_2 capture optimisation
- AI design for new chemical pathways incl. electrochemistry

3. Advanced Recycling

- AI for process control and optimisation in depolymerisation
- Waste stream sorting and feedstock analysis
- Quality assurance of recycled materials

4. Cross-cutting & Interdisciplinary Topics

- Supply chain prediction and risk analysis
- AI for sustainability assessments and policy modelling
- Infrastructure, data integration and digital readiness
- Chemical and plastics producers are using AI to innovate more quickly, efficiently, and sustainably
- High-tech innovators are delivering cutting-edge AI solutions for science and industry
- Forecasting and lifecycle assessment

Submit your abstract now to share your innovations at the forefront of AI-driven solutions for a circular and sustainable chemical and materials industry. Deadline for submission is 5 September 2025 – later submission can be made and, in the case of special focal points and qualities, can also still be accepted. https://ai-circulareconomy.eu/call-for-abstracts/

Any questions or suggestions?

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nova-Institut GmbH has been working in the field of sustainability since the mid-1990s and focuses today primarily on the topic of renewable carbon cycles (recycling, bioeconomy and CO_2 utilisation/ CCU).

As an independent research institute, **nova** supports in particular customers in chemical, plastics and materials industries with the transformation from fossil to renewable carbon from biomass, direct CO_2 utilisation and recycling.

Both in the accompanying research of international innovation projects and in individual, scientifically based management consulting, a multidisciplinary team of scientists at **nova** deals with the entire range of topics from renewable raw materials, technologies and markets, economics, political framework conditions, life cycle assessments and sustainability to communication, target groups and strategy development.

50 experts from various disciplines are working together on the defossilisation of the industry and for a climate neutral future. More information at: nova-institute.eu – renewable-carbon.eu

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