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## PRESS RELEASE

### AI Circular Economy Conference 2026: Final Program Published

#### Empowering Transformation: How AI Innovations Drive the Future of Circular Materials

**Hürth, 4 December 2025:** The AI Circular Economy Conference, organised by nova-Institute, takes place in Cologne, Germany, and online on 4–5 March 2026. The event brings together top experts from AI development, chemical manufacturing, recycling, materials science, biotechnology, and investment to explore how artificial intelligence is shaping the transition to circular and sustainable material systems. This year's conference features 26 cutting-edge presentations from speakers representing 12 countries. The opening keynote by the nova-Institute will address the strategic relevance of using artificial intelligence at the intersection of renewable carbon, highlighting new pathways and future challenges on the road to sustainability.

Artificial Intelligence is unlocking the vast potential of circularity and renewable carbon sectors by making processes, materials, and business models smarter and more efficient throughout the entire value chain – from feedstock innovation to reuse. Topics include transparency and traceability (digital passports), AI-driven molecular design, process control for depolymerisation, supply chain management, and sustainability assessments. As society demands rapid transformation, AI may provide essential tools for upscaling the use and the production of renewable carbon derived from biomass, recycling and carbon capture utilisation.

#### The Program: Five Thematic Blocks

Participants will engage with leading figures from renowned companies – including Covestro, Volkswagen, Schneider Electric, TOMRA – groundbreaking start-ups like ExoMatter and VCG.AI, and world-class research institutions, such as RWTH Aachen University, TNO, and the University of Delaware. The program is organised into five thematic blocks, showcasing the diversity and impact of AI applications across digital twins, process optimisation, advanced recycling, market analysis, and bioeconomy solutions.

#### Opening: Welcome Address and Keynote Speech by CEO Lars Börger (nova-Institute)

In his opening speech, Lars Börger will highlight the role of artificial intelligence as a key driver for the renewable carbon economy.

## Block 1 — Digital Foundations for Circular Transformation

### Session 1: Digital Twins, PINNs & Process Intelligence

- **Mexis Konstantinos, SYMBIOLABS Circular Intelligence (GR):** Bioreactor Digital Twins: Process Intelligence Using AI and ML
- **Othen Rosario & Pohlmeier Florian, Institut für Textiltechnik der RWTH Aachen University (DE):** From Data to Decisions: Digital Twins and Data Spaces
- **Krause Dennis, Covestro (DE):** From Digital Polyurethane Processing to AI: Generating Insights into Production Readiness of Circular Solutions

## Block 2 — Smart Production & Industrial Efficiency

### Session 2: AI-Optimised Operations in Manufacturing

- **Largeau Delphine, Schneider Electric Systems Germany GmbH (DE):** Unlocking Digital Circularity: A Game Changer!
- **Heuvel Flemming, ITA - Institut für Textiltechnik der RWTH Aachen University (DE):** AI-Driven Process Optimisation and Recycled Fiber Control in Paper Manufacturing
- **N.N., FINDIQ GmbH (DE):** Producing Efficiently and Empowering Tomorrow's Skilled Workers

## Block 3 — Advanced Materials, Chemical Intelligence & Recycling Pathways

### Session 3A: AI for Sustainable Materials Discovery

- **Lotfi Samira, National Research Council of Canada (CA):** Catalyst Design for Conversion of Syngas-to-Ethanol: A Machine Learning Approach
- **Aniban Xaiza, ExoMatter GmbH (DE):** AI-Powered Acceleration of Sustainable Materials R&D
- **Vasudevan Naveen Kumar, Oligomaster Inc. (CA):** Breaking the Materials Innovation Bottleneck
- **Urbanus Jan Harm, TNO (NL):** Unlocking the Potential of AI-driven Bio-based Polymer Design

### Session 3B: AI for Mechanical & Chemical Recycling Quality

- **Hermann Matthias, Citrine Informatics (USA):** Making Chemical and Mechanical Recycling More Productive Using AI
- **Römhild Daniel, WIS Kunststoffe GmbH (DE):** Challenges and Limitations of High-quality PCR Regranulates
- **Nasiri Ghiri Maryam, University of Lancashire (UK):** CO<sub>2</sub> Capture under Atmospheric Conditions Using MOFs

## Block 4 — Intelligent Resource Flows, Market Dynamics & Investment

### Session 4A: AI for Sorting & Feedstock Intelligence

- **Große Thomas, Volkswagen AG (DE):** Classification of Automotive Black Plastics Through Middle-Infrared Hyperspectral Imaging and Trained Neural Networks
- **Sama Valerio, TOMRA Sorting GmbH (DE):** Advancing Sorting: AI Innovations Driving full Material Circularity
- **Kutschenreuter Johanna, Ehrenmüller GmbH (DE):** KIKS – AI-Powered Platform for the Plastics Industry

#### Session 4B: AI for Economic Modelling & Market Strategy

- **Zambujal-Oliveira João, NOVA LINC'S | University of Madeira (PT):** Bridging ESG and Financial Performance
- **Kunlere Idowu, University of Delaware (USA):** Agent-Based Modelling of Plastic Circularity under Constraints
- **Jetzer Peter, Recycario Data Science Institut (DE):** AI – the Decision Compass for the Economic use of Regranulates
- **Brandkamp Michael, European Circular Bioeconomy Fund ECBF (DE):** Investing in AI Driven Start-ups in the Circular Economy

### Block 5 — Societal Integration, Bioeconomy & Future Horizons

#### Session 5A: Waste-to-Value & Bioeconomy Innovation

- **Liaqat Ali, Liaqat Corp (PVT) Ltd | PCSIR (PK):** PCSIR Community-Based Mobile Common Drying & Waste-Processing System
- **Cuquel Alexis, Kanadevia Inova (CH):** Optimizing Biomethane Production Through AI-Driven Feed Planning in Anaerobic Digestion Plants
- **Rerop Zora, Dahlia Biotech (DE):** Efficiency and Scaling in the Industrial Biotechnology

#### Session 5B: Society, Skills & Responsible Innovation

- **Bossler Ana, University of Alicante (ES):** Factor-Based Virtual Agent Simulation for Consumer Acceptance of Recycled Plastics
- **Patzelt Dominik, VCG.AI GmbH (DE):** Accelerating the Circular Economy With Data Intelligence
- **Hummert Christian, Agentur für Innovation in der Cybersicherheit GmbH (DE):** AI and Cyber Security in Chemical Industry

**Registration** for the AI Circular Economy Conference 2026 is now open:  
[ai-circulareconomy.eu/registration](https://ai-circulareconomy.eu/registration).

This conference offers the ideal environment for companies to position themselves as **sponsors**: [ai-circulareconomy.eu/sponsoring](https://ai-circulareconomy.eu/sponsoring) and **exhibitors** at the intersection of AI and circular economy: [ai-circulareconomy.eu/exhibition-booking/](https://ai-circulareconomy.eu/exhibition-booking/).

Find the **full program** here: [ai-circulareconomy.eu/program](https://ai-circulareconomy.eu/program)

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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<sub>2</sub> 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<sub>2</sub> 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](https://nova-institute.eu) – [renewable-carbon.eu](https://renewable-carbon.eu)

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