

PRESS RELEASE

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DYNAFLEX®

Cross-industrial network strengthens municipal industrial regions

The energy and raw materials industries are growing together and, at the same time, fluctuations in the supply of renewable energies are increasingly influencing production processes. The DYNAFLEX® High-Performance Center develops flexible solutions and system proposals, as well as operating and business models for sustainable cross-industrial networks. With an interactive exhibit, Fraunhofer UMSICHT is presenting a real-life example at Hannover Messe 2019. Visit us from April 1 to 5 at stand C22, hall 2.

Technologies to increase efficiency and prevent climate-damaging CO₂ emissions are becoming the focus of current business activities and corporate strategies. The pressure from stricter EU regulations regarding climate protection measures is growing, while the competitive situation must also be taken into account. Experts see great potential here, in that competitive advantages will arise in the future through sustainable and environmentally-friendly value creation – in addition to the quality feature “Made in Germany”.

The associated restructuring of existing production methods presents companies with major challenges: new technologies, more efficient processes. In addition, value creation chains that transcend existing sector and industry boundaries will grow in importance. One solution is cross-industrial networks, within which regional industrial symbioses arise between companies from different sectors of the economy, such as production and energy. “Local material and energy flows can thus be used on site in the best possible way,” explains Dr. Georg Janicki from Fraunhofer UMSICHT. As the manager of the DYNAFLEX® High-Performance Center, he knows his way around flexible solutions for the energy transition and raw materials shift: “The use of electricity from renewable energy sources is an important driver.”

Adapting production processes to new situations

The integration of electricity generated from renewable sources is subject to temporal and site-specific fluctuations – caused by factors such as time of day or wind. If the energy and production sectors grow together within the framework of sector coupling, these factors influence the production processes. The DYNAFLEX® High-Performance Center, coordinated by Fraunhofer UMSICHT, develops flexible solutions and system proposals, as well as operating and business models.

Editor

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An initial model project is being developed on an industrial estate in Bad Langensalza, Thuringia: In a joint project, various companies from the automotive, bioenergy, and municipal supply sectors want to enter into a cross-industrial symbiosis with the support of Fraunhofer UMSICHT. As part of this, electricity generated from renewable sources should be used flexibly, depending on availability and demand. The goal: a new technology cluster with cross-sectoral value creation chains based on sustainable raw materials and energy sources and, at the same time, a demonstration site for innovative technologies in a volatile world. A technology park is also set to be created in the future, in which new commercial enterprises will establish themselves in order to achieve further sustainable synergy effects.

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More efficient thanks to “digital twins”

At Hannover Messe 2019, the DYNAFLEX® High-Performance Center will use the topics “Industrial Internet” and “Digital Twin” to illustrate a possible implementation of cross-industrial networking, which should find its way into practice in Bad Langensalza in the future. An exhibit that represents the actors from energy and production systems as a model and symbolizes a network has been equipped with QR tags for this purpose. If the user scans a tag on a tablet or smartphone, the digital twin, i.e. a virtual image with additional functions and information, is automatically displayed via “augmented reality” – directly and on site. “These could be, for example, plant, process, and production parameters. There is also further information that is important for the user. This includes electricity prices, market prices for reactants, delivery times for components, and maintenance plans,” explains Dr. Janicki. The augmented reality tool used to illustrate cross-industrial networking is itself the subject of developments relating to digitization at the DYNAFLEX® High-Performance Center. Besides visualizing the data, it also makes it possible to optimize and efficiently design control and operation in manufacturing and production processes.

Visit us at Hannover Messe 2019 from April 1 to 5 (hall 2, stand C22). The Fraunhofer UMSICHT team is looking forward to showing you the diverse possibilities and potential of the DYNAFLEX® High-Performance Center.

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DYNAFLEX® exhibit at Hannover Messe 2019: Cross-industrial networking creates regional industrial symbioses.

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DYNAFLEX® High-Performance Center: flexible solutions for the energy transition and raw materials shift.

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