



elca



European Lightweight Clusters Alliance

2021 | NEWSLETTER



Issue 01

FOREWORD

The ELCA network has grown immensely since its initial inception back in 2013, and its further consolidation in 2018. With this first publication, we are proud to showcase our distinguished group of individuals who represent the ELCA Network, and continuously bring innovative ideas and solutions to enhance the future of lightweighting technologies in Europe. We would like to thank our network and the individuals that have contributed to ELCA's immense growth today, and welcome you to our First ELCA Newsletter.

WHAT'S HAPPENED SO FAR

01

Future Projects

This period brought new projects to the forefront of the lightweight industry with the RIGHTWEIGHT, COSME ELCA and AMULET projects all being developed. Both the RIGHTWEIGHT and COSME ELCA are already in progress, the AMULET project will launch this autumn.

02

Working Group Workshop

The first ELCA workshop of 2021 took place at the start of the year in parallel sessions with all six working groups coming together to share ideas with the aim to foster collaboration between members and accelerate the adoption of lightweight materials in strategic industries. Learn more about the workshops [here](#).

03

ELCA Platform Updates

Since coming into fruition 6 months ago, the ELCA Platform has transformed into a digital hub full of innovation offerings and technological calls. Its use has gone beyond our network and has expanded into the likes and interests of potential partners looking for interested individuals to take part in their innovations and technological developments. For more information, check out the ELCA Platform [here](#).

04

PIEP Joining

The ELCA partnership welcomed PIEP - Innovation in Polymer Engineering in February of this year. PIEP aims to be a reference entity in polymer engineering innovation, contributing to the growth of the national plastics and related industry, ensuring an excellent response in the timely delivery of goods and services, oriented to the needs of R&D and innovation of its customers. Discover more about PIEP [here](#).

05

ACMA Webinar

In May, ELCA joined forces with ACMA (Automotive Component Manufacturers Association of India) by hosting a webinar focusing on lightweight technologies for the production of auto parts and components. Demonstrating a knowledge transfer from leading European experts to the Indian market.

THE ELCA NETWORK



EXCLUSIVE



An interview with the Head of Sector, Advanced Materials

ACHILLEAS STALIOS, PhD

Head of Sector, Advanced Materials,
Health and Digital Executive Agency (HaDEA)

"The EU makes a significant effort to support lightweight materials research"

What do you think about lightweighting initiatives in Europe compared to the rest of the world (eg. Asia, and North America)?

The EU makes a significant effort to support lightweight materials research and development in a decent way as compared to Asia and North America. I believe this effort should be stronger in the coming years.

During the last year, there has been some efforts to improve lightweight in the automotive sector and the aerospace sector, what has been done well and what do you feel still needs to be improved?

Efforts must focus on the price and eco-friendliness of lightweight materials. What is already done through EU research projects under various work programs such as FP7, H2020 and Horizon Europe to come are of significant importance but more work and investment should be done in the future.

Social engagement appears to be a challenge to several areas of innovation including lightweight, what do you feel are the important steps to ensure we increase active participation from our European communities?

Appropriate citizen's awareness on the lightweight benefits would facilitate lightweight market perspectives. For example, people should know the better environmental advantages of a light car, plane etc. They also should financially feel the difference, the use of a lighter car or airplane should clearly affect the citizen's finances and not the contrary.

What do you see are the main challenges in the field of Lightweighting and how do you see the future of of lightweighting in Europe?

Lightweight materials are of paramount importance in view of the major EU policy lines of CO₂ reduction, energy savings via natural resource preservation and recyclability. The main challenges of lightweighting are, their still high market price, their durability as compared to the traditional materials such as steel for transport, aluminum and the costly recyclability processes.

Where do you think European policy could contribute to these challenges in the future?

EU policy should boost research to meet the above challenges, cheaper lightweight, stronger and recyclable lightweight materials-based products.



HIGHLIGHTS FROM THE

ACMA WEBINAR

The Webinar with the Indian automotive component manufacturer association (ACMA) was the first tangible result of ELCA's ambition of promoting European leadership in the field of lightweighting on an international level. After having visited the ELCA website and following ELCA on their social media channels, ACMA got in contact with the ELCA office to discuss collaborative business opportunities. The result was this first webinar held on May 25th, 2021, in which numerous European lightweight experts presented their use cases in four selected domains to over 230 ACMA members.

India has recently become the 4th largest vehicle market in the world replacing Germany and is expected to be the world's third-largest automotive market in terms of volume by 2026 (overtaking Japan). The automotive industry is one of the core sectors of the Indian economy. ACMA, with its over 850 members, is the largest and most important association representing the automotive component manufacturers. Together all members account for 85% of the industry turnover in India.

The two-hour webinar aimed at showcasing executives of Indian Tier 1 and 2 suppliers how European expertise in lightweighting could be transferred and implemented. The session was split into three parts. First, the ELCA office gave a brief introduction to the opportunities of lightweighting

in the automotive sector. Second, 15 European experts presented their use cases thereby focussing on the main KPIs cost reduction, performance increase, and weight reduction.

In the third part, the ELCA office briefly presented insights about the Indian market. These insights were derived from a survey that was designed by the ELCA office and beforehand distributed among all ACMA members.

Overall, the ELCA office has received very positive feedback from ACMA and its members. V.K. Sharma the executive director commented "The event was a great success with a record number of participants." Soon ELCA and ACMA will discuss the next steps. The ELCA office is looking forward to developing the collaboration with ACMA and is already planning similar events with Associations from other relevant markets such as the United States.

Panel of Experts:

David Frometa (Eurecat)
Manel Dasilva (Eurecat)
Juergen Troeltzsch (Karl Mayer)
Turan Turgay (Karl Mayer)
Michael Luke (Fraunhofer IWM)
Verena Psyk (Fraunhofer IWU)
Meugenia Rodriguez (Eurecat)

Jaroslaw Jaškowiak (Fado)
Andrea Aicardi (Ghepi)
Thomas Hipke (Fraunhofer IWU)
Massimo Bercella (Bercella)
Philip Eyckens (Flanders Make)
Manuel Michiels (Flanders Make)

PARTNER'S SPOTLIGHT



Federico Capucci (Clust-ER MECH). Italy

What value has ELCA had for you in your organization?

ELCA has and I am sure will continue to have great value for the Clust-ER MECH. Our main mission is to generate added value, for our members in particular and in general for the entire network of research and innovation in Emilia-Romagna in the fields of advanced manufacturing and of the automotive industry. ELCA represents a qualified and highly operational observatory for gathering information and opportunities in the field of structural lightweighting, an area in which we already have a great deal of expertise but in which we know it is possible, as well as strategic, to grow further.



Clust-ER MECH is still a rather young structure (we have been operational since 2018) and small, if compared to other big European clusters with which we collaborate. But in a short time, we have already involved 115 members and a very large number of partners. Among the members there are segments both of companies and of companies that are also accredited laboratories. These segments are growing faster than others (together they account for about 80% of the members).

Clust-ER MECH is organized in 8 sectoral or thematic working groups (Value Chains), in which companies, laboratories and training institutions participate. I will mention just a few of our working groups, to give an example of how structural lightweighting is consistent with the topics we deal with: MAMM-ER (Advanced materials for mechatronics and automotive engineering), DaAMA (Digital and Advanced Manufacturing), MOVES (Efficient and sustainable engines and vehicles). The full list of our working groups is available on our website, but the main value ELCA has brought to MECH is obviously represented by the two European projects, ELCA Internationalization and AMULET, which we have won and in which we have participated together with other members of the network.

"ELCA represents a qualified and highly operational observatory for gathering information and opportunities"

"JSI has participated with partners in several EU proposals within the ELCA network"

Vesna Butinar (JSI). Slovenia

How in your opinion, does ELCA foster innovation in the field of Lightweighting?

Although lightweight is not in the description of the activities of our department, there are several aspects that are in focus of ELCA, targeting especially Building & construction and Energy sector (ceramics, glass and composite materials). In these fields we can support the innovation activities leading to new lightweight products and enabling new green technologies. The role of ELCA is to connect and support the partners with the needed expertise in order to foster innovation.

How has ELCA broadened your network of individuals within the field of innovation and lightweight technologies?

With new connections to relevant partners forming consortia in submitted and future projects. JSI has participated with partners in several EU proposals within the ELCA network, such as: AMULET, 2020: H2020-INNOVATION-01-2018-2020, CARESMatic, 2020: H2020-LC-GV-2020, CENTAUR, 2019: H2020-NMBP-TR-IND-2019, CRESCENDO, 2019: Interreg CENTRAL EUROPE Programme, New connections were established to experts from industry and academia within activities of WG2 - Characterization & Modelling, WG1 - Materials Supply & Development and WG6, Recycling.



**"ELCA is a FRAMEWORK
for innovation"**

How do you feel ELCA contributes to shaping the future of research and innovation?

ELCA is a FRAMEWORK for innovation. The innovation comes from the members, but ELCA gives opportunities to discuss and to work together. ELCA helps to coordinate and communicate between research institutes and companies, which greatly fosters innovation within the area of lightweighting.



In considering the future of ELCA, where do you see this organization growing and to what extent?

ELCA must grow further. In clusters but also in large and medium sized companies. It is always good to expand in scale if we speak about networks. Moreover, I believe that in the future lightweight will always be discussed in connection with a circular economy. These two topics are inseparable today and there are many EU funds available regarding circular business models in general and the circularity of materials specifically. All materials will have to be reused and account for sustainability (for instance the CO₂ balance of carbon fiber reinforced plastics).

How do you see the working groups collaborating in the remainder of 2021?

The first meeting of the working groups served the purpose to exchange ideas about potential collaborative projects for EU calls. Currently, discussions are still ongoing regarding the structure and design of further collaboration among working group members in the future, in addition to the continuous development of joint project ideas.

Working Group 6 – Circular Economy

"We aim to balance science/research and innovative businesses in our clusters"

ELCA - taking the lightweight challenges for reduction of CO₂ - emissions and circularity

In WG 6 we contribute to define sustainability and circularity of ELCA-offered lightweight materials and technologies as a competitive advantage and potential unique selling proposition of the alliance. We aim to balance science/research and innovative businesses in our clusters, and dedicate time to create a dedicated working format, which will support the systematic identification of business cases and collaborations among the companies of the involved clusters.

Our ELCA networking forum dedicates exclusive time to an internal and informal discussions surrounding the working and communication of events for circularity and lightweight small talks with the aim to develop and establish personal face to face contacts in order to provide future inspiration and potential to new founded communities within our network. The leaders of the groups, Laura Mazzochetti and Katharina Schöps have invited the members of the working group for a kick-off at 13.07.2021.

The group has reflected the big challenges for the lightweight-related industries and research to meet the new regulations and requirements to reduce the CO₂-emissions in the mobility sector. ELCA can contribute to master the challenges with the development and introduction of recycling and circular technologies in all industrial value chains. The lack of those solutions is still the main obstacle for the industrial breakthrough of new lightweight materials.



Thank you to our Partners for their contributions to this Newsletter!

Stay Tuned for more Partner Updates on our Social Media Channels.



InnoCarbEnergy

Carbon fibre research in Lusatia

NEWS FROM OUR ELCA PARTNERS



LARGE-SCALE CARBON FIBRE RESEARCH TO REPLACE COAL MINING IN GERMANY

While the potential of carbon fibres as a future technology has already been confirmed, their industrial production has so far been based primarily on petrochemical base materials and energy-intensive processes, with high costs compared to metals. To achieve the paradigm shift to a product-specific precursor and carbon fibre production with modified polyacrylonitrile (PAN) on the one hand and sustainable raw materials on the other hand in combination with renewable energy, the Cluster of Excellence MERGE of the Chemnitz University of Technology, the Fraunhofer Institute for Machine Tools and Forming Technology IWU, the Fraunhofer Institute for Applied Polymer Research IAP and the BTU Cottbus/Senftenberg cooperate within the scope of the feasibility study InnoCarbEnergy. Together with stakeholders from politics and industry, the potential of a fully equipped research and pilot line is being discussed, ranging from the production of precursor materials, stabilization, carbonization, post-treatment of carbon fibres to textile processes and high-performance components on a semi-industrial scale. The targeted region for the research facilities is the Lusatia region (Germany), which is affected by the coal phase-out and the subsequent structural change in the economy. In Lusatia, coal mining and its conversion into electricity has remained a central pillar of the economic structure to this day and provided a reliable source of income for thousands of households for decades.

With the common vision of a climate-friendly transition of the region from the coal economy of the past and present to a self-supporting bio-economy, sustainable technology paths for the production of carbon fibres are being discussed and the necessary infrastructure for the operation of the research and pilot plants is being planned within the consortium. Building on the findings of the InnoCarbEnergy feasibility study, the aim is to establish the research facility as the "Carbon Lab Factory Lausitz". The idea of a research campus for precursors, carbon fibres and textile processes all the

way to the component, which can similarly only be found in the USA and Australia, has the potential to expand the state of science and technology in carbon fibre research and production far beyond the region's borders. The consortium is currently looking for business partners via a survey. Get involved following <https://mytuc.org/cfhy>. For more information regarding the InnoCarbEnergy feasibility study please follow [https:// mytuc.org/pqtt](https://mytuc.org/pqtt).

THE MISSIONS

2021-2022



The COSME-ELCA consortium has scheduled 6 internationalisation missions for the next year.

These missions will help us to validate and to explore the identified opportunities to develop the ELCA-brand "Lightweight-made in Europe". We will organise meetings, pitches, matchmaking sessions and workshops with partners from industry, research and clusters from the targeted countries. We invite clusters, companies as well as research organisations to join the events!

If you are interested to participate and to contribute to some of the events, pls. contact **Nicolo Bertolini** (nicolo.bertolini@mech-clust-er.it), who is coordinating the programme development of the missions.

All missions will comprise 3 parts:

- a) Exploratory meetings with actors in the 3rd countries
- b) Expert meetings
- c) Company and research showcase



Preparatory meetings in all COSME-ELCA partner countries will be open for all ELCA-partners.



NEWS FROM OUR ELCA PARTNERS

BYDGOSZCZ INDUSTRIAL CLUSTER



We are pleased to announce that activities of the Bydgoszcz Industrial Cluster have been noticed and appreciated, which results in two prestigious awards - the title of the Leader of Entrepreneurship Support 2020 and the Award of the Marshal of the Kujavian-Pomeranian Voivodeship. The title of the Leader of Entrepreneurship Support 2020 was awarded to the Cluster by the Chamber of Industry and Commerce of the Kujavian-Pomeranian Voivodeship, emphasizing: involvement in the development of the economy and self-government of the Region, creating the

highest organizational standards, representing and supporting the economic environment of the Region and successive motivating to partnership, cooperation and openness to market needs. The second one was awarded in the field of economy for consistent activities for the development of enterprises of the toolmaking and plastics processing industry, development of enterprises of the toolmaking and plastics processing industry, building cooperative relations on the business-science-administration line, strengthening innovation and competitiveness.

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European Lightweight Clusters Alliance

ELCA partners



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PLATFORM

A Digital Hub, providing you the opportunity to:

- Explore Innovation Needs for your Organization
- Browse for Upcoming Events
- Find Technology Offers and Funding Opportunities

Post Opportunities and Share with your ELCA Network!

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<https://elcanetwork.eu/>