POLYMERIS
Pôle de compétitivité des caoutchoucs, plastiques et composites
Auvergne-Rhône-Alpes

Techtera

HYBRID COMPOSITE TECHNOLOGIES

TEXTILE

Hall 5, booth E98

JEC WORLD

The Leading International Composites Show

Summary

Auvergne-Rhône-Alpes Region, the composites industry excellence area

With more than 700 members, including industrial players, academics and research and development professionals, the Polymeris and Techtera competitiveness clusters form a dynamic and extensive community in the field of composites. The Auvergne-Rhône-Alpes region occupies a central position within these sectors. This industry offers a high level of innovation and industrial capacity, providing support for your projects in the field of composites and covering the entire value chain, from raw material to end product.

Legends map

- Raw materials
- Simulation & modelling
- Process
- Products & semi-products
- End of life & recycling
- Quality control
- Research & development

This initiative is supported by the Auvergne-Rhône-Alpes Region

La Région Auvergne-Rhône-Alpes

Projects showcase

AUTOMOTIVE / AERONAUTIC / ENERGY / BUILDING

NCF HP³ Techtera

- Project coordinator: Chomarat
- Project completed
- 4 < TRL < 7

Develop a new generation of non-crimp fabric based on carbon fiber and associated textile processes for the manufacture of thermosetting composite parts.

CONVERTIR Techtera

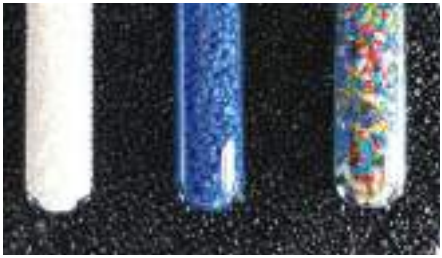
- Project coordinator: Chomarat
- Estimated end: 2025
- 4 < TRL < 7

Developing a carbon weaving machine by converting an existing NCF glass line into a line dedicated to the production of unidirectional carbon reinforcements.

NICE Techtera

- Project coordinator: Airbus
- Project completed
- 4 < TRL < 7

Develop thermoplastic materials operated by automatic draping in accordance with the requirements of REACH.



VIABLE** POLYMERIS

- Project coordinator: VITO
- Funding: Life Program under grant agreement n° LIFE20-ENV-BE-000671
- Estimated end: 2025
- TRL 5

Valorisation of lignin biomass into competitive components gradually replacing BPA in the formulation of epoxy resins.

* Co-funded by the COSME programme of the European Union

** Co-funded by the LIFE Program

AMULET*

- Project coordinator: Polymeris
- Funding : European Union's Horizon 2020 research and innovation programme under grant agreement n° 101005435
- Estimated end: 2024 • TRL 7

Business framework with demonstration projects, training and coaching on the field of 3 type of materials (polymer-based composites, ceramic matrix composites, light metal alloys) for 4 industrial markets (automotive, aerospace & aeronautics, energy, building).

EFEM*

- Project coordinator: Lavoisier Composites
- Funding: Amulet - 1st OC
- Project completed • 7 < TRL < 9

The project Eco-Housing for E-mobility is aiming at reducing the weight of e-car gearbox by 30% while improvement of 30 – 50 % of the NVH (Noise Vibration & Harshness) emission thanks to the use of fiber reinforced polymer composites.

PACK-ALL-BLACK*

- Project coordinator: Canoe
- Funding: Amulet - 1st OC
- Project completed • 7 < TRL < 9

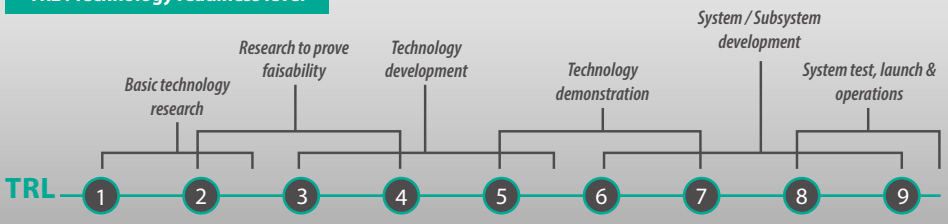
The Pack-All-Black battery pack product is based onto a single housing design for small and medium series (more cost-effective, more flexible, and faster to implement).

NHYCCO

- Project coordinator: Billion Mayor Industrie
- Project completed • 4 < TRL < 7

New hybrid yarns for protective clothing and composites applications with high performances.

TRL : Technology readiness level



Projects showcase

ARCHITECTURE / INFRASTRUCTURE & CIVIL ENGINEERING

RESOL Techtera

- Project coordinator: Polyloop
- Estimated end: 2024 • 5 < TRL < 7

Develop a recycling solution for PVC textile composites to produce recycled PVC that can be used in plastisol coating processes.

PRORETEX II Techtera

- Project coordinator: Sulitec
  Project completed • 4 < TRL < 7

Develop composites with textile reinforcements in order to fix damaged concrete structures.

CALIMERO* Techtera

- Project coordinator : Contactica
- Estimated end: 2025 • 4 < TRL < 7

Calimero is a European Project whose goal is to create a common framework for the Life Cycle Assessment methodologies of certain bio-based industries.

AC2M2 Techtera

- Project coordinator: ATG Composite
- Estimated end: 2023 • 5 < TRL < 6

Develop a production line for composite reinforcements, with hybrid, multifunctional mineral matrix textile reinforcements for construction sector.

* Funded by the European Union
** INTERNATIONAL
*** Co-funded by the COSME programme of the European Union

ENVIRONMENT & RECYCLING

RECREATE*

- Project coordinator: Politecnico di Milano
- Estimated end: 2026

REcycling technologies for Circular REuse and remanufacturing of fiber-reinforced composite mATErials.

REC-N-COMP**/***

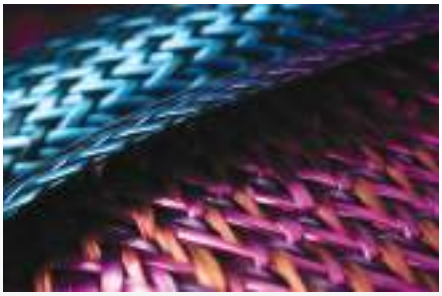
- Project coordinator: Next Technology Tecnotessile
- Co-financed by the COSME programme of the European Union
- Estimated end: 2024

Support the internationalisation of European SMEs whose activities are related to the manufacture of composites from recycled materials, particularly textiles. A joint internationalisation strategy will be developed and tested, targeting three countries: the USA, Japan and Singapore

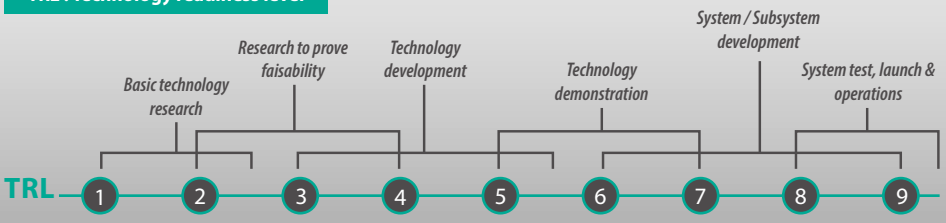
MC4*

- Project coordinator: Profactor
- Estimated end: 2025
- 3 < TRL < 6

MC4 (Multi-level Circular Process Chain for Carbon and Glass Fibre Composites) is a European partnership aiming to establish circular approaches for carbon and glass fibre composites. After a 3 years implementation, MC4 will make the European carbon and glass fibre value chains more circular, independent and competitive.



TRL : Technology readiness level



Projects showcase

EOLO-HUBS **

- Project coordinator: Aitiip
- Funding: European Union's Horizon 2020 research and innovation programme under grant agreement n° 101096425
- Estimated end: 2026 • 4 < TRL < 7

Propose and demonstrate novel solutions to recycle high value materials from the wind turbine blades, developing a set of innovative composite material recycling technologies.

PHYRE*

- Project coordinator: Extracthive SAS
- Estimated end: 2026 • 7 < TRL < 9

PHYre® by Extracthive reclaims carbon fibers from carbon fiber reinforced polymers using a chemical treatment. These recycled fibers, with properties similar to pristine ones, are ideal for applications requiring high strength-to-weight ratios, like sports & leisure, and non-structural vehicle parts.

BIO-UPTAKE **

- Project coordinator: Aitiip
- Funding: European Union's Horizon 2020 research and innovation programme under grant agreement n° 101057049
- Estimated end: 2026 • 3 < TRL < 6

Ensure a sustainable uptake (increase the use by 39%) of bioplastic composites, by driving a double green and digital transformation in the European manufacturing industry.

THERMOFIRE*

- Project coordinator: Avanzare
- Funding: European union under the grant agreement no. 101112370
- Estimated end: 2026 • TRL 5

The Thermofire project is foreseen to design, develop and validate novel, lightweight and low-cost bio-based and recyclable thermoplastic composites with enhanced mechanical properties and fire resistance by the incorporation of natural fiber reinforcements and bio-based halogen-free flame retardants as well as to remove the EU's dependence on fossil-based polymers.

* Funded by the European Union

** European Union's Horizon 2020 research and innovation

BIOSTRUCT*

- Project coordinator: Profactor
- Funded by the European Union
- Estimated end: 2026 • 3 < TRL < 7

BioStruct will develop advanced technical solutions for the precise design and manufacturing of composite parts using bio-materials. From January 2024 and for the next three years, the ten partners will improve the application of bio-composites in structural applications, thereby decreasing the dependency on conventional carbon and glass fiber composites.

ENERGY

EFFIWIND

- Project coordinator: Plastinov
- Project completed • 4 < TRL < 7

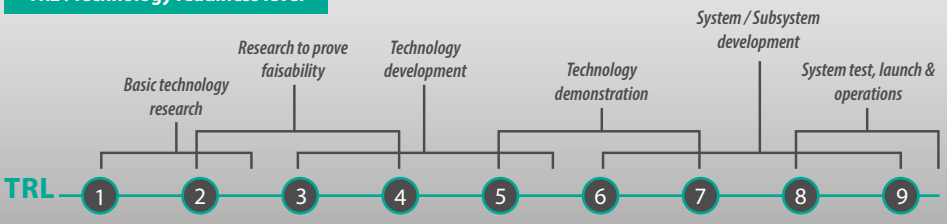
Develop and implement innovative composites for the making of lighter, cost-efficient and recyclable large dimension equipment used in offshore wind power (blades, nacelles).

SMART CABLES

- Project coordinator: Epsilon composites
- Funding: BPI
- Estimated end: 2028 • 5 < TRL < 9

The project aims to build a high-temperature composite cable solution and associated tools, enabling network managers to increase their energy transfer capacity and control it reliably and sustainably.

TRL : Technology readiness level



POLYMERIS
Pôle de compétitivité des caoutchoucs, plastiques et composites
Auvergne-Rhône-Alpes

573 MEMBERS

59 R&D PROJECTS IN COMPOSITES FIELD

894 M€ IN R&D PROJECTS SINCE 2005

Polymeris is the only French cluster dedicated to rubbers, plastics and composites gathering more than 573 members, among them 360 industrial companies and 135 R&D centers and universities.

Polymeris draws on 15 years of expertise and experience in supporting businesses, with in-depth knowledge of the techniques and markets of tomorrow. Polymeris promotes and develops Innovations for rubbers, plastics and composites industries, thanks to collaborative R&D projects with more than 335 funded projects and more than 35 european ones. In addition to this activity, Polymeris promotes innovation in education and opens up the companies toward different industriel sectors and international cooperation.

Its main technological added value domains are:

- advanced materials with high mechanical performance for lightweight, functional and smart properties,
- factory of the future as fast automated composite processes including additive manufacturing,
- smart products with integrated electronics for mobility, health, packaging, goods,
- circular and sustainable solutions thanks to high performance bio-based materials, eco-design and recycling loop.

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Techtera

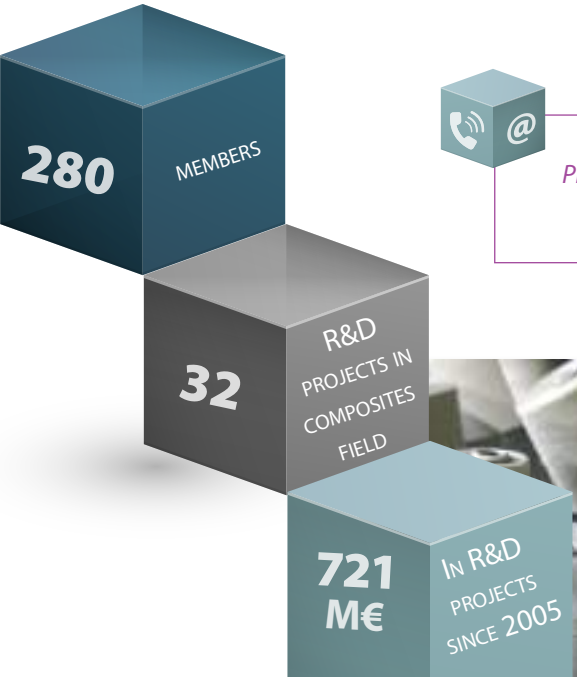
Techtera: source of textile innovation for our future.

Techtera is the French innovation cluster dedicated to textile. It animates a network of more than 280 members with the main objective of boosting competitiveness through collaborative innovation and market access.

It has labeled 294 R&D project that received funding for a budget of 721 million €.

The cluster also supports its members through:

- innovation and collaborative R&D projects, from the idea to the dissemination of results,
- enhancing the drivers of innovation with environmental, technological, and economic catalysts,
- the marketing of their innovation by individual or collectif support on trade shows, and international collective missions.



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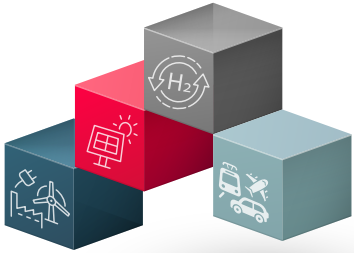

CEA's Liten institute is a CEA technological research institute specializing in energy transition technology. Its research activities focus on a number of key areas: solar power, network management, storage, including batteries and hydrogen, and focus on the development of low impact material technologies.

Application areas

Automotive and road transportation,
renewable energies.

Products

CEA's Liten focuses its innovation technologies on

- developing specific recycling processes for end-of-life components,
- investigating new ways of secondary materials valorization,
- integrating flexible and hybrid electronic components to monitor structural heath in composites materials and energy storage systems.

Innovations

- MC4-UE project: development of epoxy vitrimer resin for valorisation of EOL composites panels.
- OASIS project: network of integrated sensors for in-operando diagnosis of batteries modules.

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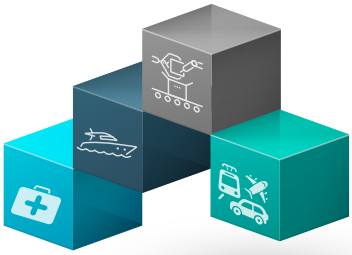

CPI

***CPI** is a pioneer company in atmospheric cold plasma surface treatment. We offer complete turnkey solutions for web plasma, from testing to production/installation of the equipment in your facility. Our solutions offer extensive surface cleaning, molecular grafting or a Tie nano-coating layer.*

Application areas

Aerospace, medical, industry, boating...

Products

Our web plasma can improve adhesion as release.
As an example, we developed a treatment for release film for Prepreg that offer:

- very low extractible release up to 2 meters width,
- re-usable up to 10 times,
- recyclable possible as a standard PET grade,
- release force can be tuned to fit your process,
- mat or textured release surfaces possible.

Innovations

2Meters plasma reactor, we developed, is the single AP-PECVD available for industrial production in the world able to run nano-coating.
When corona is not enough & coating does not appropriate, we may have your solution.

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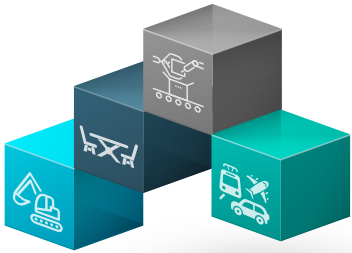

DMM
OUR MOLD EXPERTISE
YOUR NEEDS
CLM

Since 1990, DMM/CLM (ISO 9001) located in Oyonnax developed and established themselves as primary specialists in the design and production of molds (up to 50T/6 meters) for the transformation of plastics and composites, as well in the maintenance and repairs, in France and international.

Application areas

Structurals parts for lightweighting in transports as Automotive, trucks, railways, buses, aeronautics.
Equipments for industry, leisure, sports, packaging, containers, transport and energy distribution.

Products

Our molds are constructed for the transformation technology for which they are intended and designed in line with our production methods. We bring all of our added value to find solution to facilitate use and interchangeability in the lifetime based on criteria talked in the requirements. We can manage try outs & pre production of parts : injection moulding mono or 2K (50-2200T), SMC (1200-1800T).

Innovations

Based on our experience, we are involved in projects for vehicule lightweighting incorporating the following technologies: SMC for thermosets, and organo sheet overmoulded for thermoplastics (hatch back, structural parts…).

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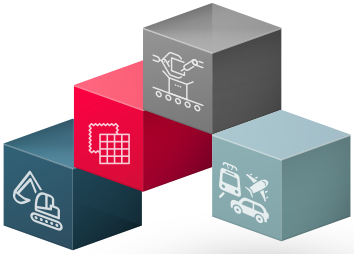

marduel
TECHNICAL YARNS

For over 60 years, Marduel has specialized in processing technical yarns to strengthen industrial products such as composite, hoses or many other high value-added applications. By twisting, cabling, winding, coating, Marduel develops and manufactures new yarns that fulfill its customer's needs.

Application areas

Composite, aeronautics, automotive, PVC & rubber reinforcement, paper & leather industries, mechanical industry, packaging, textile, construction…

Products

Technical Yarns manufacturer by twisting and winding

- From 50 to 10 000 tex
- High tenacity yarns, Aramids, Carbon, Glass, basalt…
- Hybrid yarns

- Tailor-made products
- Extensive quality control check
- Traceability

Innovations

Marduel offers advice and technical support dedicated to innovation. This expertise allows the company to be approached for research by famous names of the aeronautics and automotive industries. A dedicated twisting carbon, glass and basalt workshop enables to meet needs of prototyping and large scale production.

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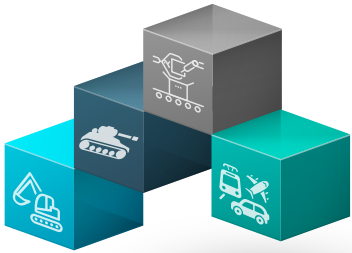


Groupe
Pernoud
Engineering & Tooling Systems

Created in 1971, the Pernoud Group is specialized in injection molds, die casting and composites tools. Tier 1 of mold making (design, manufacture, maintenance, modification and repair). Certified ISO 9001 V2015 and accredited Research Center.

Application areas

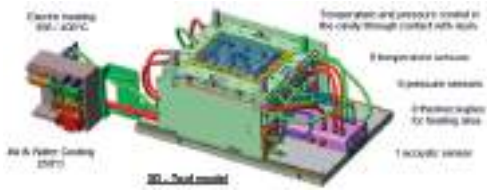
Automotive industry (FMS parts), building, defence and aeronautics markets.

Products

- Multitube overmolding technology to avoid welding process,
- LSR overmolding and vulcanization within the mold,
- C-RTM TP process for composite: impregnation of a dry 3D preform by a thermoplastic resin,
- E-Tooling, a smart, connected & full electric mold,
- E-Assist, a remote solution for maintenance diagnosis,
- k-E-nematic, autonomous mold and electric actuators.

Innovations

Our R&D approach focuses on different themes such as the productivity of manufacturing processes, the vehicles lightweighting, the circular economy, the ecological transition and the industry of the future.



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SOPARA

Sopara is specialized in the design and manufacture of infrared industrial equipment (infrared heaters, ovens and tunnels) and can help you to increase your productivity, save energy and become carbon neutral. With its own in-house R&D department and testing laboratory, Sopara develops and manufactures custom-made solutions for the industry of tomorrow.

Application areas

Composite materials, textile, automotive, aerospace, paint, agri-food industries.

Products

- Short-wave infrared heaters (for heating of materials or industrial premises),
- high performance medium-wave infrared heaters,
- curing and drying infrared ovens,
- thermoforming infrared ovens,
- non-woven textile heating infrared ovens,
- energy saving and high performance products,
- power control cabinet.

Innovations

- Thermoplastic melting ovens to prepreg carbon fibers up to 450 ° C.
- New infrared heaters for heating with perfect homogeneity thermoplastic composite plates for the aerospace industry.

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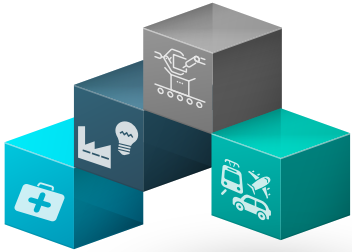

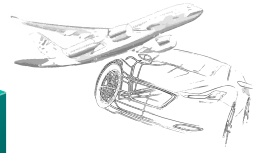

TF ÉTUDES

***TF ÉTUDES** is based in Oyonnax Plastic Vallée since 1990. Our team is specialized in product design, assembly tools, specific tools and checking fixtures. After 30 years, we are sub-supplier of first step automotive industry supplier and aero industry. We are implemented in different kind of market with specialization in products design. Design, manufacturing, control, tuning and assembly are part of our knowledge and ready to follow you during your development. Our machines are used all over Europe on our customer plants.*

Application areas

Automotive, aeronautics, nuclear, energy, defense, medical.

Products

Specialized in the design and production of:

- inspection jigs,
- checking fixtures,
- leakage inspection tools,
- production tools,
- assembly tools: hot plate welding, vibrations welding, infra-red welding,
- special machines.

Innovations

- Development and manufacture of custom infrared sources.
- Integration of robot, integration of automatic screwing and vision control, sealing control tools.

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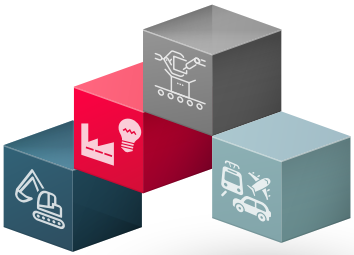

#TISSTECH
Technical Fabrics

Located in Rhône Alpes Auvergne and with nearly 50 years of experience Tisstech is involved in the design, development and manufacture of textiles for technical purposes. We are creator of industrial textile products. Our strenght? Our reactivity. Expertise, know-how and innovation made in France guarantee our quality.

Application areas

An international presence and a great industrial reactivity in order to respond with precision to any specific request. We develop custom-made solutions for different industrial sectors : aeronoautics, composite industry, electrical, rail, automotive, iron&steel, nuclear, maritim...

Products

- Customized and adapted support thanks to an efficient integrated production tool: R&D, warping, weaving, impregnating/coating composites, cutting, clothing industry/processing.
- Our product catalog is representative of all the developments carried out in collaboration with our customers : tapes for electical insulation, prepegs fabrics, reinforcement grid…

Innovations

We are able to develop any type of weaving. Come to our stand in order to discover our innovations!

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Discover other comp

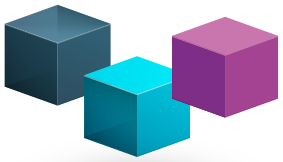


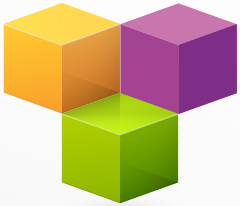
- ACXYS TECHNOLOGIES, *Hall 6 - Booth T106*
- ALTHEORA, *Hall 6 - Booth M89*
- BORFLEX, *Hall 6 - Booth F89*
- BÜFA COMPOSITES BENELUX BV, *Hall 5 - Booth L40*
- CALYXIA, *Hall 6 - Booth N4-8*
- CANOE, *Hall 6 - Booth F89*
- CARBON WATERS, *Hall 6 - Booth F89*
- CEA LITEN, *Hall 5 - Booth E98*
- CERO, *Hall 6 - Booth K108*
- CHOMARAT, *Hall 5 - Booth H58*
- CLAYENS, *Hall 6 - Booth N06*
- CPI COATING PLASMA INNOVATION, *Hall 5 - Booth E98*
- CULTURE IN, *Hall 5 - Booth E98*
- CTMI, *Hall 5 - Booth G32*
- DEMGY GROUP, *Hall 5 - Booth B64*

anies on JEC world

- DIATEX, *Hall 5 - Booth H31*
- ELKEM SILICONES, *Hall 5 - Booth F126*
- ENSAIT (École nationale supérieure des arts et industries textiles), *Hall 6 - Booth L115*
- EXTRACTHIVE, *Hall 6 - Booth N4-13*
- FORVIA, *Hall 6 - Booth Q108*
- HEXCEL COMPOSITES, *Hall 5 - Booth H57*
- HUTCHINSON, *Hall 6 - Booth F05*
- IPC (centre Technique Industriel de la Plasturgie), *Hall 5 - Booth F97*
- L&L PRODUCTS, *Hall 5 - Booth M14*
- LYTID, *Hall 6 - Booth G120*
- MANUTEX, *Hall 5 - Booth E133*
- MCVE, *Hall 6 - Booth M02*
- POLYVIA, *Hall 5 - Booth F97*
- RAIGI SAS, *Hall 6 - Booth Q72*
- ROCTOOL, *Hall 6 - Booth U90*
- TERAKALIS, *Hall 6 - Booth N115*
- TEXINOV TECH, *Hall 5 - Booth A73*

Notes & contacts





POLYMERIS

Pôle de compétitivité des
caoutchoucs, plastiques
et composites
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Techtera

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This initiative is supported by the Auvergne-Rhône-Alpes Region

La Région
Auvergne-Rhône-Alpes