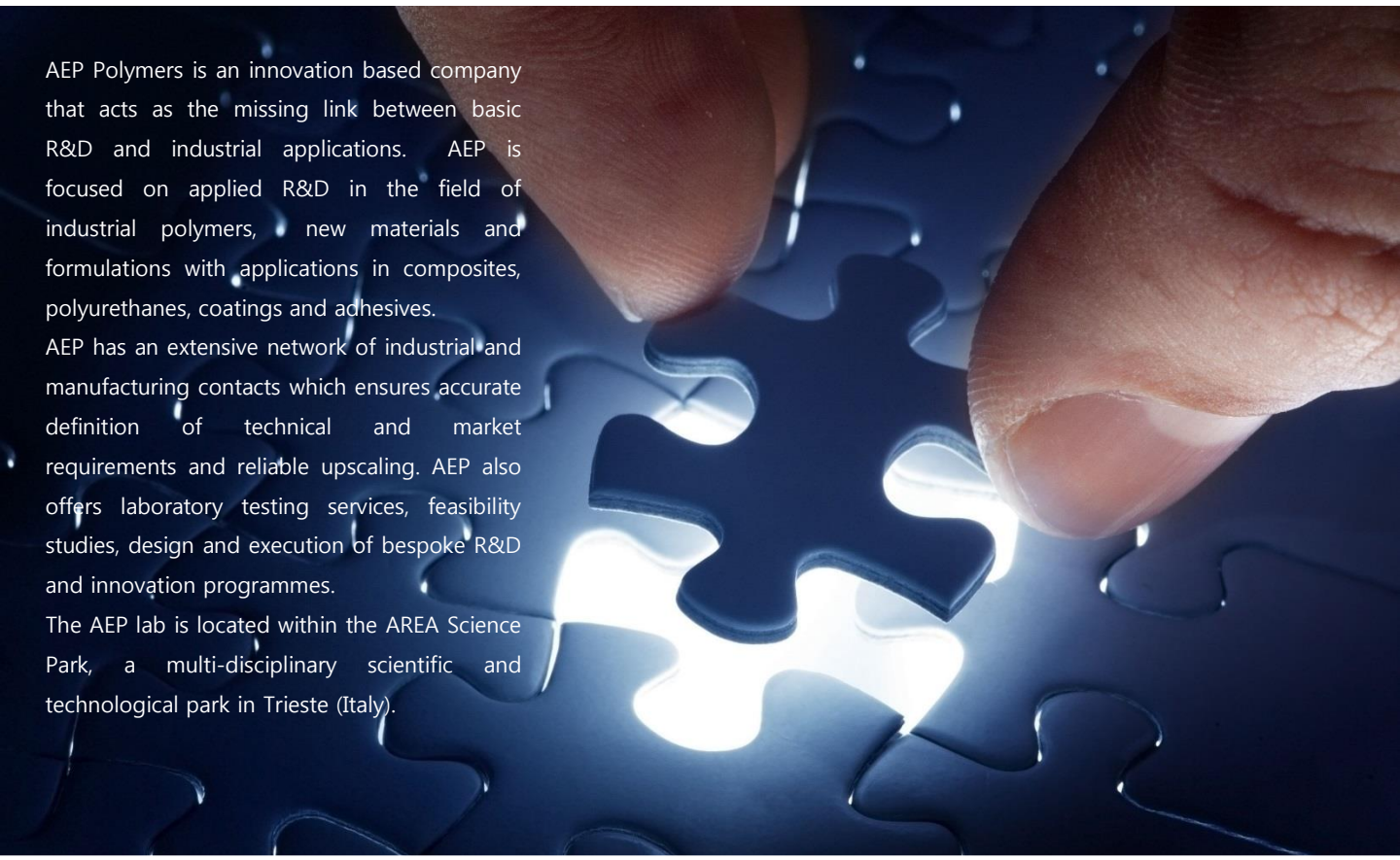
YOUR PARTNER IN INNOVATION

Rely on our expertise to realise your vision



AEP Polymers is an innovation based company that acts as the missing link between basic R&D and industrial applications. AEP is focused on applied R&D in the field of industrial polymers, new materials and formulations with applications in composites, polyurethanes, coatings and adhesives.

AEP has an extensive network of industrial and manufacturing contacts which ensures accurate definition of technical and market requirements and reliable upscaling. AEP also offers laboratory testing services, feasibility studies, design and execution of bespoke R&D and innovation programmes.

The AEP lab is located within the AREA Science Park, a multi-disciplinary scientific and technological park in Trieste (Italy).

HOW WE WORK

AEP is the ideal choice for contracted research activities and long term industrial cooperation.

AEP can assist you in the design of new polymers and formulations and the evaluation of their technical and market potential.

AEP's comprehensive and flexible approach includes strategic evaluation, technical feasibility, polymer chemistry, product testing, design of formulations, upscaling of products, prototyping and benchmarking.

Consultants for Contracted Research

Your Partner in R&D Projects

Industrial Cooperation Agreements

Agrofood byproducts → **High value performance polymers** → **Strategies for industrial exploitation**

www.aeppolymers.com

info@aeppolymers.com

PROJECTS

NEW BIO AROMATIC POLYMERS

Biobased resins are an emerging alternative for performance materials.
AEP has been working with RTOs and industrial partners to create brand new substances and materials starting from renewable resources and combining different chemical structures, from fatty acids to bio aromatics.
Cashew Nut Shell Liquid (CNSL) is a naturally occurring source of phenols. AEP developed a portfolio of industrial polymers from CNSL to deliver performing materials for demanding industrial applications in composites, polyurethanes and adhesives.
The new materials have been successfully benchmarked against commercial oil-based alternatives and are currently produced by an industrial partner.

SmartLi
Biorefinery concepts and processes

SMART TECHNOLOGIES FOR THE CONVERSION OF INDUSTRIAL LIGNINS

AEP Polymers is a Partner of SmartLi, a three-year programme which aims to develop valorisation routes for lignin, for example, in plywood resins and composites.
This project has received funding from the Bio-Based Industries Joint Undertaking under the European Union's Horizon 2020 research and innovation programme under grant agreement No 668467.

http://clicinnovation.fi/activity/smartli/#Partners

Bio-based Industries Consortium
BIO-BASED INDUSTRIES Public-Private Partnership
Horizon 2020 European Union Funding for Research & Innovation

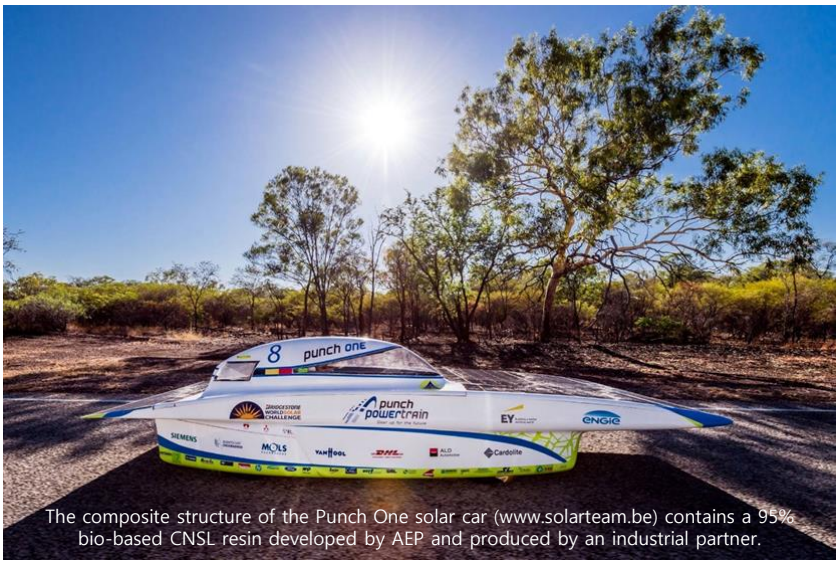
EXPERTISE

- **Chemistry on biomass derivatives**: extraction, characterization, functionalization, support to LCA.
- **Design, optimization and upscaling of synthetic processes** for polymers.
- **Quick scan and benchmarking of new materials in industrial applications** (composites, coatings, polyurethanes and adhesives).
- **Polymer science: design of biobased formulations** with attention to process parameters, performances, cost and sustainability.
- **Application development**: definition of technical requirements and new application sectors.
- **Lab scale prototyping** to validate polymers and formulations (TRL=4/5).
- **Larger scale prototyping** in collaboration with qualified industrial partners (TRL= 6/7).

LABORATORY

The AEP new, modern lab is equipped to perform the following procedures:

- Chemical synthesis, optimization and upscaling.
- Complete chemical characterization and QC of new materials.
- Measurement of process-related parameters for polymeric formulations.
- Performance tests on polymers and formulations:
  - Complete mechanical characterization
  - Determination of thermal properties
  - Small scale fire reaction
  - Chemical resistance
  - Ageing



The composite structure of the Punch One solar car (www.solarteam.be) contains a 95% bio-based CNSL resin developed by AEP and produced by an industrial partner.

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