Polyurethane pultrusion partnering:
Industrializing the technology and enhancing process efficiency

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Covestro is closely collaborating with partners from industry and academia to increase the output, process stability, process automation and quality control side of polyurethane (PU) pultrusion technology. The overall goal is to make pultrusion a reliable and cost-efficient technology for the production of composite profiles.
Pultrusion explained

Pultrusion is one of the few processes for the continuous production of continuous fiber-reinforced composites. It yields profiles with a generally constant cross-section characterized by very high strength and stiffness in the fiber direction, low thermal expansion, and good thermal insulating behavior combined with low weight. Pultrusion technology has huge potential to partly replace other materials such as aluminum, PVC or wood. But to exploit this potential, pultrusion technology has to be industrialized. With its global presence and its internal and external pultrusion network, Covestro is just the right company to drive this development forward.

Partnerships for progress

To industrialize the pultrusion process, Covestro is partnering with KraussMaffei, one of the world’s leading suppliers of machinery and systems for producing and processing plastics and rubber, with universities or institutes. These include the Institute of Plastics Processing (IKV) in Industry and the Skilled Crafts at RWTH Aachen University, Europe’s leading research and training institute in the field of plastics technology, and the Fraunhofer Research Institute for Casting, Composite and Processing Technology (IGCV) in Augsburg. Other partnerships are being made in the applications field (e.g. a window manufacturer). The long-term goal is to advance pultrusion technology to make it suitable for a broad range of applications, increase overall process efficiency, and thus grow the pultrusion market.
Making the world a brighter (and better) place

Once the technology has been industrialized, pultruded composite profiles will be capable of replacing existing materials in a variety of applications. In many cases, pultruded profiles offer enhanced properties, such as better insulation (e.g. for windows) or lighter weight (e.g. for cars). These two examples illustrate how pultrusion technology can help save resources – in both cases, energy.

Collaborating along the value chain is proving highly effective in speeding up development. Covestro is acting as a network integrator and incubator, bringing together internal and external experts to drive the industrialization of pultrusion technology forward on a global basis.
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