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Development of Continuous Compression Molding (CCM) System for high-strength thermoplastic intermediate materials

Problem / Motivation

- Continuous Compression Molding (CCM) has limited predictability of product quality, as process variables such as temperature and pressure are difficult to control precisely
- Complex material preparation extends the entire production cycle
- The maximum production speed of 100 m/h limits the efficiency of the process compared to alternative technologies
- A restricted profile shape reduces design flexibility and makes it difficult to achieve complex geometries

Solution

- Development of an AI system for process feedback, e.g. temperature and speed control
- Systems for cutting, joining and aligning of UD prepregs at defined angles (45° and 90°)
- Optimised heating and cooling technology for presses and new processes for manufacturing moulded parts from high-strength thermoplastic composites (Super Engineering Plastics)
- Development of modular solutions for flexible mould design (e.g. I, T, C profiles) and an application process for suitable release agents with high ecological compatibility

Project Partner

Ilsung Machinery Co. Ltd.

Toray Advanced Materials Korea Inc.

IC&IT Co. Ltd.

Korea Textile Machinery Convergence Research Institute (KOTMI)

Korea Carbon Industry Promotion Agency

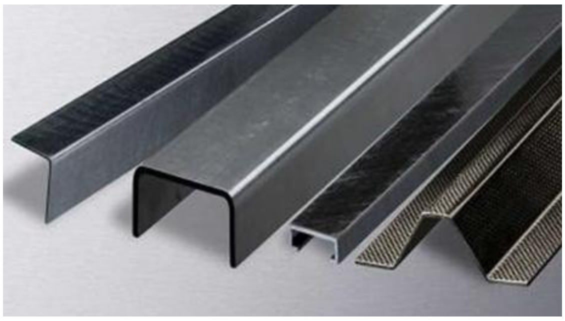
Korea Textile Development Institute (KTDI)

HIZE COMPOSITE INDUSTRIES

Korean Air

Project Launch

07/2024



Complex molded thermoplastic composite component

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