



ESI's Composite Simulation Software Presented at JEC World 2017

Encompassing composite manufacturing processes and performance evaluation

Paris, France – February 8, 2017 – [ESI Group](#), leading innovator in [Virtual Prototyping](#) software and services for manufacturing industries, will be taking part in [JEC World 2017](#), the world's largest trade show for the composite industry. From March 14 to 16 in Paris, France, ESI will demonstrate its innovative simulation software addressing multiple industries – from automotive to aerospace, marine and energy – and aimed at reducing or replacing costly physical try-outs with the help of virtual prototypes. With [ESI PAM-COMPOSITES](#), composite manufacturers can master their manufacturing processes and get their products right the first time. Then, with [ESI Virtual Performance Solution \(VPS\)](#), they can evaluate early in their development process the performance of those parts “as built” and assure they meet the stringent requirements set by customers or end-users.

In the automotive and aerospace industries, where harmful gas emissions and fuel consumption are heavily regulated, weight reduction goals often involve multi-material strategies that integrate light materials. “Lightweighting” is the reason why industrial manufacturers and their suppliers are investing so much time and effort to incorporate composite materials in their new product design, while not sacrificing strength and durability. Unfortunately high manufacturing costs and hard-to-predict material behavior are challenges when seeking to use composites for structural parts. Here, in the era of digital transformation, Virtual Prototyping provides an opportunity to address the difficulty.

This winter at [JEC World 2017](#), March 14-16 in Paris, France, ESI will present the new version of [ESI PAM-COMPOSITES](#), the leading solution for simulating the manufacturing of continuous fiber composites. The software helps engineers identify and address defects early in their product development cycle; at a time when it is easier to fine-tune the production process. Using PAM-COMPOSITES, process engineers can analyze and optimize individual manufacturing operations, and then link these operations by transporting material detail – such as fiber orientation, curing degree, and temperature - from one operation to the next. Progressively building a virtual prototype of the “as manufactured” part they can correct, optimize, or validate processes – including draping, thermoforming, Resin Transfer Molding (RTM), infusion or curing – to minimize manufacturing defects, ensure reproducibility, improve the overall quality of produced parts, and decrease development costs.

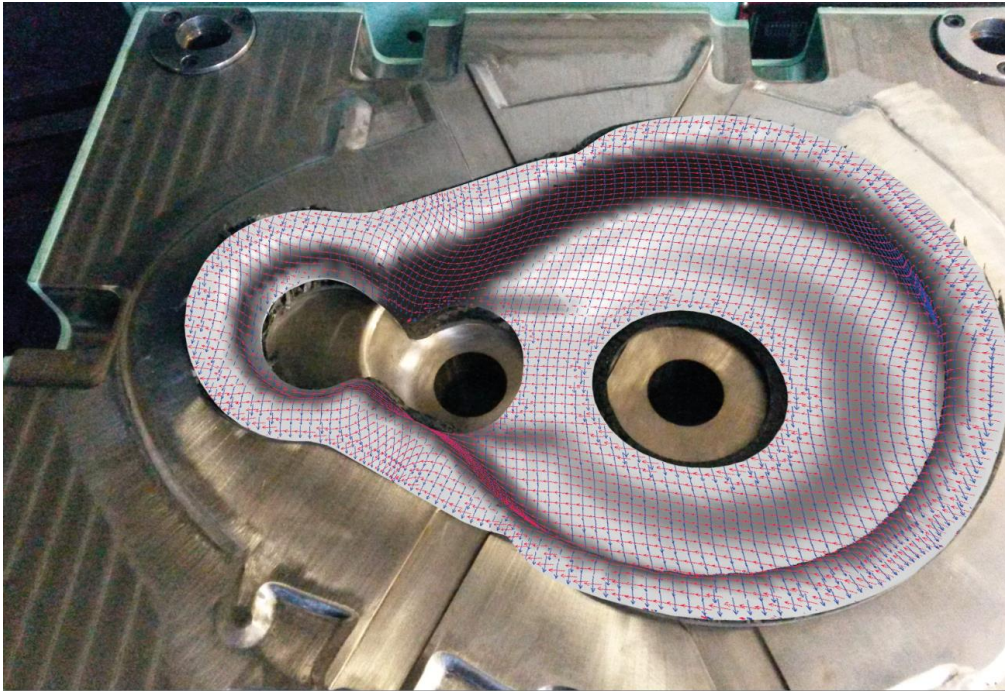


Image: Thermoforming of thermoplastic electric transmission housing with ESI PAM-COMPOSITES
Courtesy of ARRK | Shapers

Using a high fidelity virtual prototype engineers can virtually assess product performance with great precision. Here, ESI's flagship software [Virtual Performance Solution](#) (VPS) empowers engineers to test their virtual prototype across all domains of performance, enabling them to run virtual crash tests, and predict strength, durability, or vibration behavior, while benefitting from use of a single core-model. VPS is a powerful solution, helping designers to ensure the performance of multi-material parts or products; preventing costly recalls without resorting to conservative design margins.

At JEC World (Hall 6 - D53), ESI will offer live demonstrations and presentations on the following topics:

- [Composite Thermoforming Simulation](#)
- [Virtual Manufacturing of a Fuselage Panel](#)
- [Composite Part Case Study: from Manufacturing to Performance](#)
- [Design, Assembly and Performances of Multi-material Composite Parts](#)

Partners and customers will also introduce collaborative projects that leverage ESI's simulation software:

- **Aimen Technology Center:** Methodology for [Thermoplastic and Metal Joining](#) as part of the COMMUNION H2020 project
- **ARRK Shapers:** Project of [Thermoplastic Composite Gearbox for an Electrical vehicle](#)
- **Coriolis:** [How to Optimize the Forming & Injection of Preform made by AFP](#)
- **École Centrale de Nantes (ECN):** PhD project; [Dual-scale Flow in RTM Injection](#)
- **IRT M2P:** Highlights of the [FASTFORM Project for the Industrialization of Preforming Process](#)
- **Rescoll:** [Composite Material Characterization](#)



- **TU Desden:** [Development Processes for Composite Components](#)
- **USCAR:** [New Design of a Composite Bumper System to Ensure Performances](#)

Dr. Pilar Rey Rodríguez, R&D Project Director at Aimen Technology Center and **Dr. Patrick de Luca**, Manager of ESI's Center of Excellence for Composite Materials, will also present a paper entitled "*Optimization of multi-material parts performances thanks to new metal/thermoplastic composite joining technology*" at the JEC Conference on Wednesday, March 15 from 2:00 PM to 4.45 PM in the Workshop Area, in the session "[Current Trends in the Automotive Industry](#)".

Find out more about ESI's attendance at JEC World 2017, March 14-16: <http://www.esi-group.com/company/events/2017/jec-world-2017>

For more information about ESI PAM-COMPOSITES please visit www.esi-group.com/Composites

For more information about ESI Virtual Performance Solution please visit www.esi-group.com/Lightweight

To follow ESI Composite Simulation news: <https://www.linkedin.com/company/esi-composite-simulation>

For more ESI news, visit: www.esi-group.com/press

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About ESI Group

[ESI Group](#) is a leading innovator in Virtual Prototyping software and services. Specialist in material physics, [ESI](#) has developed a unique proficiency in helping industrial manufacturers replace physical prototypes by virtually replicating the fabrication, assembly and testing of products in different environments. Today, coupled with Virtual Reality, animated by systems models, and benefiting from data analytics, [Virtual Prototyping](#) becomes immersive and interactive: ESI's clients can bring their products to life, ensuring reliable performance, serviceability and maintainability. ESI solutions help world-leading OEM's and innovative companies make sure that their products will pass certification tests - before any physical prototype is built - and that new products are competitive in their market space. Virtual Prototyping addresses the emerging need for products to be smart and autonomous and supports industrial manufacturers in their digital transformation.

Today, ESI's customer base spans nearly every industry sector. The company employs about 1100 high-level specialists worldwide to address the needs of customers in more than 40 countries. For more information, please visit www.esi-group.com/

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