

LEADING THE WAY IN COMPOSITES WITH ADVANCED MATERIAL MODELING TECHNOLOGY

e-Xstream engineering, The material modeling company

The global, long-term, material & simulation eXperts team

e-Xstream engineering, an MSC Software Company is a software and engineering services company focused on state-of-the-art multi-scale modeling of complex multi-phase composite materials and structures (PMC, RMC, MMC, etc.).

e-Xstream provides its customers with a complete and optimal modeling solution that suits their specific needs and integrates their existing design processes; from the compounding of the raw material (e.g. engineering plastics, rubber, CFRP, hard metals, nanocomposites, sandwich panels, etc.) to the processing (e.g. injection molding, additive manufacturing) and application in the final product.

Digimat Composites Solution

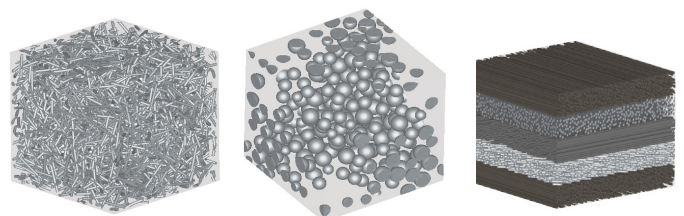
More than 13 years of proven success in material modeling...Tools, solutions and eXpertise

e-Xstream develops Digimat, the unique nonlinear multi-scale material and structure modeling platform that addresses composite material suppliers' and end users' needs to design and manufacture innovative high-performances products while minimizing their weight, cost and time-to-market.

Our enabling technology provides design tools that give the user confidence in their composites products thanks to an accurate description of the local composite behavior. Digimat tools integrate smoothly within the current FEA process, bridging the gap between manufacturing process and structural analysis.

Digimat has been widely acclaimed by key Material Suppliers, Tier1s and OEMs, who can bring daily innovation in their composite products thanks to an optimized design. It not only organizes the market but acts as a link between the players of the whole value chain.

- Multi-Materials: chopped fibers (short/long), continuous fibers, fillers
- Multi-Performances: stiffness, strength, fatigue, progressive failure, ...
- Multi-Physics: (thermo)-mechanical, thermal, electrical, creep, ...
- Multi-Manufacturing: injection, draping, compression, additive manufacturing, ...
- Multi-industries: automotive, aerospace, consumer electronics, medical devices, industrial goods, ...
- Multi-technology: linear/nonlinear, mean field/FEA, micro/hybrid



Digimat

The nonlinear multi-scale material & structure modeling platform

Digimat material modeling platform means developing innovative, optimized and cost-effective products. As a unique nonlinear multi-scale material and structure modeling platform, Digimat offers:

Digimat MF: Mean-Field homogenization software used to predict the nonlinear behavior of multi-phase materials.

Digimat-FE: Finite Element based homogenization software used to model the nonlinear behavior of Representative Volume Elements (RVE) of material microstructures.

Digimat-MX: Material eXchange platform used to prepare, store, retrieve and securely exchange Digimat material models between material suppliers and end-users.

Digimat-CAE: Digimat linear and nonlinear interfaces to major processing and structural FEA software to enable multi-scale analyses of composite structures.

Digimat-MAP: Shell & 3D mapping software used to transfer fiber orientation, residual stresses and temperatures between dissimilar processing and structural meshes.

Digimat-RP: Accurate and efficient solution for the design of fiber reinforced plastic parts.

Digimat-HC: Easy and efficient solution for the design of honeycomb sandwich panels.

Digimat-VA: Integrated solution for the computation of Virtual Allowables.

Digimat-AM: An efficient process simulation solution to optimize the additive manufacturing of polymer parts.

Why Digimat?

Integrate composite materials modeling from process to structural simulation and get your optimal reinforced plastics or laminated part faster, cheaper and better. Digimat, the material modeling platform from e-Xstream engineering provides state of the art technology to predict the properties of advanced materials, saving design and testing time and resources for manufacturers.

Digimat unique and holistic approach to model advanced materials and structures, offers material suppliers and end-users the capability to:

- Investigate and predict the behavior of a large mix of composite materials
- Improve prediction of CAE analyses by accounting for the influence of the manufacturing process in structural FEA
- Minimize the weight, cost and time-to-market optimal high-performances composites parts
- Design and manufacture innovative high-performance composite parts
- Reduce material testing and prototyping by characterizing your material earlier and better.

For more information about Digimat software, please contact: info@e-xstream.com

