SEAT FOR A MOTOR VEHICLE, MANUFACTURING METHOD OF A SEAT AND METHOD FOR UPDATING A SEAT

Car comp. Bodywork | ERGONOMICS

3D Knitting Pad Adjacent Node Attachment Point Cell Grid Structure
Padding Cushion Ventilation Seat Cushion Mat Depression Fabric Layer
Lattice Structure Ventilation Seat Cushion Resedo Cushion Seat

Innovations/advantages

3D printed lattice cushions: fully recyclable, sustainable, and offering tunable mechanical performance through customized cell geometry and thickness gradients.

Modular and removable design: enables fast replacement, personalization, and maintenance without adhesives or chemical treatments.

Heated 3D knitted cover: integrated conductive yarns eliminate heating pads, reducing energy use and component count while improving comfort.

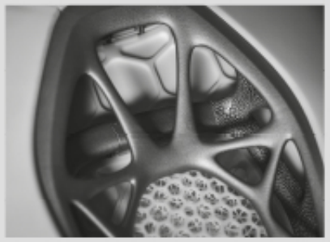
Recycled and sustainable materials: thermoplastics, elastomers, polyester, and metal powders reduce the overall environmental footprint.

Topology optimized 3D printed frame: lightweight yet robust, contributing to a low overall seat mass and improving serviceability with replaceable parts.

Multizone customization and versatile installation: different lattice typologies provide targeted support for seat, backrest, and headrest; integrated belt anchoring system ensures compatibility with various vehicles.

Application field

OEMs;
Automotive interiors,
Manufacturing



Product insight

This patented concept enables a new generation of sustainable, lightweight, and highly customizable vehicle seating. Each cushion is additively manufactured using advanced lattice structures, ensuring full recyclability, tailored mechanical response, and significant weight reduction. The modular design allows cushions to be replaced or reconfigured with ease, adapting the seat to specific ergonomic needs or maintenance requirements. A 3D knitted cover with integrated conductive threads provides direct surface heating, reducing energy consumption versus traditional heating pads. Combined with a topologyoptimized frame and the extensive use of recycled materials across shell, support structure, and textile components, this solution delivers an ecoefficient, usercentric seat concept ready for nextgeneration mobility.

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PATENT INFORMATION

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NATIONAL PATENT APPLICATIONS

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