



▶ TOYOTA, BASF CORP, AND US FARATHANE

**2023 WINNER
ENABLING TECHNOLOGY**

World's First Adoption of Resin Frame for IsoDynamic Seat

Toyota converted more than 17 multi-piece steel parts into just one molded part, thus using far less raw material and decreasing waste. The process also generated an estimated 20% cost reduction and a 30% weight reduction. In addition, this is the world's first adoption of lateral, vertical, and horizontal dynamic motions with adjustable dampers for the driver and passenger seats in off-road vehicles.



▶ NIO

2023 RUNNER-UP ENABLING TECHNOLOGY

HPDC Material and Processing Methods for Efficient Structural Design

With the goal of minimizing environmental impact, NIO used a new alloy material that doesn't require heat treatment, and used a more accurate, more efficient laser cleaning process. These changes reduced part mass by 31%, reduced part count by 98% (turning 54 stamped parts to one), and slashed manufacturing time by 60%.