EnginSoft is a premier consulting firm in the field of Simulation Based Engineering Science (SBES) with a global presence. It was founded in 1984, but its founder and initial employees had been working in SBES since the mid '70s. Throughout its long history it has been at the forefront of technological innovation and remains a catalyst for change in the way SBES and CAE technologies in general are applied to solve even the most complex industrial problems with a high degree of reliability.

Today, EnginSoft is comprised of groups of highly qualified engineers, with expertise in a variety of engineering simulation technologies including FEM Analysis and CFD, working in synergic companies across the globe. We are present in Italy, France, Germany, the UK, Turkey and the U.S.A. and have a close partnership with synergetic companies located in Greece, Spain, Israel, Portugal, Brazil, Japan and the U.S.A.

EnginSoft works across a broad range of industries that include the automotive, aerospace, defense, energy, civil engineering, consumer goods and biomechanics industries to help them get the most out of existing engineering simulation technologies.

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DATA SHEET

oorja

Simplifying Complex Engineering:
Design to Deployment

ENGINSOFT

The strength of oorja platform lies in the adoption of an innovative hybrid approach, and is driving a paradigm shift in Battery pack design and optimization.
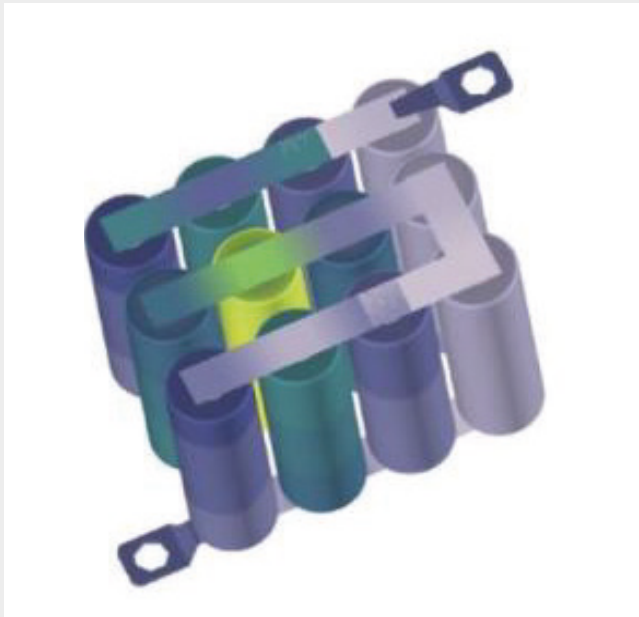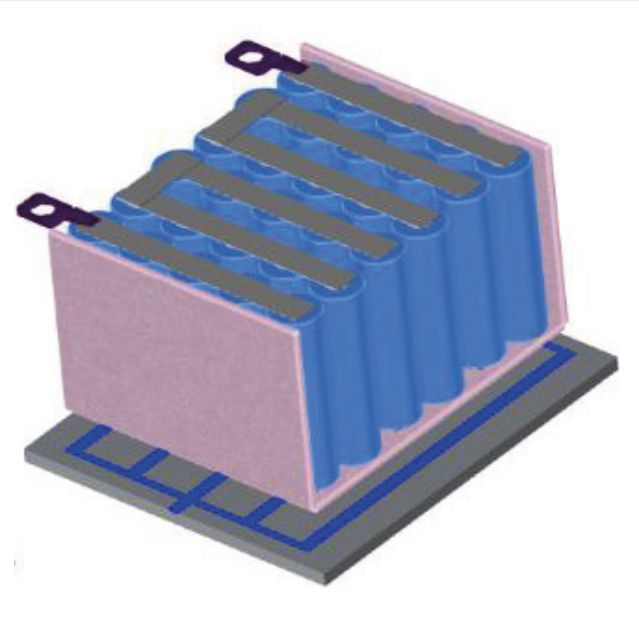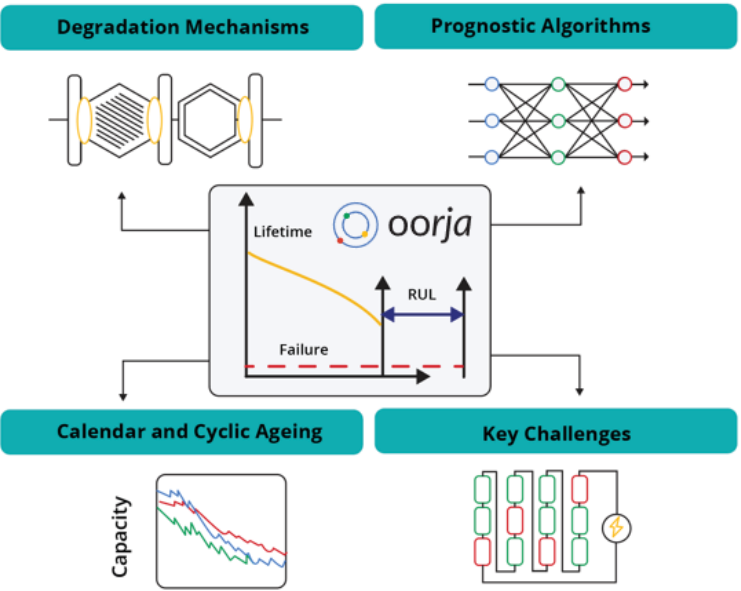
oorja uses an approach based on simple and fast physical models, which will form the basis for the machine learning algorithm, thus reducing the number of data needed for the initial dataset.

oorja simulates, predicts and optimizes the behavior of batteries, analyzing different performances, such as, for example, the quantity of current produced, the "capacity/power fade", overheating during use, fast charging protocols and related aspects to the guarantee.

oorja also solves the problem of battery fires and degradation in EVs, thereby making EVs more efficient and speeding up EV adoption.

The SaaS based subscription model makes it Capex light and convenient, eliminating the need to invest in expensive infrastructure and experts.

oorja is a product

oorja

Challenges in Cell and Battery Pack Design

Cell Design and Performance
✔ Energy Cell/ Power Cell
✔ Cell Design Parameter Optimization

Cell Qualification
✔ Selecting the right cell supplier

Battery Pack
✔ Design and Performance optimization, Cooling Strategy

Battery Pack Safety
✔ Certification Tests

Warranty Estimation
✔ Operating/ Ambient conditions
✔ Drive Cycles
✔ Fast Charging
✔ Power Fade

BMS
✔ Sensors/ Thermocouple locations
✔ Correction Factors to account for signal delays
✔ Designing Control Algorithm: Temperature, C-rates, Voltage and SOC cut-offs

Fast Charging Algorithms
✔ Fast Charging Algorithms:
✔ Safety
✔ Thermal Stability
✔ Degradation