altınay
Teknoloji Grubu

Elektromobilite ve Enerji Teknolojileri

January 2019

Group History

1990

- Developed an industrial robot at SMIDO program.
- Established an incorporated company. And started automation projects.

Robotic and Process Engineering

1996

- Realized many welding and handling projects in general industry.
- Started to produce turn-key automation projects.

2000

- Realized projects in OEM factories as a linebuilder.
- Certified with ISO 9001:2000 and moved to new “technology center” in Tuzla.

Production Technologies

2006

- Foundation of Aerospace division and realized new projects from aerospace industry.

2009

- Started to spin-out solution technology companies and reorganized for future technologies.
- Altinay won the Successful SME (Small and Medium Size Enterprise) Grand Award of the Year.

Solution Technologies

2014 Strategic Business

- Established ALTINAY Aerospace and Advanced Technologies Inc. company at Istanbul Teknopark, Tuzla in Istanbul.

2015 Global Business

- Acquired KSM Maschinenbau GmbH company at Cologne, Germany.

2016 Green Business

- Started to lithium-ion battery pack design and manufacturing under the ALTINAY Energy Technologies division at Istanbul, Turkey.

Robotic Technologies

Core Business

ISO 9001

ISO 14001

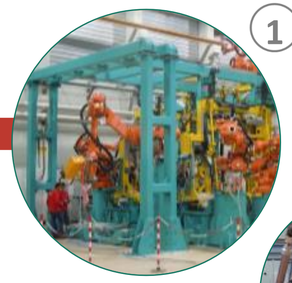
TSE Industrial Design Patent

Group Structure

Employess
410

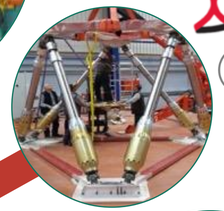
Turnover
[2017]
45 mil. €

1 altinay Production Technologies



Production Technologies
- Production Systems
- Transfer Systems

2 altinay Aerospace & Advanced Technologies



Aerospace & Advanced Technologies
- Motion Systems
- Unmanned Systems
- Demilitarization Systems

3 KSM

KSM GmbH
- Test and Measurement
- Robotic Systems

4 altinay Teknoloji Grubu | Elektromobilite ve Enerji Teknolojileri

Energy Technologies
- Energy Storage Systems
- e-Mobility Systems

altinay MODCENTER

Vehicle Technologies
- Modification Systems

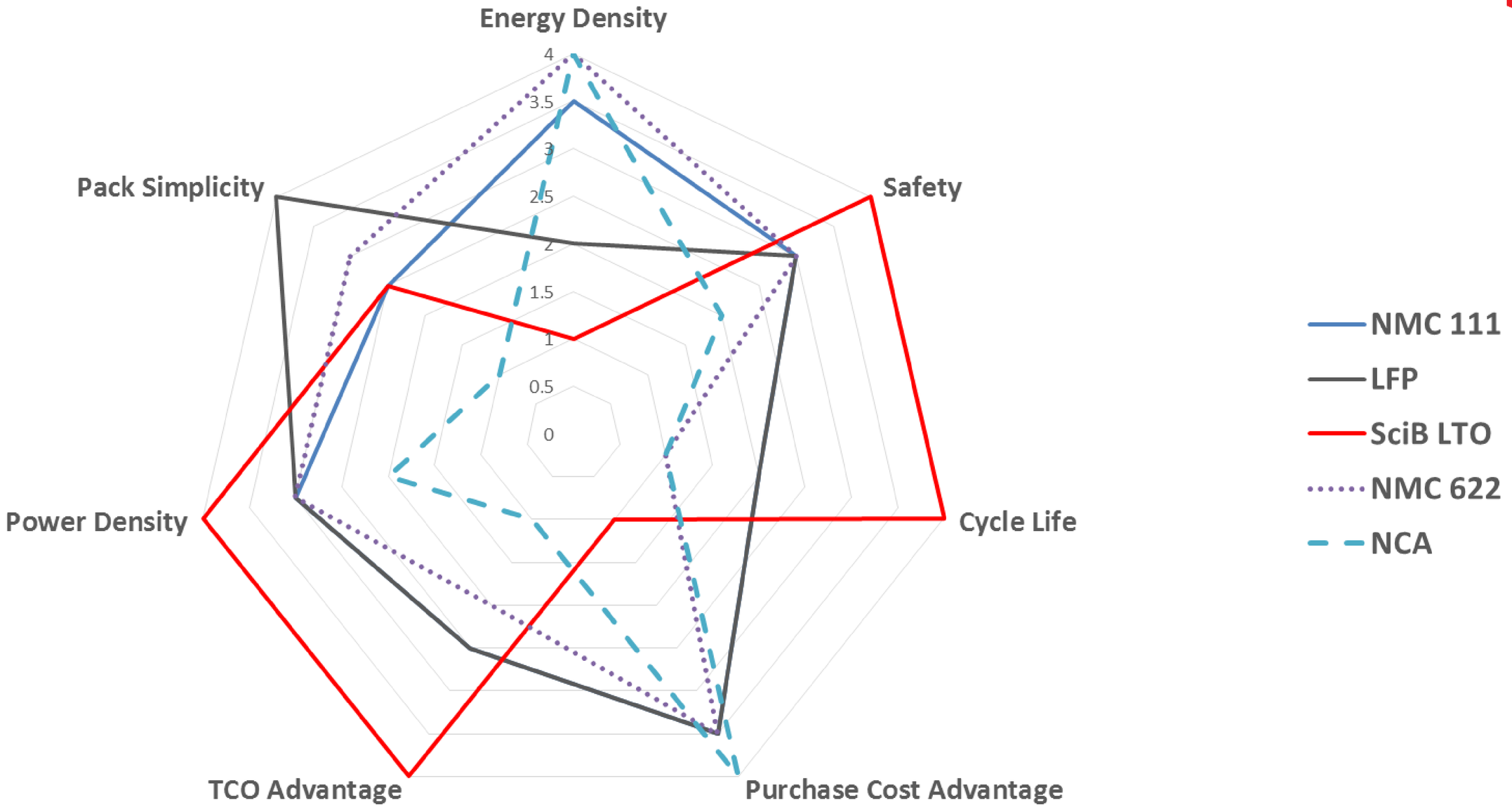
5

OLBRICHT

Glass ve Transfer Technologies
- Glass Processing and Transfer Systems

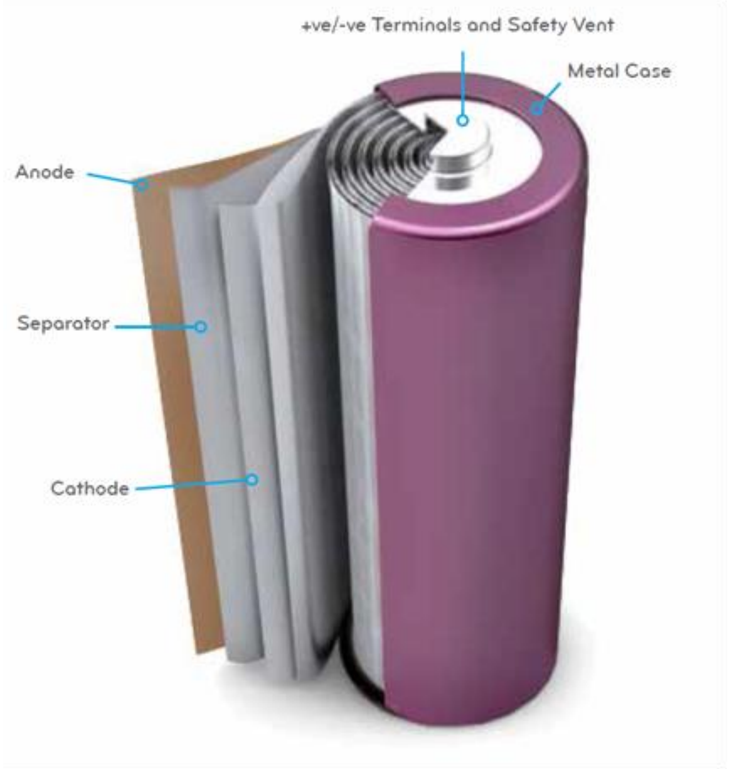
6

Lithium Cell

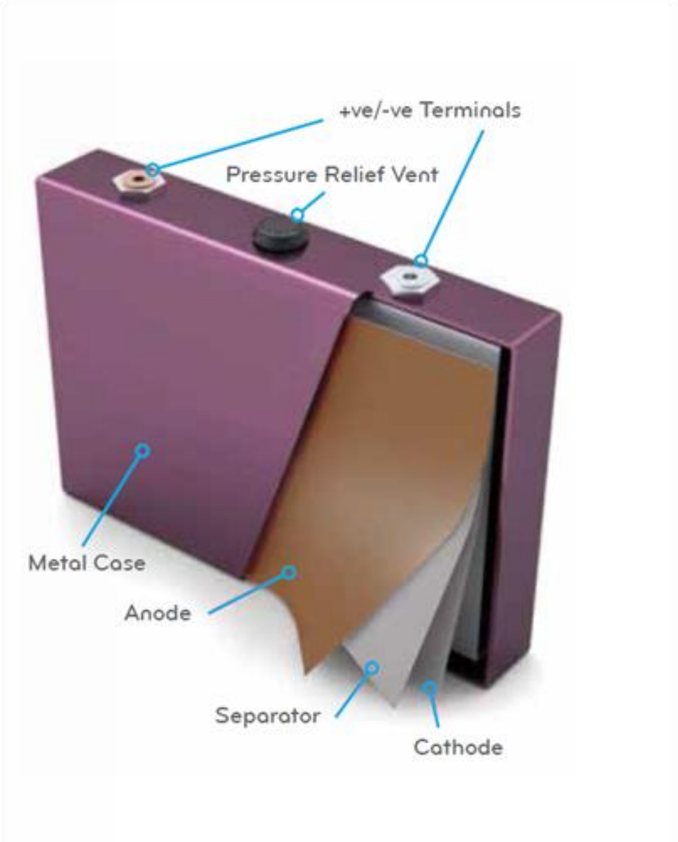


Lithium Cell

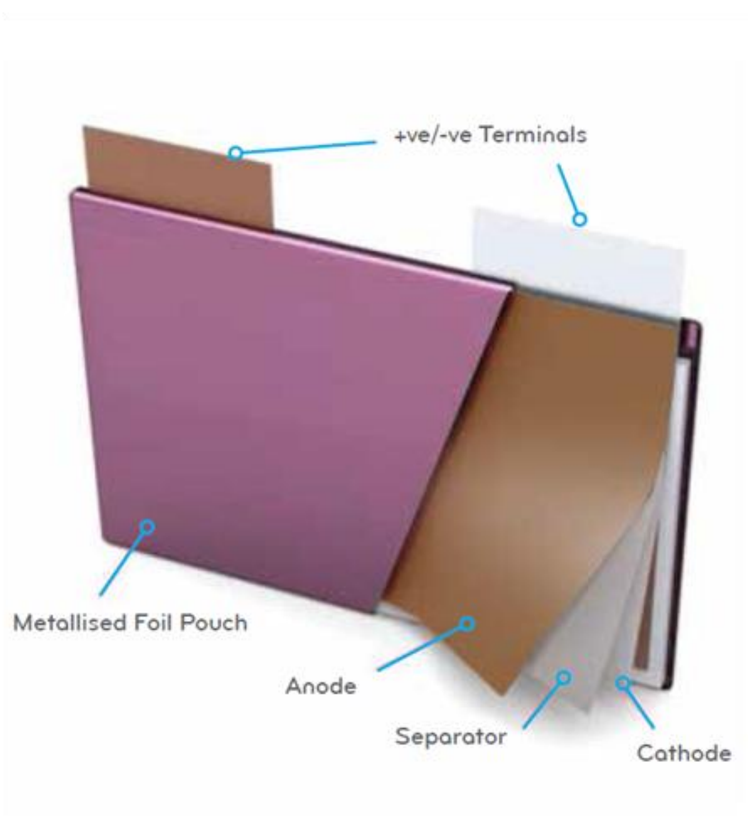
Cylindrical



Prismatic



Pouch

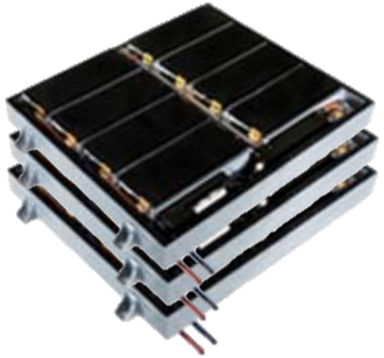


BATTERY PACK

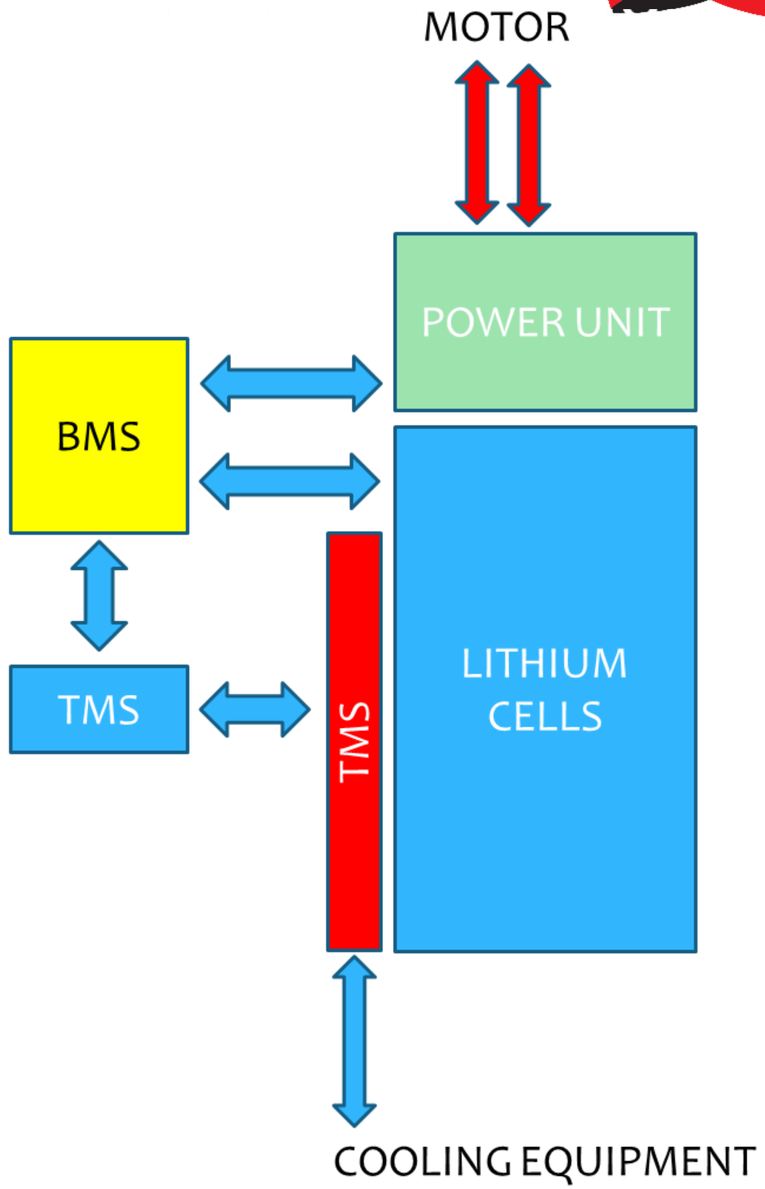
CELL

MODULE

PACK

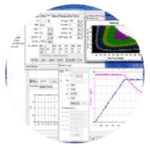


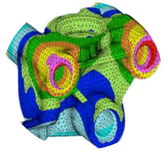
SYSTEM

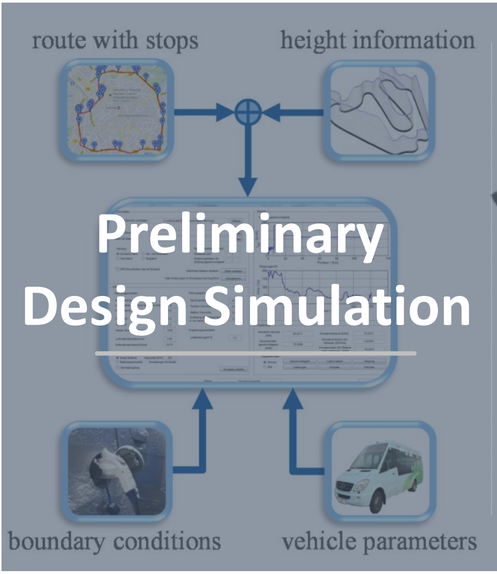


Capabilities

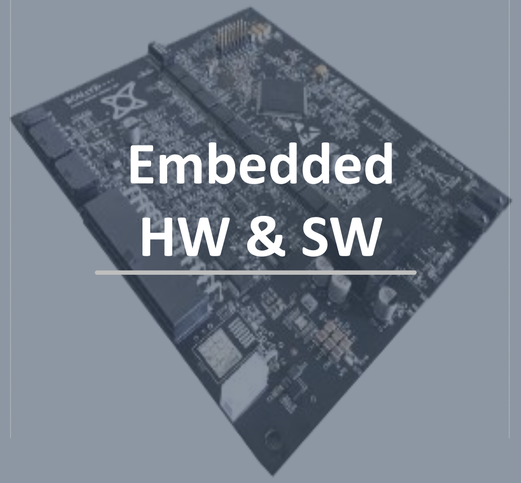
e-mobility



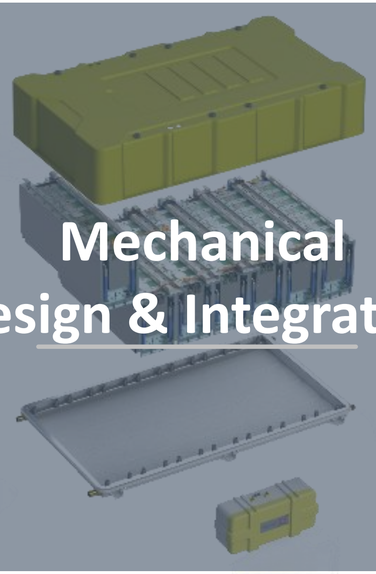



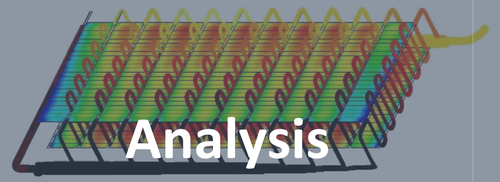
Preliminary Design Simulation



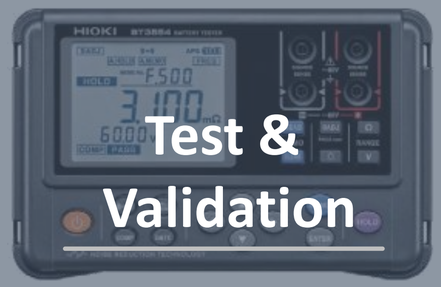
Embedded HW & SW



Mechanical Design & Integration



Analysis



Test & Validation

ALTINAY ENERGY develops local and unique systems in line with its goal of becoming a global player, while improving personnel and equipment capabilities and improving quality processes while taking into account changing market and competition conditions.

ABOUT

Standards

e-mobility

- ISO 12405 : Electrically Propelled Road Vehicles — Test Specification for Lithium-Ion Traction Battery Packs and Systems
- ISO 16750 : Road Vehicles Environmental Conditions And Testing For Electrical And Electronic Equipment
- ISO 6469 : Electrically Propelled Road Vehicles — Safety Specifications.
- UN ECE R10.5 : Uniform Provisions Concerning The Approval of Vehicles With Regard to Electromagnetic Compatibility
- UN ECE R100.2 : Uniform Provisions Concerning The Approval of Vehicles With Regard to Specific Requirements for the Electric Power Train
- AEC - Q100: Failure Mechanism Based Stress Test Qualification For Integrated Circuits
- AEC - Q101: Failure Mechanism Based Stress Test Qualification For Discrete Semiconductors
- AEC - Q200: Stress Test Qualification For Passive Components
- IPC-7351 : Generic Requirements for Surface Mount Design and Land Pattern Standard

Low Volume
Climatic Chamber

Cell Tester

High Power
Battery Tester
2 X 1000V, 600A
250kW

High Volume
Climatic Chamber
W2350xH1000xD1500(mm)

Thermal Simulator

Battery Test Laboratory

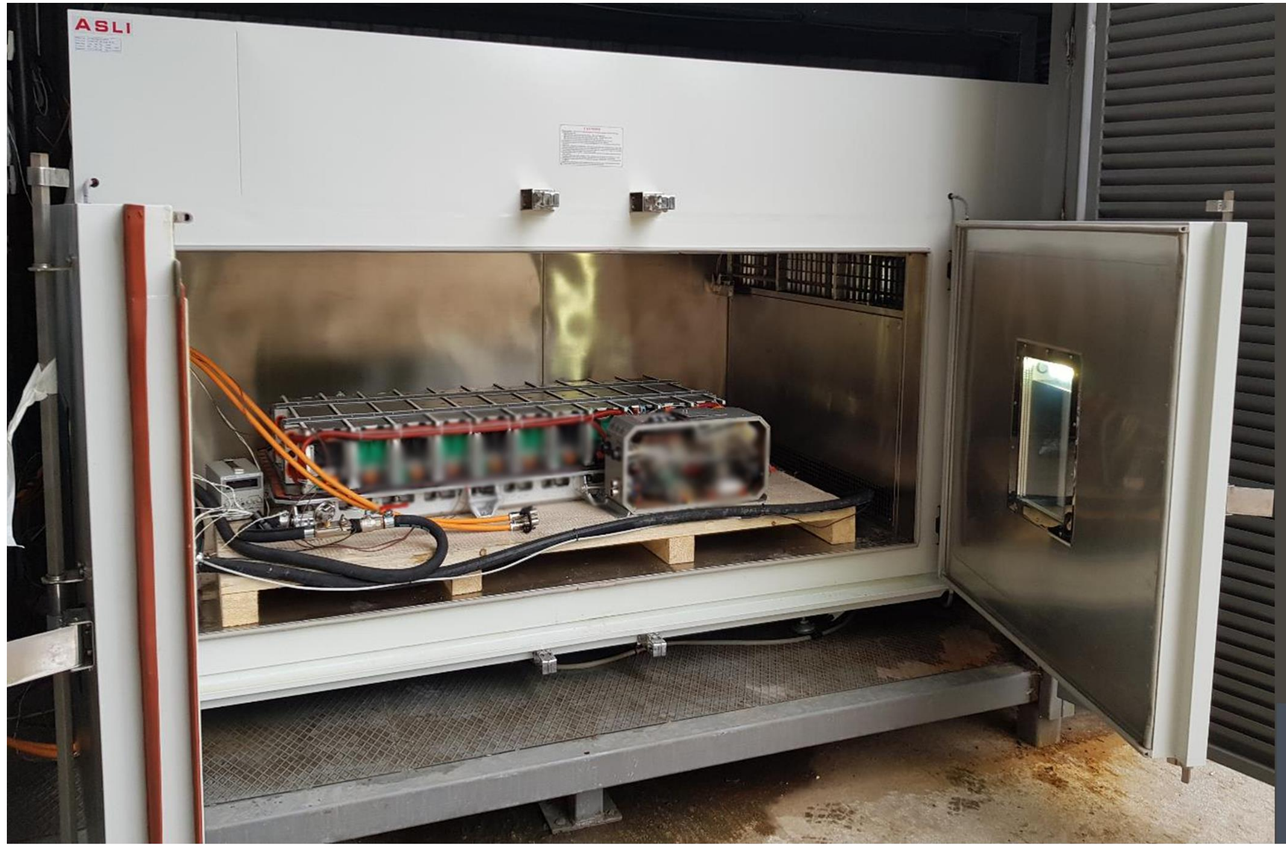
e-mobility

For **Battery Development** activities, there is a laboratory in the company where ESD measures are taken and various test and measurement devices are located. There are various devices such as chargers for various battery types, adjustable and programmable discharge device, adjustable DC power supply, oscilloscope, precision multimeter, as well as test cabinets.

SYSTEM AND SUBSYSTEM PERFORMANCE TESTS

ABOUT

SYSTEM AND SUBSYSTEM CLIMATIC TESTS



-60Deg C ~150 Deg C (adjustable)
10% to 98%R.H(10%R.H when 65C° to 85C°)

VIBRATION TEST

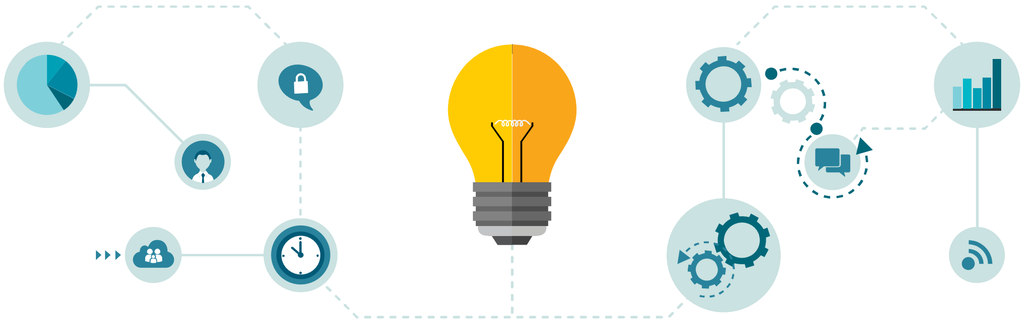
e-mobility

SHOCK TEST

e-mobility

FIRE TEST

e-mobility



APPLICATIONS

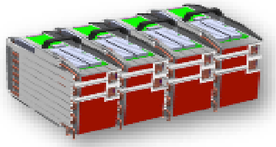
Battery Roadmap

e-mobility

2011

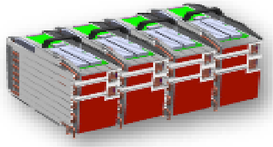
Chemistry: LFP
Capacity: 18 kWh
[No cooled]

Chemistry: NCA
Capacity: 5 kWh
[Fan cooled]



2013

Chemistry: LNCMO
Capacity: 24 kWh
[Air cooled]



Chemistry: LNCMO
Capacity: 24 kWh
[Water cooled]

2015

Chemistry: N CA
Capacity: 8 kWh
[No cooled]

2016

Chemistry: LNCMO
Capacity: 29 kWh
[Water cooled]

Chemistry: LTO
Capacity: 70 kWh
[Air cooled]

2017

Chemistry: LTO
Capacity: 111.7 kWh
[Air cooled]

Chemistry: LNCMO
Capacity: 27 kWh
[Water cooled]

Chemistry: LTO
Capacity: 28 kWh
[Water cooled]

2018

Chemistry: LNCMO
Capacity: 54 kWh
[Water cooled]

Chemistry: LTO
Capacity: 28 kWh
[Water cooled]

Chemistry: LNCMO
Capacity: 0.6 kWh
[Water cooled]

BOMBUS Battery Series

e-mobility

LTO 280

Battery Pack Specifications	
Capacity	46 Ah
Cell Configuration	264S2P
Installed Energy	27.9 kWh
Nominal Voltage	607.2 VDC
Charge Current	276 A (6C)
Max. Charge Current	400 A (10 s.)
Discharge Current	276 A (6C)
Max. Discharge Current	400 A(10 s.)
Weight	480 kg
Dimensions	1547 x 983 x 319 mm
Cooling	Liquid
DC Resistance (DC 10 sn. SOC 50%)	140 mOhm
Communication Protocol	CAN 2.0A
Operating Supply Voltage (BMS...)	18 – 32 VDC
Power Consumption on LV – Active	< 470 mA
Power consumpiton on LV - Sleep	< 400 uA
Balance	Passive Balance
Protection	IP67

BOMBUS Battery Series

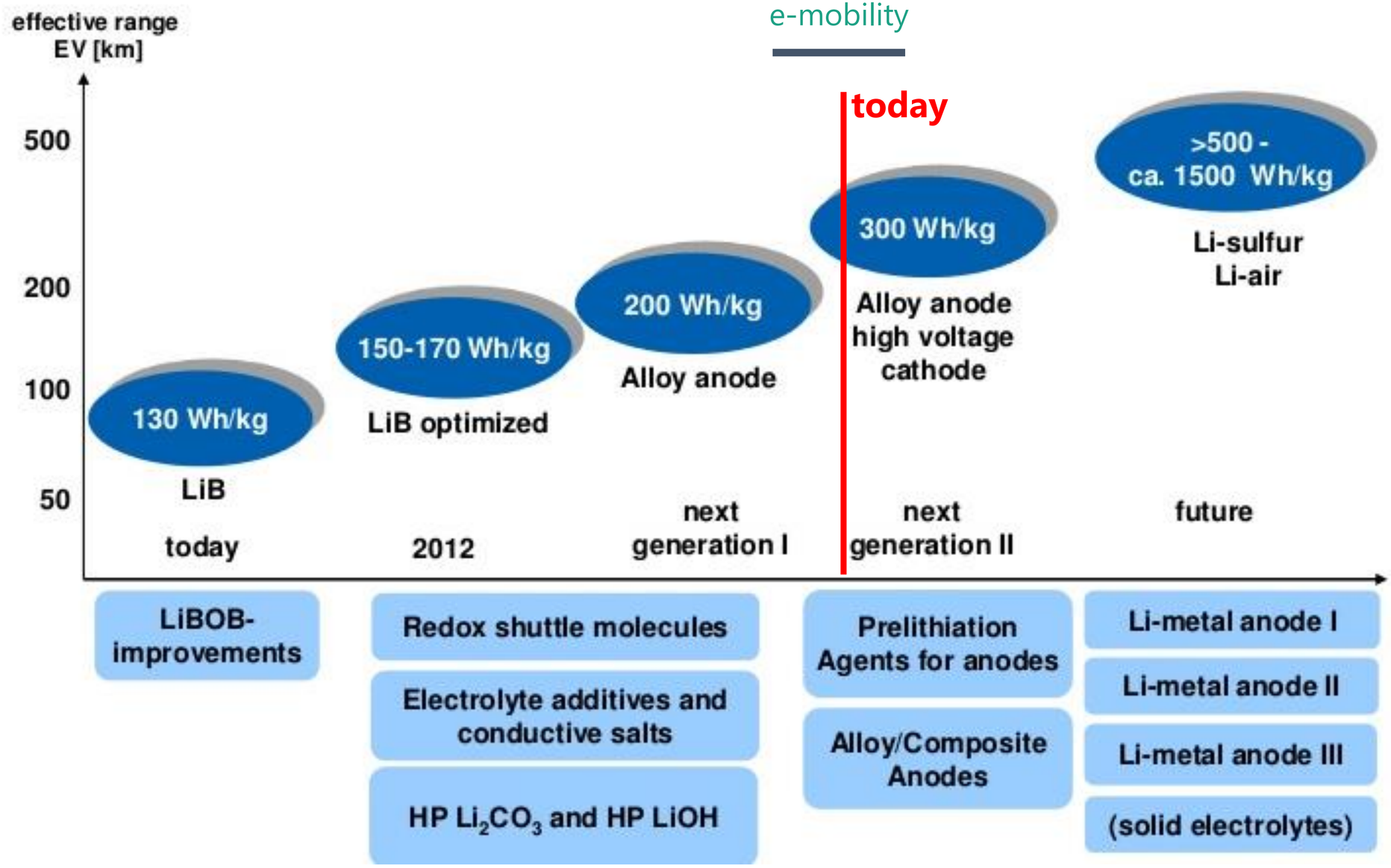
e-mobility

NMC 540

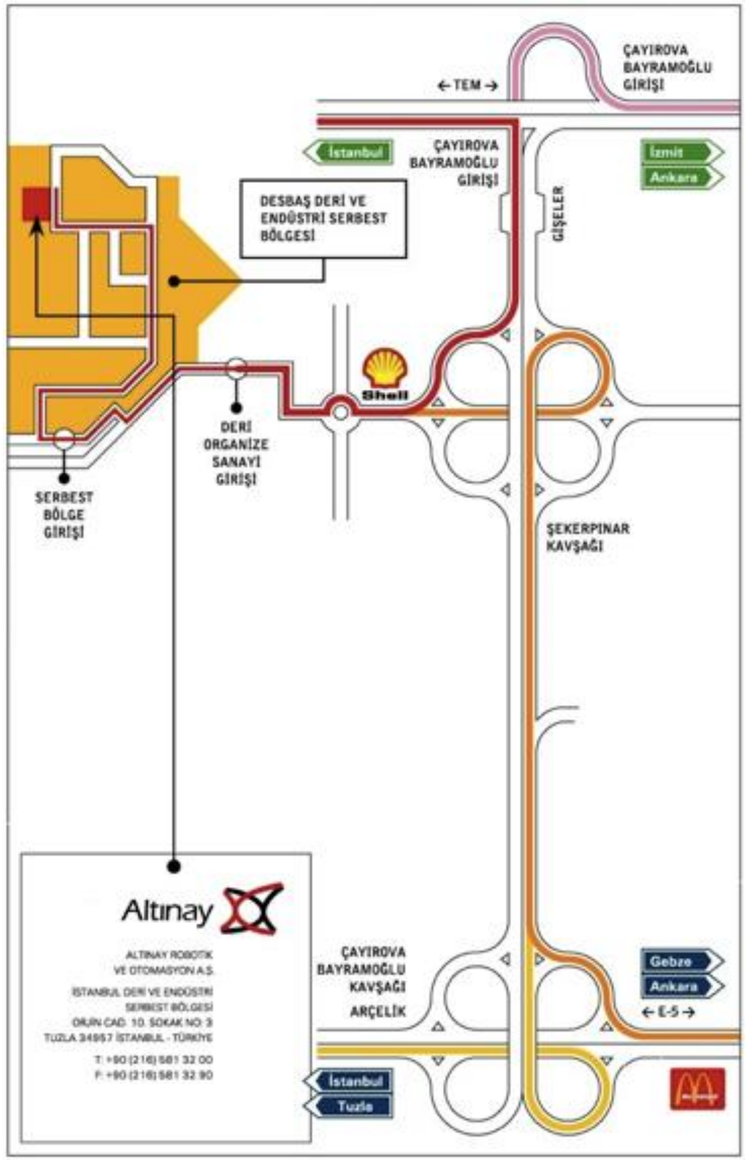
Battery Pack Specifications	
Capacity	88 Ah
Cell Configuration	168S2P
Installed Energy	54 kWh
Nominal Voltage	613.2 VDC
Charge Current	164 A
Max. Charge Current	200 A (10 s.)
Discharge Current	164 A
Max. Discharge Current	200 A(10 s.)
Weight	550 kg
Dimensions	1613 x 941 x 341 mm
Cooling	Liquid
AC Impedance (1kHz)	84 mOhm
Communication Protocol	CAN 2.0A
Operating Supply Voltage (BMS...)	18 – 32 VDC
Power Consumption on LV – Active	< 240 mA
Power consumpiton on LV - Sleep	< 2 mA
Balance	Passive Balance
Protection	IP6K9K

Future Trends

e-mobility



Contact Us



altınay

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