



# eurecat!

**Components, systems, advanced concepts, software  
and innovative technology for**

**GREEN VEHICLES**

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**Eurecat**

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**ascamm**  
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TECHNOLOGICAL CENTRE

 **Barcelona Media**

BARCELONA TECHNOLOGY  
DIGITAL CENTRE  
**bdigital**

**ctm**  
CENTRE TECNOLÒGIC

**Over 450 professionals**  
**Generating an income volume of**  
**€38 million**

**eurecat!**

**Over 160 applied R&D projects**  
**73 patents**  
**8 spin-offs**  
**More than 1.000 customers**



# Materials technologies, components & systems, advanced manufacturing for lightweighting at low cost

CERAMIC &  
METALLIC  
MATERIALS

PLASTIC  
MATERIALS

COMPOSITE  
MATERIALS

FUNCTIONAL  
TEXTILES

FUNCTIONAL  
PRINTING



ROBOTICS &  
AUTONOMOUS  
SYSTEMS

PRODUCT/  
PROCESS  
SUSTAINABILITY

INNOVATIVE  
MANUFACTURING  
PROCESSES

ADVANCED  
SIMULATION

INNOVATIVE  
PRODUCT  
DEVELOPMENT

## Materials & advanced technologies Components industrialisation:

tools (moulds, processes), validation tests, production, pre-series, process optimization, productivity improvements, problem solving. Rapid prototyping, short series...



# Electric Vehicles and Battery Testing

**Cell cycling** (Benchmark testing / Quality control / Life expectancy / driving cycle reproduction)

**Cell modelling** (BMS development, range simulation, Intelligent thermal management)

**Development** (thermal and energetic characterisation for design retrofit, BMS development ...)

**Validation** (internal, Certification & Homologation)

Cell testing (Bitrode MCV8-100-5)



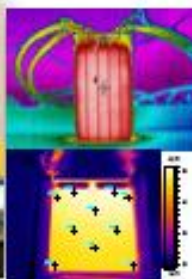
- 8 Channels
- Voltage: 0 - 5V
- Current: 0 - 800A
- Power: 0 - 4000W
- Climatic chamber Angelantoni DY600E (-20°C – 180°C)

Battery pack cycling (Kratzer VES 150):



- Max. Voltage: 700V
- Max. Current: 400A
- Power: 150kW
- Peak Power: 170kW
- Climatic chamber Angelantoni DY600 (-20°C – 180°C)

Thermography



- Flir
- Fluke
- Thermacam

Safety Chamber



- Internal dimensions: 2,2x2,5x2,3 m
- Temperature: 15°C – 35°C
- Active and passive safety features



Requirements and  
preliminary sizing

Cell cycling

Cell  
characterization


Solution  
desing

Solution  
prevalidation

Final solution  
validation

## GREEN VEHICLES topics 2016: possible roles & ideas

NMBP-08-2016:  
Affordable weight  
reduction of high-  
volume vehicles  
and components  
taking into  
account the entire  
life-cycle



- Lightweight of heavy duty vehicles - Cold and hot forming of AHSS Joining technologies
- Lightweight in BiW components by using smart solutions in press hardened steels
- Lightweight in Aluminum structural parts by advanced casting technologies

- Development of lightweight solutions based on steel development, optimization of hot and cold forming processes of thin sheets, fatigue and fracture (including crash) characterization of developed solutions.
- Application of life cycle analysis, life cycle costing and water footprint. Identification of improvements through ecodesign. Recyclability studies of products and materials. Studies of energy efficiency.
- Advanced light weight battery development.

## GREEN VEHICLES topics 2016: possible roles & ideas

**GV-02-2016: Technologies for low emission light duty powertrains**



**GV-03-2016: System and cost optimised hybridisation of road vehicles**



**GV-11-2016: Stimulating European research and development for the implementation of future road transport technologies**



**GV-12-2016: ERA-NET Co-fund on electromobility**



**Advanced battery development from initial sizing to final integration, set up, full life evaluation.**

- Modelling & Simulation (battery pack).

- R&D on industrialization of new components.
- Rapid prototyping of thermoelectric materials for the reuse of waste heat (microwave+plasma for 3D printing tech).
- Mechanical & tribology characterisation of the developed materials.

- Monitoring of road transport R&D projects. Identification of actions to support education, training, standardisation & business models.

- Electrical fleet optimization (route planning based on trajectory, battery status, driver profile, advisor for driving improvement (including training, gamification)).
- New business models - improvement of the infrastructure associated to electromobility (charging points location, choice of fleet to electrify...)



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innovating  
for business

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## Eurecat

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