



# SWITCHESS

Quick overview

23/05/2022



# Company snapshot



# SWITCHESS

- We are a French company based in Nouvelle Aquitaine, born from a collaboration with the CEA TECH in 2018, and our technology is a result of BATCOM Program (switched cells batteries) that was launched in 2014
- SWITCHESS's goal is to develop, industrialize and market power storage solutions based on the architecture of so-called "switched cells", mostly for stationary applications.

Currently at  
TRL 5

Technology  
based on  
14 patents

Team of 5

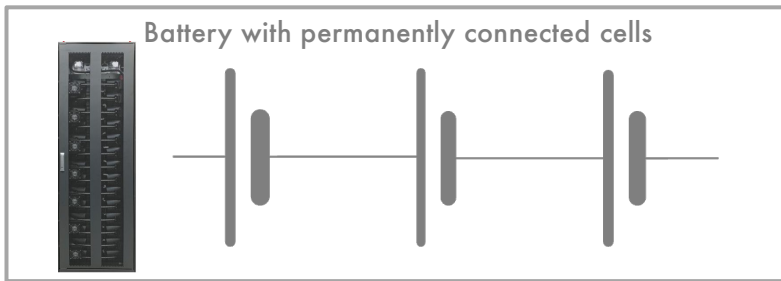
Established  
3 years ago



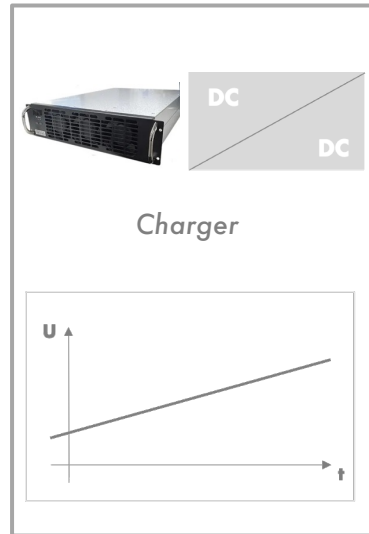
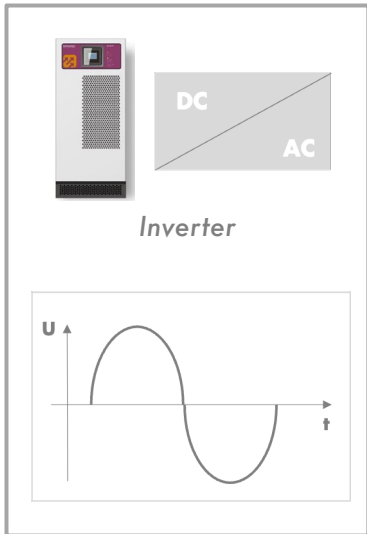
# Basics

# Switched cell batteries management and architecture

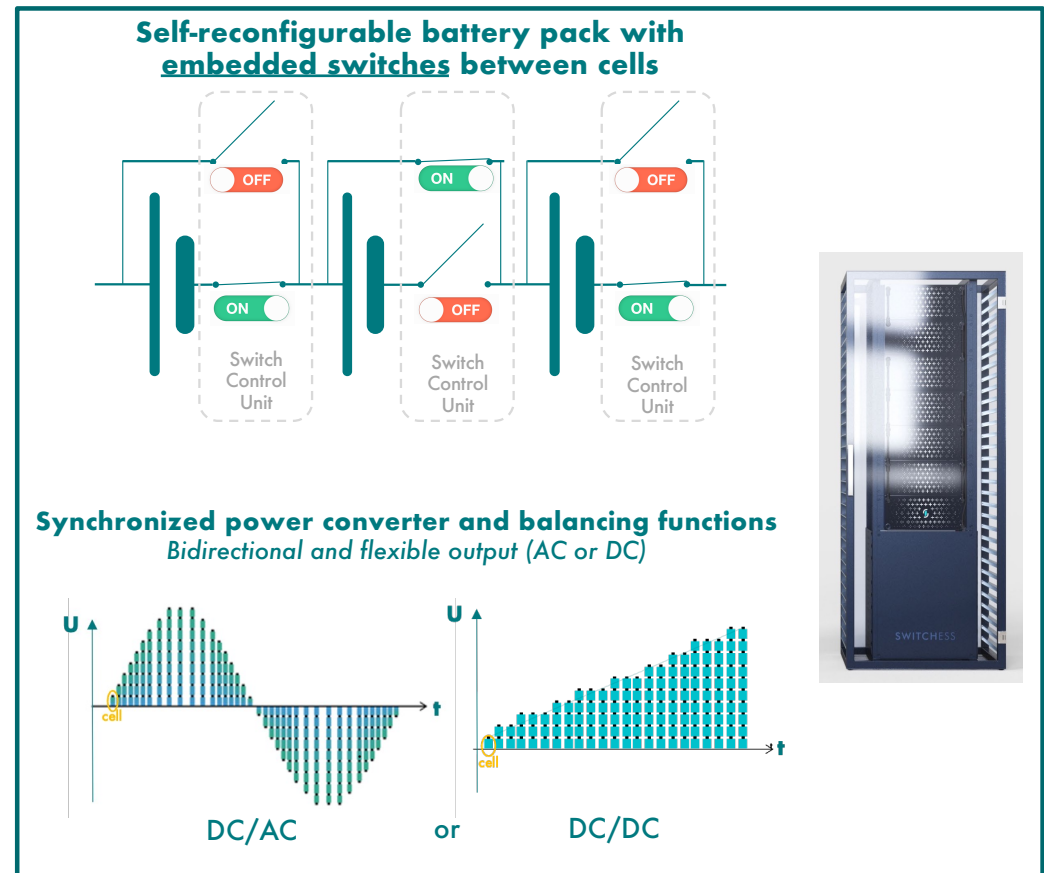
## Standard architecture



## Separate power converters

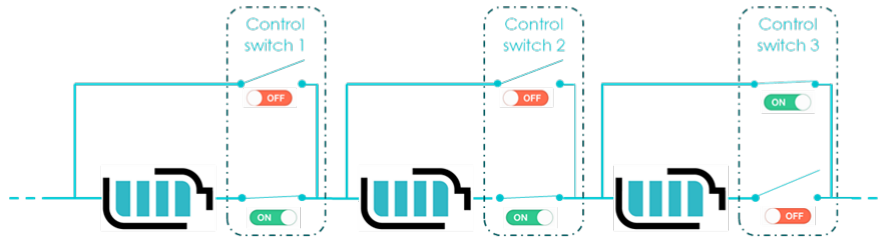


## SWITCHES "All in one" architecture

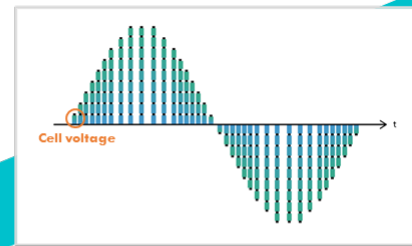


# Switched cell batteries management and architecture

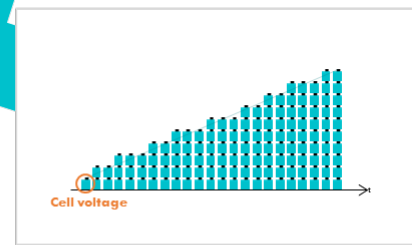
## Multifunctional system



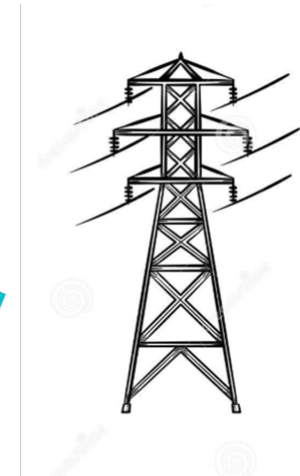
Grid Connection  
DC/AC



or

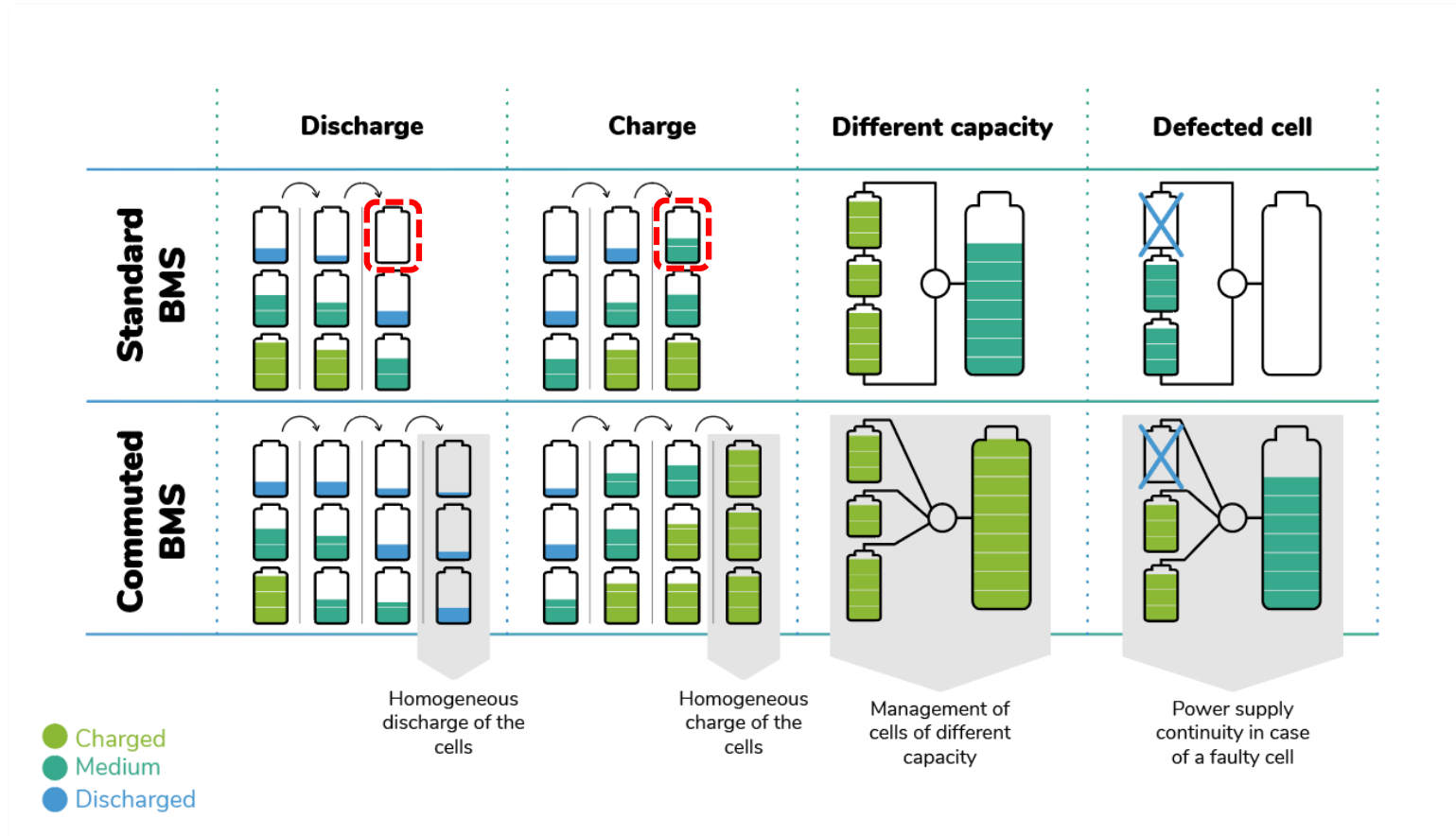


DC/DC  
EV Charging



# Switched cell batteries management and architecture

Full use of each cells energy capacity, low stress, better availability



# Switched cell batteries management and architecture

## Hardware

- No AC inverter/charger
- Bi-directional (DC and AC)
- Low EMC

## Performances

- High efficiency
- Fast balancing
- Full energy of every cell
- No weakest cell limitation

## Security

- Individual cell real time measures
- Single failed cell bypass
- Low voltage anywhere inside the system

## Lifetime

- Low cell stress operation
- Uniform aging
- Improved battery cycle life
- Reusability

## Benefits

Levelized Cost of Storage : min -20%

Space savings : up to -50%

Improved security

Uptime

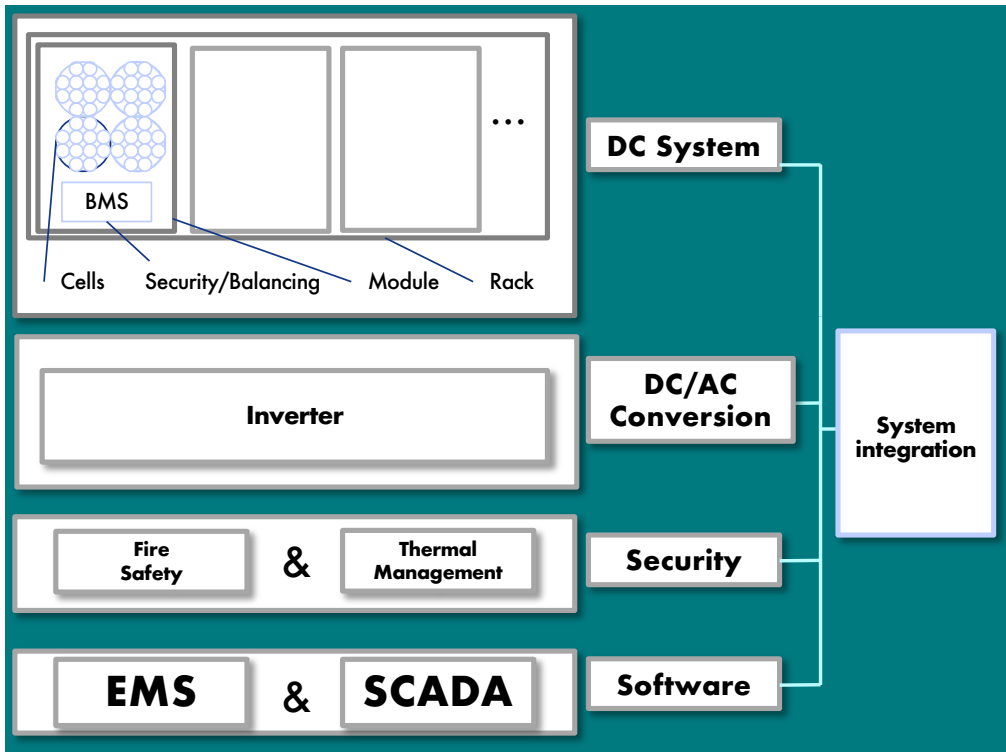


# **BESS**

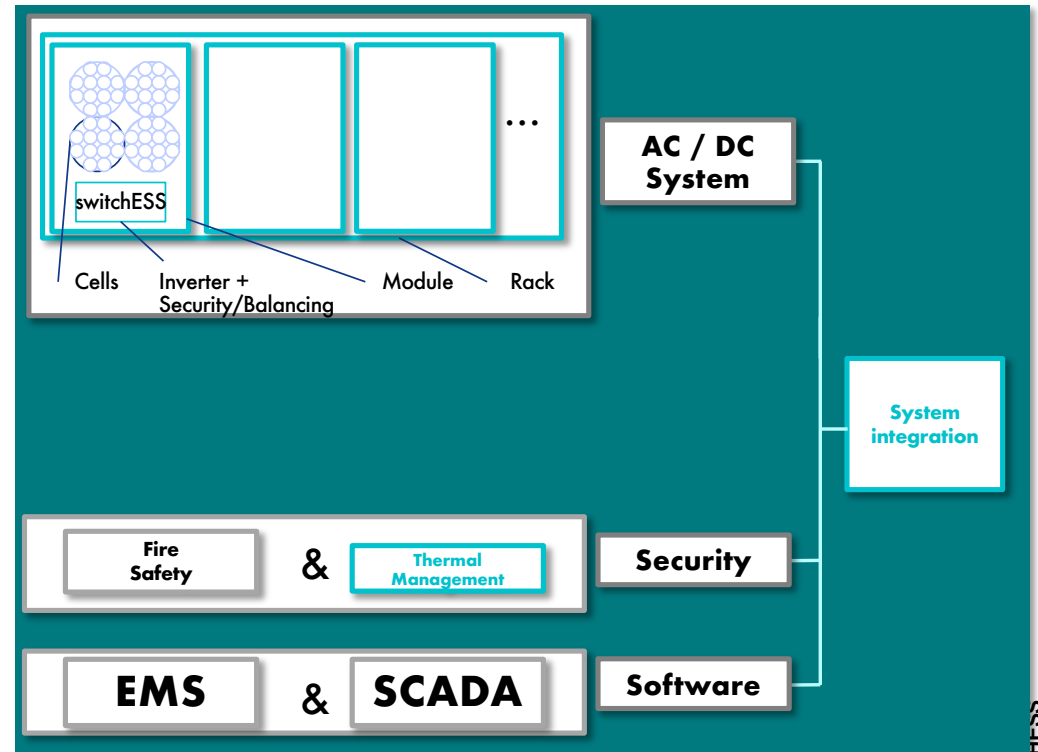
Standard technology vs switchESS technology



# Standard BESS VS switchess BESS



Standard



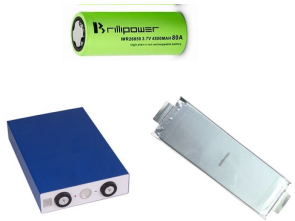
SWITCHESS



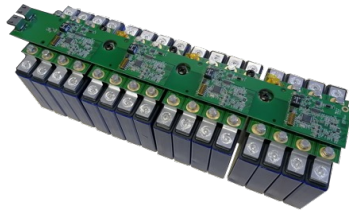
# **Our business**

# From cell to system

From cell to system



**Cells**



**Cells + Electronic boards**

security, balancing, power conversion



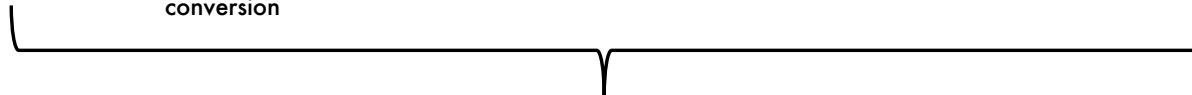
**Module**



**Rack**



**Shelter**

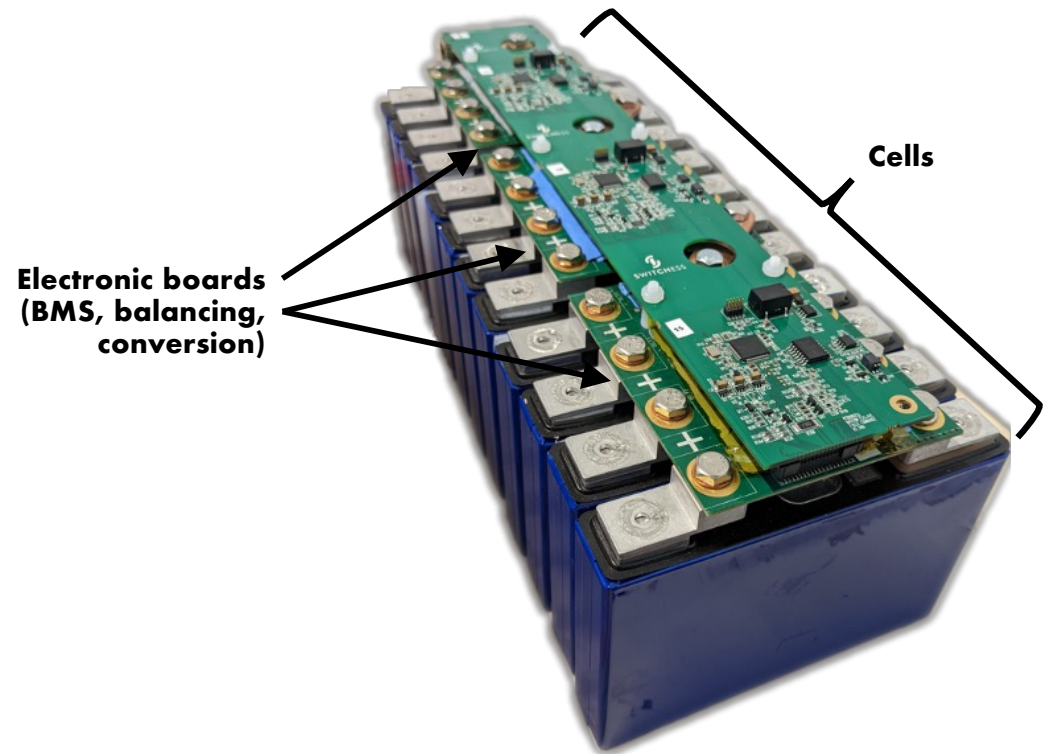


SWITCHESS

# Base brick : Cell & Electronics

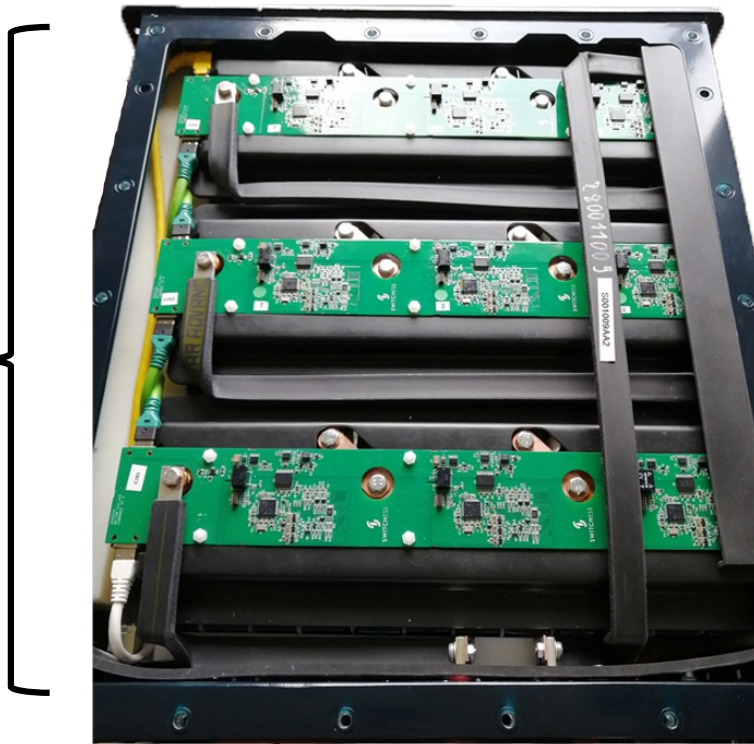


Prismatic cells (LFP, NMC, ...)



# Modules

1 module



4 modules



# Racks



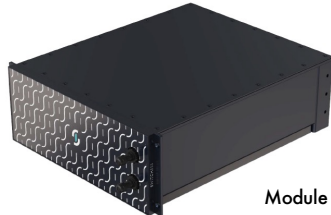


# **Our references**

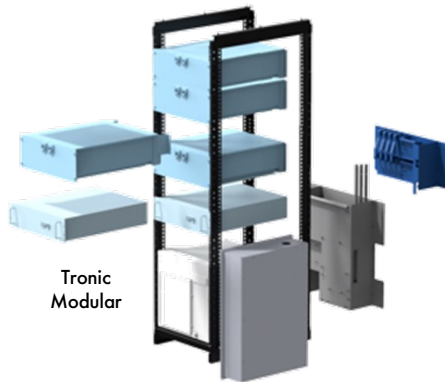
# Our references



**Multi purpose demonstrator**  
30 kW (AC) / 56 kW (DC) / 8 kWh



Module



Tronic  
Modular

**Demonstrator module for EV charger**  
22 kW / 22 kWh



BORDEAUX MÉTROPOLE



**Renewable Energy Storage demonstrator**  
5 kW / 5 kWh





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