Draft Topic Priorities: Green ECS

Ecodesign for Electronic Components and Systems

Aiming at low climate and environmental footprint and high resource efficiency of production, integration, scaling-up and usage of ECS, supported by full life cycle analysis.

Priorities:

- Energy efficient co-design and on-demand operation of ECS soft- and hardware
- Low energy consumption by adding sleep modes or partial shut down modes
- Energy efficient sensors to measure environmental parameters
- Rebound effects of energy harvesting with new materials
- Green life cycle approach, including functional integration and modularization
- Repairing and recycling of composites
- New fabrics for GaN/Si power
- Predictive and condition based maintenance
- Standardize environmental impact for chips, boards, systems
- Identifying and analyzing the links of the ECS value chain in terms of CO2 footprint
- Develop a LCA-database for ECS
- Trustworthy and high quality production in Europe

Draft Topic Priorities: Decarbonisation

Effective & Efficient Application of ECS for Decarbonisation

Aiming at reliable, efficient, flexible, intelligent and resilient energy collection, conversion, storage & distribution for various applications from mobility to health.

Priorities:

- Energy efficiency of electric vehicles allowing range extension, also by automation
- Performance gains and sustainable manufacturing of power electronics for electrification
- Energy harvesting as a power source
- Adaptive management of renewable energy sources, storages and chargers in smart grids
- Secure, resilient communication, smart edge computing and AI for autonomous energy control
- Comprehensive assessment of product CO2 emissions based on analysis of components
- Smart monitoring of the environment and bio resources
- Energy storage technologies: production, transportation, storage, distribution, combustion and energy conversion systems
- Carbon Capturing
- Development of reference instruments to measure accurate energy flow/consumption in EV
- Green and Zero-emissions buildings and constructions
- Sector coupling: heat and electricity
- Verification & validation of lower carbon footprint solutions