

Integration of Power Systems in 3-D

Part of SEEDS, CNRS Research Group

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12 French Research Laboratories in Power Electronics have gathered their respective competence and share common research activities, dedicated to 3D integration of Power Systems. Staff is larger than 80. Fundings come from Public Institutions and Industries. The areas of expertise include material, devices, topologies, control, packaging, and reliability. Low-voltage to high-power or harsh environment applications are addressed.

Key Research Fields & Competence Areas:

- Material: property control, synthesis and assembly process
- Passive devices: design, hybrid and monolithic integration
- Active devices: processing, characterisation, functional integration, SiC.
- Design: electro-thermal modeling and simulation, optimisation for EMC
- System topologies and assembly: 3D-oriented
- Reliability: characterization, modeling and simulation for design-level estimation

Highlights:

- Common prototyping platform in Toulouse (3Dphi).
- Platform for monolithic integration of power systems (RTB-LAAS)
- Numerous testbenches for characterisation, EMC, extreme-SOA measurement, cycling-based reliability test, high-temperature environment.

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Up-to-date documents, results and road-map
available at <http://www.seedsresearch.eu/isp3d>