

Innovative materials and components for power and RF microelectronics: wide bandgap & porous SCs and their applications.

Multidisciplinary expertise is involved in this research thematic, starting from material chemistry to energy conversion systems. The aim of our team is to develop new and original devices that answer the future needs in power and mobile electronics. The main activities are focused on porous semi-conductor synthesis and their application in microelectronics, wide band gap materials, macroscopic systems and energy conversion.

This research direction is developed on a technological platform situated in Centre Val de Loire Région: [CERTeM - Technological R&D Center for Microelectronics](#). This platform includes a 450 m² clean room.

Ongoing projects

«**µBAGS**» : Micro-batteries tout-solide à base de graphène et de silicium - Project of Region Centre-Val de Loire (2016-2018). Partners : PCM2E, ST Microelectronics, SILIMIXT. Coordinator : PCM2E.

«**SIP&MUT**» : Développement de lames d'amortissement pour technologies CMUT visant des applications médicales - Project of Region Centre-Val de Loire (2014-2016). Partners: GREMAN, U930, Vermon, SILIMIXT, Altai, Echosens. Coordinator: GREMAN.

«**ECCO**» : Optimisation du cout de la consommation d'electricite dans l'habitat individuel - Project of Region Centre-Val de Loire (2015-2020). Coordinator: GREMAN. Partners: GREMAN, PRISME, AEG Power Solutions.

«**MDE MAC3**» : Maitrise de la demande d'energie par mesure aveugle de consommation des charges au compteur - Project of Region Centre-Val de Loire (2013-2016). Coordinator: PRISME. Partners: PRISME, GREMAN, Avidsen.

«**SUPER SWITCH**» : Conception de nouveaux interrupteurs de puissance haute tension a Super-Jonction - Project of ANR Blanc (2012-2016). Coordinator: LAAS-CNRS. Partners: LAAS, IMS, GREMAN and IBS.

«**GaNex**» : Reseau National sur GaN - Project of ANR (LabeX 2eme vague) (2012-2020). 2 Projets exploratoires internes: croissance localisee de nanofils de GaN (2012-2015) et sonde acoustique PMUT (2016-2019). Coordinator: CRHEA-CNRS.

«**ENSO**» : Energy for Smart Objects - Project ECSEL - H 2020 + Eureka (2016-2020). Coordinator: STMicroelectronics. Partners: 34 participants from 8 European countries.

«**Hi-C**» : Novel in situ and in operando techniques for characterization of interfaces in electrochemical storage systems (understanding interfaces in rechargeable batteries and super-capacitors through in situ methods) - Project of FP7 (ENERGY-2013-1) (2014-2017). Coordinator: Technical University of Denmark. Partners: Technical University of Denmark, University of Tours, Commissariat a l'Energie Atomique et aux Energies Alternatives, Karlsruhe Institute of Technology, Uppsala University, Haldor Topsøe A/S, Uniscan.

«**BALATON**» Program - PHC franco hongrois - Campus France: Projet mis en œuvre en Hongrie par l'Office National pour l'Innovation (NIH), le Ministère des Capacités Humaines (EMMI), les ministères des Affaires étrangères et du Développement international (MAEDI) et de l'Education nationale, de l'Enseignement supérieur et de la Recherche (MENESR).

«**LASiC**» : Irradiation laser pour améliorer la qualité d'une heterostructure 3C-SiC/Si/3C-SiC dans le but de réaliser des MEMS SiC. Project of PHC PROCOPE (France/Germany) and Campus France (2015-2016). Coordinator: GREMAN. Partners: IPHT (Jena).

Contact

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