Activities

GREMAN's main activities are focused on materials, components and devices for energy efficiency and microelectronics : from nano to micro. Our lab researches are divided in five key topics :

- Functional**oxides** for **energy efficiency**: combinatory synthesis and nanostructuration.
- **Magnetic & optical**properties of **ferroic and electronic correlation materials**.
- **Innovative materials and components** for power and RF **microelectronics**: wide bandgap & porous SCs and their applications.
- **Piezoelectric & capacitive micro & nano systems** for ultrasound transducers and energy conversion.
- Methods and instrumentation for **ultrasonic characterization of complex media**.

Multi-topics ongoing projects

- **PIA « TOURS 2015 »**: New switches bases on cMUTs technology and energy harvesting dispositive based on ZnO nanostructure - Investment program "New Energy Source" (2012-2018). Coordinator STMicroelectronics Tours. Partners : 14 academic partners - GREMAN (cMUTs and ZnO research teams) - (interactions with GREMAN - ZnO research team : LCPO Bordeaux UMR5629, LCC Toulouse UPR8241). **Project led by Oxides, Microelectronic and Micronanosystems research teams.**

- **« COHMET »**:Couplages magneto-electriques dans des heterostructures multiferroiques - Project of Region Centre-Val de Loire (2013-2017). Project's leader : GREMAN. Partners: ICMN (Universite d'Orleans), ST Microelectronics (Tours). **Project led by Oxides and Caracus research teams.**

- **Projet europeen « SAM3 »**: Caracterisation de semi-conducteurs - Amelioration des outils de caracterisation de dispositifs microelectroniques, microscopie acoustique et caracterisation de couches enfouies - Project of Eureka-Catrene (2015-2018). Coordinator : ST (Grenoble). Partners : 14 participants from 3 europeans countries. Project led by Microelectronic and Caracus research teams.

- **« ALBATTROS »**: Alternatives en eLectrodes pour BATTeRies iOn Sodium - Project of Region Centre-Val de Loire (2014-2016). Coordinator : PCM2E. Partners: PCM2E, GREMAN. Project led by **Oxides and Microelectronic research teams.**

- **« BAGS »**: Micro-batteries tout-solide a base de graphene et de silicium Project of Region CVL (2016-2018). Coordinator: PCM2E. Partners: PCM2E, GREMAN, SILIMIXT and STMicroelectronics. **Project Oxides and Microelectronic research teams.**