

International Joint Research Laboratory

Georgia Tech - CNRS : UMI 2958



The International Mixed Unit Georgia Tech-CNRS, UMI 2958



CNRS and the Georgia Institute of Technology, based in Atlanta and represented in Europe by Georgia Tech Lorraine, jointly created the UMI (the International Mixed Unit)-CNRS (UMI 2958) in 2006.

Two prestigious university-level engineering colleges, Arts et Métiers ParisTech and CentraleSupélec, and two universities, the University of Lorraine and the University of Franche-Comté, are associated members.

The UMI research is in the field of secure networks, telecommunications, nanotechnologies, functional materials, ultrasonic characterizations and robotics.

Areas of application: energy, environment, aeronautics, automobile, biomedical, information security.

The CNRS



The National Center for Scientific Research (CNRS) is a public organization for fundamental research.

Present in more than 1100 research and service units that cover all of France, CNRS extends its activity into all scientific, technological, and societal domains.

UMI Atlanta

The UMI has a physical presence at Georgia Tech Atlanta. UMI scientist visitors have access to the Institute for Electronics and nanotechnology, Institute for Materials, Institute for Robotics and Intelligent Machines and Strategic Energy Institute. The UMI lab at GT Atlanta provides an excellent opportunity to our scientists and students to take advantage of the state-of-the-art equipment at these centers, to establish a deeper and longer lasting relationship with research groups at GT Atlanta, and to participate in US research programs.

Georgia Institute of Technology



Georgia Tech is a State university located in Atlanta, Georgia, USA. The Atlanta campus enrolls 21,500 students, including more than 4,000 engineering students. Regularly ranked among the top five U.S. engineering schools, Georgia Tech is the largest producer of engineers in the USA and a leader in international research and education.

Georgia Tech is committed to cutting edge research and technology transfer to industry.

Georgia Tech Lorraine



Georgia Tech Lorraine (GT-L) is the European Campus of the Georgia Institute of Technology (Georgia Tech). It is located in Metz, France, at the heart of western Europe. Created in 1990, GT-L is located on the Metz Technopôle, a site dedicated to research, education and high tech companies. GT-L's mission is to create innovative collaborations in research, education, and economic development with European partners.

GT-L is devoted to the education of high potential, multi-cultural engineers able to ace new challenges in an increasingly global economy.



RESEARCH TOPICS

Nonlinear Optics and Dynamics

The nonlinear interaction of light with materials leads to a rich variety of phenomena—both dynamical as well as spectroscopic. These, in turn, have established nonlinear light-matter interactions as the cornerstone of a variety of applications, ranging from sensing to communications to information science. The research in nonlinear optics and dynamics at the UMI focuses on scientific developments that promise to lead to real-world applications. Such activities rely on the building on experimental setups to validate the theoretical work.



ASSOCIATED MEMBERS





Smart materials

Innovative materials research includes both optoelectronic semiconductors and functional materials, with projects ranging from wide-bandgap, semiconductors and devices to new metals for energy, automotive aeronautic.

It also includes research on advanced ultrasonics for nondestructive testing and imaging, and fabrication of novel nanoheterostructures and guided-wave devices, biomedical and environment applications and terahertz.

Computer science

This topic covers two fields: “Situated Cognition and Robotics” and “Information Systems”. Situated Cognition and Robotics encompass the developing intelligent systems in interaction with their environment. This research is conducted through two main collaborating approaches: the development of interactive model of cognition, based on neural fields and reinforcement learning, and the development of field robotic applications for environment observation and assessment.

Research on “Information Systems” deals with the evolution of wired and wireless communication networks away from the traditional centralized and static network architectures in order to meet the demand for increased flexibility, versatility, and robustness.



ASSOCIATED LABORATORIES





The Materials and Processes OpenLab brings together research teams from PSA Peugeot-Citroën, one of the largest car manufacturer in Europe, with three academic partners – International Joint Research Unit Georgia Tech-CNRS (UMI 2958), French engineering school, Arts et Métiers ParisTech in Metz, and the Luxembourg Institute of Science and Technology.

The partners were chosen for their recognized expertise in innovative materials and processes, and robotics. Teams work on research projects that will define the automobile of the future.



INSTITUT LAFAYETTE

Platform of Technology Transfer in Optoelectronics

Institut Lafayette is a newly-created innovation platform located on the Technopole of Metz in France, adjacent to the building of Georgia-Tech Lorraine, the European campus of the Georgia Institute of Technology. Its mission is to simultaneously provide access to world-class facilities/expertise in advanced semiconductor materials/devices research and prototyping for innovations in optoelectronics, and to offer an array of technology transfer services that will accelerate and increase the efficiency of commercialization of these innovations.

The newly created institute is housed in a brand new 25,000 sq.ft. building comprised of offices, laboratories and a 5,000 sq.ft. cleanroom fully equipped with state-of-the-art characterization, fabrication, and pilot manufacturing equipment to enable innovations and training in optoelectronics and inorganic/organic semiconductors. Institut Lafayette aims at creating new business and research opportunities through extended partnerships with public and private organizations, especially in the area of energy and materials.



PROGRAMS & CONTRACTS

- ANR projects
- European Programs
- Industrial contracts
- CPER contracts
- CIFRE contracts
- NSF

SUPPORTS

Région **ALSACE**
CHAMPAGNE-ARDENNE
LORRAINE



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