IMEP-LAHC

Institute for Microelectronics, Electromagnetism and Photonics - Hyperfrequences and Characterisation Laboratory

UMR 5130 - CNRS / GRENOBLE-INP / UGA / USMB

Faculty: UFR Sciences and Mountain

PhD school: Electronics, Electrical Engineering, Automation, Signal Processing (EEATS)

FIELD OF TRANSVERSAL SKILLS

Technologies: Mechatronics, Energy conservation-Civil Engineering, Digital technologies

KEY WORDS

- *Microelectronics*
- *Microwaves*
- *Photonics*

SECTORS

- *Microelectronics and nanoelectronics devices*
- *Radiofrequency and millimetre waves*
- *Photonics, terahertz optoelectronics and opto-microwaves*

PRESENTATION

IMEP-LAHC was created by CNRS in 2007 as a result from the merger of the former IMEP and LAHC laboratories. In a partnership relation with the competitive cluster MINALOGIC and the innovation campus MINATEC, research activities at IMEP-LAHC are related to modern high technology electronics, including micro/nanoelectronics, high frequency signals and photonics.

RESEARCH THEMES

IMEP-LAHC's research is organized around 3 departments:

- **CMNE department: microelectronics and nanoelectronics devices**
  - Ultimate CMOS devices an SOI
  - Integrated nanostructures and nano-systems
  - Modelling and numerical simulation
  - Photovoltaic
  - MEMS
  - Superconducting electronics and digital magnetometry*
- **RFM department: Radiofrequency and millimetre waves**
  - Integrated millimetre waves circuits and systems
  - Antennas, RF circuits and systems
  - Characterization of materials for nano and microelectronics*
  - Passive components and circuits*
  - Development of microwave measurement systems*
  - Telecoms
- **PHOTO department: Photonics, Terahertz Optoelectronics and Opto-microwaves**
  - Terahertz optoelectronics*
  - Ultrafast Optoelectronics*
  - Integrated optics on Si and glass substrates
  - Optical sensors*
  - Opto-microwaves

** points out to topics especially studied at the Université Savoie Mont Blanc.*

KEY DATA**

- **64** researchers and professors
- **18** administrative and technical staff
- **85** PhD students and **18** post-doctoral students

** Academic year 2014-2015

SPECIFIC EQUIPMENT AND EXPERTISE

SPECIFIC EQUIPMENT

- Experimental facilities: clean rooms, characterization of electrical, optical, RF and microwaves properties and parameters, microelectronics, superconductivity…

Equipment at the Université Savoie Mont Blanc

- 4 femtosecond lasers (10 and 50 fs, amplified)
- Cryostats (4 K), high magnetic field (5 T)
- Microprobe high frequency testing systems
- Fast oscilloscopes (10 ps), spectrum analyzer
- Microelectronics and 3D integration
- Microwaves characterization
- Ultrafast optoelectronics and Terahertz
- Superconducting electronics
- Telecoms, antennas
- Lasers, Integrated optics, Electro-optics
- Sensors
- Photovoltaics
- MEMS

NETWORKS / PARTNERSHIPS

At the Université Savoie Mont Blanc

Industrial cooperations

• ST-Microelectronics (Crolles, France) • Thalès TAS (Elancourt, France); Thalès TRT (Palaiseau, France); Thalès Alénia Space (Toulouse, France) • CEA, LETI-Grenoble, Gramat (France) • CNES (Toulouse, France) • Kapteos (Montmélian, France) • Radiall (Voiron, France) • Pellenc ST (Pertuis, France) • Advantest (Japan) • Emcore (USA)

INTERNATIONAL RELATIONS

At the Université Savoie Mont Blanc

• Lomonosov Moscow State University (Russia) • Technological Warsaw University (Poland) • University of Ilmenau (Germany) • IPTH Iéna (Germany) • Center for Physical Sciences and Technology (Lithuania) • Tohoku University (Japan) • RIKEN Institute (Japan) • Universidad Carlos III Madrid (Spain) • Universitat Duisburg-Essen (Germany) • Istituto Nazionale di Ricerca Metrologica (INRIM), Torino (Italy) • Institute of Microelectronics (Singapore) • University of Stellenbosch (South Africa) • National Chiao Tung University (Taiwan) • University College London (GB)

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IMEP - LAHC MINATEC - 3 parvis Louis Néel - BP 257 - 38016 Grenoble cedex 1
USMB team: Domaine universitaire du Bourget-du-Lac - 73376 Le Bourget-du-Lac cedex
• **Tel** + 33 (0)4 79 75 84 73 • **Mail** dir-imeplahc@univ-smb.fr • **Website**: www.univ-smb.fr