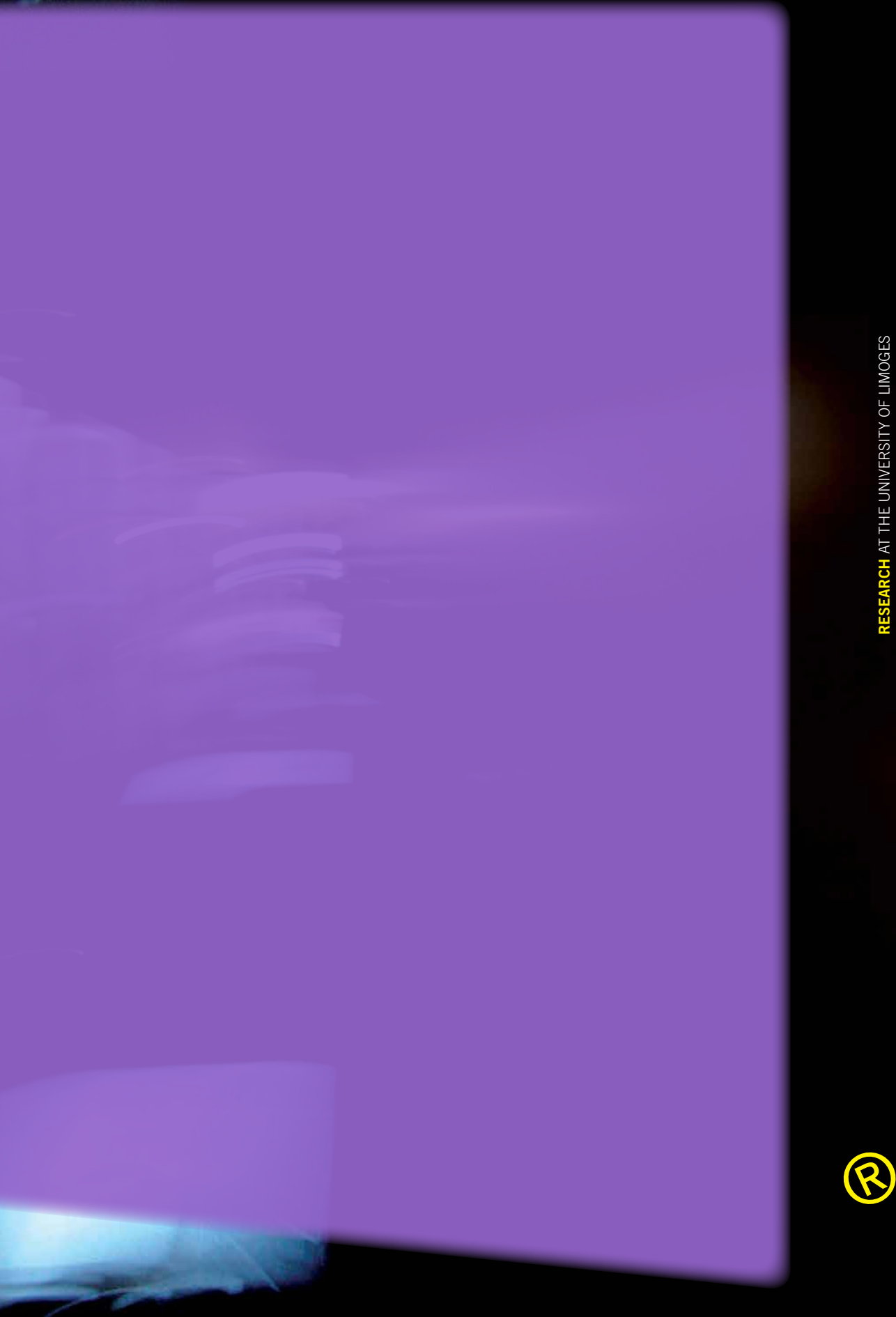






RESEARCH AT THE UNIVERSITY OF LIMOGES





RESEARCH AT THE UNIVERSITY OF LIMOGES





The research directory presents a panorama of research teams at the University of Limoges, their main activities, their collaborative efforts and partnerships. The assessment of these teams and the label assigned to them are the result of expertise by the French Ministry of Higher Education and Research and major research bodies (CNRS, INSERM, INRA).

Research is one of the flagship components of the identity of the University of Limoges, which accommodates more than 600 teacher-researchers and researchers in its laboratories. The research presented reflects the multidisciplinary of the fields of training. Research is organized into four primary institutes, which highlight centres of excellence and which reinforce their international recognition. Each of these institutes is organized around teams linked to national research organizations. Two of them, the Institute of Advanced Processes and Materials and Xlim, are central to the competitiveness clusters in the Limousin, as is the Sigma-Lim Labex, whose dynamism should benefit all research in the University of Limoges.

And last but not least, promotional, business-enterprise and skills and knowledge-transfer measures have gained great momentum over the past few years. They are part of a strategy that proclaims that the University is fully in line with society and, as such, is established as a natural socio-economic player for the region. The creation of the Agency for the Promotion of University Research in the Limousin (AVRUL) in January 2008 and, more recently, that of the Partnership Foundation in November 2011, are part of this determined drive. An unquestionable operational interface between the potential of expertise and scientific and technical equipment and facilities available in higher education in the Limousin and businesses that show an interest, the AVRUL is, henceforth, a partnership valuation tool for the work undertaken in its Laboratories. As regards the partnership Foundation, by exploring of new fields of knowledge, by stimulating the academic fabric, by encouraging an across-the-board approach and by enhancing international attractiveness, it places the University of Limoges at the very heart of a network of players, who have become sponsors, where projects for tomorrow may see the light of day and where change may be accompanied.

We hope that this directory will contribute to a better knowledge of the diversity of scientific activity at the University of Limoges, and will be a useful aid for all those who are interested in the research undertaken by our establishment and wish to communicate and/or collaborate with the various research teams.

Developing collaborations in the scientific community, promoting partnerships with socio-economic players through better recognition of skills and expertise, and helping students who seek training in and through research are the ambitious goals of this directory.

Hélène Pauliat

President of the University of Limoges



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UNIVERSITY OF LIMOGES

5 Teaching and Research Units

Faculty of Law and Economics,
Faculty of Medicine,
Faculty of Pharmacy,
Faculty of Letters and Humanities,
Faculty of Sciences and Technology

5 Institutes

IUT (University Institute of Technology),
IPAG (Institute for General Administration Preparation),
IAE (Institute for Business Administration)
IUFRM (University Institute of Teacher Training)
ILFOMER (Limousin Institute for Vocational Training in
Rehabilitation Professions)

1 National Engineering School

ENSIL (National Superior School of Engineers of Limoges)

2 Affiliated Engineering Schools

ENSCI (National Superior School of Industrial Ceramics)
3IL (Institute for IT Engineering of Limoges)

8 Doctoral Schools of Limousin Poitou-Charentes PRES

KEY RESEARCH FIGURES

4 Research Institutes:

XLIM
IPAM: Institute for Processes Applied to Materials
GEIST: Research Federation for Genomics, Environment,
Immunity, Health and Therapeutics
SHS: Science of Man and Society

23 research units

573 researchers and teacher-researchers

606 doctoral students

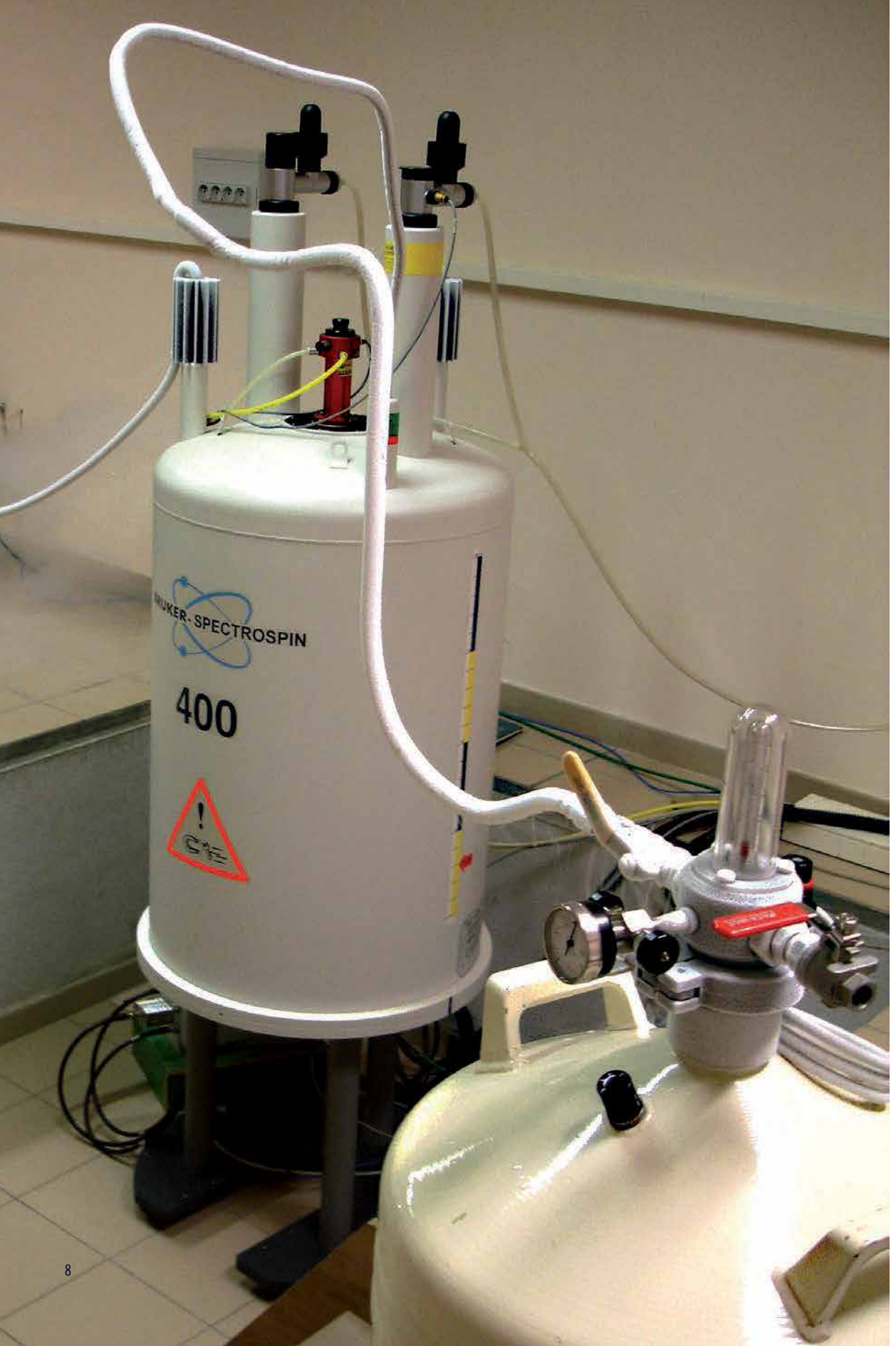
UNIVERSITY OF LIMOGES

A member of the Limousin, Poitou-Charentes PRES (Further Education and Research Centre), the University of Limoges is a European university. Its teaching and research work have placed it at the heart of a vast network of international relationships which provide it with opportunities to exchange, cooperate, and innovate with a wide range of universities throughout the world. Its priorities are naturally focused on French-speaking countries, but its influence is equally felt among the countries of Europe, South-East Asia, Latin America and North America.

It is a multidisciplinary establishment offering all major fields of study as well as recognized specialties, which are based on key areas of its research activities: Optics and Microwaves, Cryptography, Surface Treatments, Ceramic Materials, Chemistry and the Environment, Environmental Law, Genomics, Immunology, Pharmacology, Semiology, Banking and International Finance, etc.

ACKNOWLEDGED RESEARCH TEAMS

The University of Limoges is the main research, development, and innovation body in the Limousin. Its scientific activities have developed over the last few years in the form of theme-based institutes. This organization and the resource pooling which has resulted have enabled the establishment to acquire large-scale equipment and to structure joint facilities and technological platforms. It accommodates over 600 teacher-researchers and researchers in its four institutes and 23 research units. Mindful of its multidisciplinary nature, the University gives priority to scientific excellence and benefits from the presence and dynamism of a large number of highly-respected scientists and national and international research teams. They contribute to innovation and the development of knowledge in a wide variety of disciplines, from the hard sciences to life sciences and to human and social sciences.



A RESEARCH ORGANIZATION IN PERPETUAL MOTION

This new research directory includes major changes for the University of Limoges. A key structuring phase was initiated as part of new contractual agreements with the State, which took effect in January 2012, following a period of reflection that involved all members of University staff. The thematic perimeters of several laboratories have changed, 3 teams have been created, others have grouped together, to ensure optimal efficiency and visibility. This significant undertaking was very positively acknowledged by the AERES (French Evaluation Agency for Research and Higher Education) and by the French Supervisory Ministry.

Moreover, the SigmaLim Laboratory of Excellence, financed within the “Investissements d’Avenir” (Investments for the Future) calls for project framework, involves the XLim and IPAM Institutes in internationally-reaching joint actions. In its active operating phase, plans are afoot to incorporate contributions from the SHS (Human and Social Sciences) and GEIST (Research Federation for Genomics, Environment, Immunity, Health and Therapeutics) Institute teams, within its innovation centre.

The Biology-Health Unit also provides a key challenge for the future in terms of facilities and in terms of research. It will ensure greater visibility to research teams from the health sector and will play a role in developing relationships between clinical and university research.

Other projects focusing on structuring the SHS Institute are currently in their maturation phase. Some of them lean on the activity of the University of Limoges’ Partnership Foundation, by establishing innovative thematic chairs as part of strong partnership dynamics.

THEMATIC DOCTORAL TRAINING

The Thematic Doctoral School (EDT) oversees all courses of study, training and research that lead to the defence of a doctoral thesis within an average of 3 years. It holds a privileged position in coordinating teaching and research teams that ensure scientific accompaniment/guidance for doctoral students. The EDT harmonizes scientific and professional training throughout the doctoral course of study. Under the umbrella of the PRES (Further Education and Research Centre), which groups together the Universities of La Rochelle, Limoges and Poitiers, the ENSMA of Poitiers (National School for Higher Mechanics and Aeronautics Studies) and the ENSCI of Limoges (National School for Higher Industrial Ceramics Studies), 8 theme-based Doctoral Schools were created.

- Information Science and Engineering, Mathematics (S2IM)
- Materials, Mechanical, Energy, and Aeronautical Science and Engineering (SIMMEA)
- Environmental Sciences (“Gay Lussac”)
- Biology, Health (“Biohealth”)
- Law and Political Science (“Pierre Couvrat”)
- Humanities, Thought, Arts and History
- Societies and Organizations
- Cognition, Behaviour, Language(s)

On each Limousin Poitou-Charentes PRES site a Doctoral College federates assistance and support to the Doctoral Schools, pools together material, human, and financial resources and focuses on 5 missions:

- Administratively manage doctoral students’ curriculums from inscription through to the viva,
- Provide an interface between the different sites and the Doctoral Schools (e.g. harmonizing activities, organizing seminars),
- Promote the internationalization of doctoral training,
- Organize the professionalization of doctoral students through training, promote the doctorate, ensure doctoral graduate follow-up,
- Budget management of financial resources.



The AVRUL

AN AGENCY FOR PROMOTING RESEARCH

To ensure efficiency and to better coordinate the systems related to promoting research in the Limousin, the Agency for the Promotion of University Research in the Limousin (AVRUL) was created under the initiative of the University of Limoges and the Limousin Regional Council in 2008. Today, it is an indispensable innovation partner. The aim of the AVRUL is to actively participate in promoting public research. It applies to research units as well as public authorities and regional, national and international businesses who wish to collaborate with our University's laboratories. It is the interface between the research world and the socio-economic world.

>>>

The AVRUL's mission is to identify projects with great potential in the University laboratories and in the Engineering Schools, to validate them and to support their development and maturation. With its «Incubator» department, the AVRUL supports the creation of innovative activities by incubating business start-up projects derived from University laboratories and external projects that need to be backed by a public laboratory. It advocates the spirit of entrepreneurship. The AVRUL also aims to make it easier for companies (that exist or are starting up) to access regional scientific and technological resources and to organize sustainable partnerships between the University and the whole economic fabric of the Region.

- It analyses inventions and creations which can be promoted by the socio-economic world through a system that accompanies project maturation. It helps teacher-researchers from the laboratories promote their research work.
- It identifies partners, stimulates collaborative projects between the socio-economic world and the University, negotiates agreements and helps parties draw up and manage conventions.
- It optimizes University intellectual property management (patents, licences, etc.), specifically with a view to regional economic development.
- It advises and accompanies business start-ups by taking research results into account.
- It participates in the transfer of skills and/or technology that stem from the University within the framework of a close partnership with existing technology transfer centres.
- It supports the development of technological platforms.

In its mission, the AVRUL relies on Limousin structures that are in contact with organizations such as OSEO (Assistance and financial support for development), Limousin Expansion, Limousin RDT (Technology Development Network), Ester Technopole (Scientific and Technological Space for Exchange and Research), the CRCI (Regional Chamber of Commerce and Industry), the competitiveness clusters and the Technology Transfer Centres.



THE NEW RESEARCH STRUCTURE AT THE UNIVERSITY OF LIMOGES

RESEARCH SERVICE

Hôtel de l'Université
33, rue François Mitterrand
BP 2304
87 032 Limoges cedex 1
Tel: +33 (0)5 55 14 91 49

KEY RESEARCH FIGURES

4 Research Institutes
8 Doctoral Schools
22 certified teams
573 lecturers - researchers and researchers
606 Doctoral students

ED521*: Information Science and Engineering

☎ +33 (0)5 55 45 76 74
HS: Raymond Quéré

ED522: Materials, Mechanical, Energy and Aeronautical Science and Engineering

☎ +33 (0)5 55 45 76 74
HS: Armelle Vardelle

ED523: Gay Lussac “Environmental Sciences”

☎ +33 (0)5 55 45 76 74
HS: Hubert Bril

ED524*: Biology and Health Sciences «Biohealth»

☎ +33 (0)5 55 45 76 74
HS: Véronique Blanquet

INSTITUTES

XLIM

UMR CNRS 7252
LABEX Σ -Lim
Director: Dominique Cros
☎ +33 (0)5 55 45 72 50
dominique.cros@xlim.fr

LABORATORIES

DMI (Mathematics and Computer Sciences)
Director: Samir Adly
☎ +33 (0)5 87 50 67 71
samir.adly@xlim.fr

C2S2 (High-Frequency Components, Circuits, Signals and Systems)
Director: Raymond Quéré
☎ +33 (0)5 55 45 77 34
raymond.quere@xlim.fr

OSA (Waves and Associated Systems)
Director: Thierry Monédière
☎ +33 (0)5 55 45 72 44
thierry.monediere@xlim.fr

MINACOM (Micro and Nanotechnologies for Optoelectronic and Microwave Components)
Director: Valérie Madrangeas
☎ +33 (0)5 55 45 72 63
valerie.madrangeas@xlim.fr

Photonics
Director: Vincent Couderc
☎ +33 (0)5 55 45 73 33
vincent.couderc@xlim.fr

SIC (Signal, Image and Communication)
Director: Christine Fernandez
☎ +33 (0)5 49 49 65 67
christine.fernandez-maloigne@xlim.fr

IPAM

Institute for Processes Applied to Materials
LABEX Σ -Lim
Director: Eric Champion
☎ +33 (0)5 87 50 23 08
direction-ipam@unilim.fr

SPCTS (Science of Ceramic Processes and Surface Treatments)
UMR CNRS 7315
Director: Thierry Chartier
☎ +33 (0)5 87 50 23 10
thierry.chartier@unilim.fr

GEMH (Heterogeneous Materials Research Group)
EA 3178
Director: David Smith
☎ +33 (0)5 87 50 25 50
david.smith@unilim.fr

EIST *

enomics, Environment, Immunity, Health and Therapeutics
FR 3503
Director: Jean Feuillard
☎ +33 (0)5 55 43 58 48
jean.feuilleard@unilim.fr

CRIBL (Control of the B Cell Immune Response and Lymphoproliferations)
UMR CNRS 7276
Director: Michel Cogné
☎ +33 (0)5 55 43 58 48
michel.cogne@unilim.fr

Animal Molecular Genetics Unit
UMR INRA 1061
Director: Abderrahman Maftah
☎ +33 (0)5 55 45 76 84
abderrahman.maftah@unilim.fr

Pharmacology of Immunosuppressive Drugs and of Transplantation
INSERM UMR-S 850
Director: Pierre Marquet
☎ +33 (0)5 55 43 58 95
pierre.marquet@unilim.fr

Anti-microbials: molecular supports of resistances and therapeutic innovations
INSERM UMR-S 1092
Director: Marie-Cécile Ploy
☎ +33 (0)5 55 43 59 74
marie-cecile.ploy@unilim.fr

HAVAE (Disability, Activity, Aging, Autonomy and the Environment)
EA 6310
Director: Jean-Christophe Daviet
☎ +33 (0)5 55 +33 (0)5 65 16
jean-christophe.daviet@unilim.fr

Myelin Maintenance and Peripheral Neuropathies
EA 6309
Director: Benoît Funalot
☎ +33 (0)5 55 +33 (0)5 65 60
benoit.funalog@unilim.fr

Research Federations

MIRES (Research Federation for Mathematics and their Interactions, Images and Digital Information, Networks and Security)*
FR 3423
Triple-sites: Limoges-Poitiers-La Rochelle
HS: Raymond Quéré
raymond.quere@unilim.fr

MATV2L (MATerials Val de Loire - Limousin)
FR 3469
Triple-sites: Orléans-Limoges-Tours
HS: Thierry Chartier
thierry.chartier@unilim.fr

FR-EDD Research Federation for the Environment and Sustainable Development
FR 3097
Triple-sites: La Rochelle-Limoges-Poitiers
HS: Vincent Sol
vincent.sol@unilim.fr

ED088: Pierre Couvrat
“Law and Political Science”
① +33 (0)5 55 45 76 36
HS: Clotilde Deffigier

ED525: Letters, Thought, Arts
and History “Civilization and
Literature from Antiquity to
today”
① +33 (0)5 55 45 76 36
HS: Martine Yvernault

ED526*: Societies
and Organizations
① +33 (0)5 55 45 76 36
HS: Choukri Ben Ayed

ED527: Cognition,
Behaviour,
Language(s)
① +33 (0)5 55 45 76 36
HS: Isabelle Klock-Fontanille

SHS
Science of Man and Society
Director: Philippe Depreux
① +33 (0)5 55 14 92 98
philippe.depreux@unilim.fr

NET (Tropical Neuroepidemiology)
INSERM UMR-S 1094
Director: Pierre-Marie Preux
① +33 (0)5 55 43 59 61
pierre-marie.preux@unilim.fr

Cellular Homeostasis and Pathologies
EA 3842
Director: Marie-Odile Jauberteau
① +33 (0)5 55 43 58 68
m-o.jauberteau-marchan@unilim.fr

LCSN (Laboratory of Chemistry
of Natural Substances)
EA 1069
Director: Vincent Sol
① +33 (0)5 55 45 74 90
vincent.sol@unilim.fr

GRESE (Research Group on Water, Soil
and the Environment)
EA 4330
Director: Michel Baudu
① +33 (0)5 55 45 73 67
michel.baudu@unilim.fr

Applied Medical Research
Constellation
Director: Catherine Yardin
① +33 (0)5 55 43 59 20
catherine.yardin@unilim.fr

CeReS (Research Centre for
Semiotics)
EA 3648
Director: Jean-François Bordron
① +33 (0)5 55 43 55 97
jean-francois.bordron@unilim.fr

FRED (Francophonie, Education and
Diversity)
EA 6311
Director: Dominique Gay-Sylvestre
① +33 (0)5 55 43 56 00
dominique.gay-sylvestre@unilim.fr

CRIHAM (Interdisciplinary Research
Centre for History, History of Art and
Musicology)
EA 4270
Two-sites Poitiers-Limoges
Site Director: Philippe Depreux
① +33 (0)5 55 43 56 00
philippe.depreux@unilim.fr

GEOLAB (Physical and Environmental
Geography Laboratory)
UMR CNRS 6042 two-sites
Clermont-Ferrand 2-Limoges
Site Director: Frédéric Richard
① +33 (0)5 55 43 56 02
frederic.richard@unilim.fr

EHIC (Human Spaces and
Cultural Interactions)
EA 1087
Two-sites Limoges- Clermont-Ferrand 2
Director: Bertrand Westphal
① +33 (0)5 55 43 56 00
bertrand.westphal@unilim.fr

OMIJ (Observatory of Institutional and
Juridical Mutations)
EA 3177
Director: Hélène Pauliat
① +33 (0)5 55 14 90 05
helene.pauliat@unilim.fr

LAPE (Laboratory of Economic
Analysis and Forecasting)
EA 1088
Director: Amine Tarazi
① +33 (0)5 55 14 92 36
amine.tarazi@unilim.fr

CREOP (Research Center for
Entreprise, Organizations
and Heritage)
EA 4332
Director: Marcel Bayle
① +33 (0)5 55 14 92 23
marcel.bayle@unilim.fr

GRESO (Center West Sociological
Research and Study Group)
EA 3815 Two-sites Poitiers-Limoges
Site Director: Frédéric Neyrat
① +33 (0)5 55 43 56 00
frederic.neyrat@unilim.fr

CNRS: National Centre for
Scientific Research
EA: Host Research Team
ED: Doctoral School
FR: Research Federation
INRA: National Institute for
Agronomic Research
INSERM: National Institute for Health and Medical
Research
HS: Head of Site
UMR: Joint Research Unit
* Doctoral School or Research Federation backed
by the University of Limoges

Federation for the Study of
Contemporary Civilizations
FR 4227
Quadruple-sites: Poitiers-Tours-
Limoges-La Rochelle
HS: Said Ouaked
said.ouaked@unilim.fr

Federation for the History of
Law of the Limousin-Poitou-
Charentes PRES
FR 4228
Triple-sites: Poitiers-Limoges-La
Rochelle
HS: Hélène Pauliat
helene.pauliat@unilim.fr

Federation Gaston Berger
FR 4221
Quintuple-sites: Orléans-
Tours-Poitiers-la Rochelle-
Limoges
HS: Marcel Bayle
marcel.bayle@unilim.fr

Our Partners

Conseil Régional du Limousin (Limousin Regional Council),
Conseil Général de la Haute-Vienne (Haute-Vienne General Council),
CNRS,
INRA,
INSERM,
CHU (University Hospital) of Limoges
ELOPSYS Competitiveness Cluster,
European Ceramics Cluster
Cancer-Bio-Health Competitiveness Cluster,
Viameca Competitiveness Cluster,
Viandes et Produits Carnés (Innoviandes) Competitiveness Cluster,
Smart Electricity Competitiveness Cluster
Universities of Clermont-Ferrand I & II,
University of Poitiers,
University of La Rochelle,
University of Tours,
ENSCI,
ENSMA,
3IL.



RESEARCH INSTITUTES AND THEIR UNITS



XLIM

XLIM (UMR CNRS 7252)

Faculté des Sciences et Techniques

123 Av. Albert Thomas

87060 Limoges Cedex

FRANCE

Tel: +33 (0)5 55 45 72 50

Director: Dominique CROS

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Website: <http://www.xlim.fr>

2012



XLIM

is a Joint Research Unit of the University of Limoges / CNRS which brings together a group of over 400 teacher-researchers, CNRS researchers and doctoral students in the fields of computer science, mathematics, optics, electromagnetism and electronics. The laboratory is the core of the ELOPSYS Competitiveness Cluster. Since April 2011, in partnership with the SPCTS laboratory (Science of Ceramic Processes and Surface Treatments), XLIM is the project leader for the “Sigma-Lim” laboratory of excellence. “Ceramic materials and components that are specifically related to integrated, secure, smart communicating systems”.

XLIM's research disciplines focus on six departments where research projects, which are clearly identified in specific fields of excellence are implemented:

- Techniques of symbolic, digital and optimized calculation applied to physics, of Information security using cryptographic and coding techniques, realistic image rendering and mechatronics;
- Non-linear optics, systems based on new-generation fibre optics and high-resolution imaging techniques;
- Antennas, wireless networks, electromagnetic compatibility, pulsed radars and bioelectromagnetic (“living”) wave interactions;
- Design of radiofrequency and microwave front ends, telecommunications and radar systems, study of optoelectronic and wireless systems as well as telecommunications-related coding techniques;
- MEMS in optical and microwave systems, organic electronics and modelling methods and design of electromagnetic structures;
- Geometric modelling, image processing and analysis and wireless telecommunications.

This research work takes advantage of the PLATINOM platform which gives researchers an access to technological equipment for developing microwave and optical structures (white room and drawing tower) and to an extensive repository of instruments for the experimental characterization of electronic, photonic, electromagnetic, and radiation devices.

All these activities provide the laboratory with the opportunity to focus its research fields on upstream and more applied themes, working hand-in-hand with a wide variety of partners and collaborative teams.

XLIM staff are also involved in training and participate in five of the University of Limoges Master Degrees, which cover all the research fields of the laboratory.



DMI

Department of Mathematics and Computer Science

**RESEARCH
THEMES >**

Computer Algebra
Cryptography Coding
Optimization, Variational Analysis
Information Security
Realistic Image Rendering
Number Theory

KEYWORDS >

Computer Algebra
Cryptography
Secure Devices
Variational Analysis
Realistic Rendering
Number Theory

DMI

Department of Mathematics and Computer Science

SERVICES PROVIDED

Advice, expertise, training

FIELDS OF APPLICATION

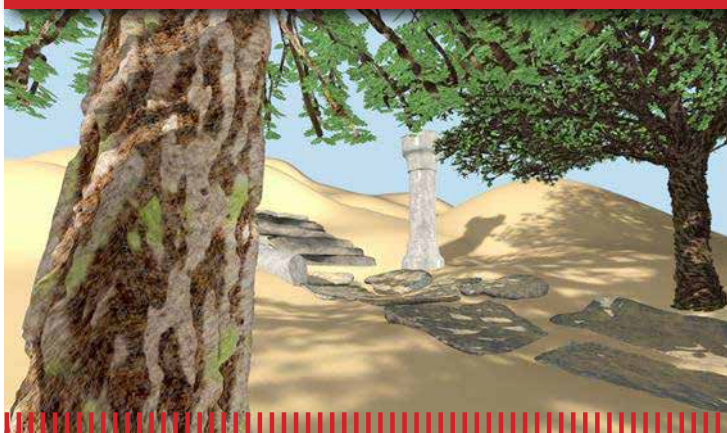
ICT, electronics, telecommunications,
energy, environment, materials

EQUIPMENT / TECHNICAL RESOURCES

Computer equipment, mathematics
and computer science documentation
service

Competitiveness Clusters with which the laboratory is associated:

ELOPSYS - VIAMECA

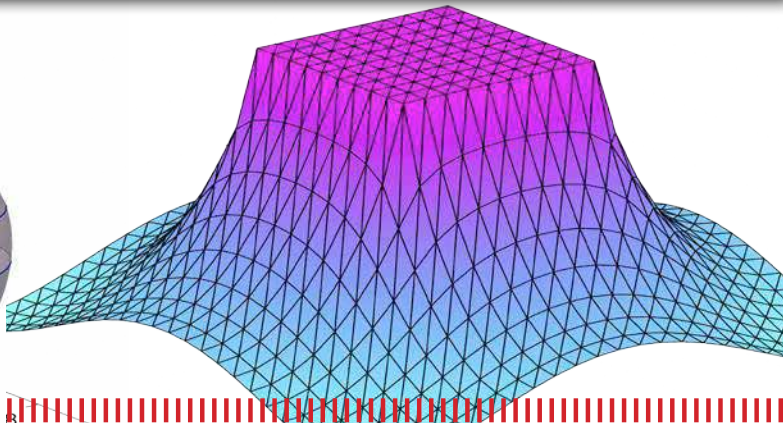
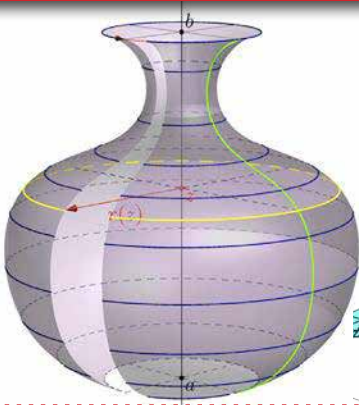


The DMI is the department that carries out the University of Limoges' Mathematics and Computer Science research. The DMI's originality lies in its multidisciplinary organization and in its cross-sectoral approach within the XLIM laboratory. Its scientific output provides a fine balance between fundamental contributions, applications and interactions.

The DMI is organized around six research teams:

- Computer Algebra (CA): Algorithms of differential and functional equations, Algebraic curves and systems, Numeric-symbolic computation, Numerical linear algebra, Structured matrices.
- Modelling, Optimization, Dynamics (MOD): Numerical and non-smooth optimization, Variational and non-smooth analysis, non-regular dynamic systems, PDE and optimal mass transfer.
- Information Protection, Cryptology and Coding (IPCC): Error correcting codes, Symmetric encryption and pseudo-random generators, Code-based cryptography, Protection of privacy.
- Realistic Image Synthesis (RIS): Antialiasing and beam emission, Realistic rendering, 2D and 3D texture synthesis, Representation of natural phenomena.
- Smart Secure Device (SSD): Physical and logical security for operating systems and algorithms for embedded systems.
- Number Theory (NT): Local and global algebraic theories of numbers, Analytical theory of Archimedean and Ultrametric numbers.

The DMI is intensely involved in cross-sector programmes (ROI (Radar and Optical Imaging) and CAD (Computer-Aided Design)) in partnership with the MIRES Research Federation (Research Federation for Mathematics and their Interactions, Images and Digital Information, Networks and Security) and with the Sigma-LIM Labex.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 44
Other researchers: 2 post-doctoral students,
3 ATER (assistant associate professors)
HDR (accredited to direct research): 21
Doctoral students in 2011-2012: 32
Engineers, technicians: 2 Research Engineers
Administrative agents: 2
Dissertations defended (2008-2011): 32
Current national projects: 3 ANR (French National Research Agency)

ECONOMIC ADDED VALUE

(2008-2011)

Number of patents filed: 4
Number of industrial or research agreements with major organizations: 4
Seminars, conferences: 1 national and 6 international

PARTNERSHIPS

Active National University Partnerships:

Poitiers, Montpellier II, Toulouse, Paris VI, Avignon, Marseille II, Orléans, Bordeaux I, Réunion Island
LVR Orléans-Bourges,
INRIA: Rocquencourt, Lorraine, Sophia-Antipolis, Rhône-Alpes
INSA Lyon, LIRIS Lyon, LSIIT Strasbourg, LCPC Paris, INRETS Paris, ENSTA Paris, LIX Palaiseau, Rennes, Lille..

Current International University Partnerships:

Moscow (Russia). London, Nottingham (United Kingdom). Pisa (Italy). Ljubljana (Slovenia). Elche, Alicante, Barcelona, Santander, Gerona, Valladolid (Spain). Marrakech, Rabat, Fez, Meknes (Morocco). Madison Wisconsin, Tallahassee Florida (USA). Athens (Greece). Bamako (Mali). Lausanne (Switzerland). Berlin (Germany). USTHB Algiers, Blida (Algeria). Montreal, Sherbrooke, Waterloo (Canada). Kishinev (Moldavia).

National Industrial Partnerships:

GEMALTO, CERADROP (technology transfer), INSIDE, THALES, EADS.

Research Groups:

Number Theory Structuring Research Group.
Information, Signal, Images and Vision Research Group.
Mathematics and Computer Science Research Group
Mathematical Optimization and Applications Research Group.

Research Federation (RF):

MIRES.

Department of Mathematics and Computer Sciences (DMI)

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Director
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Parent Institute
XLIM (UMR CNRS 7252)

Doctoral School
ED521: Information Science
and Engineering

s2i.ed.univ-poitiers.fr



SCIENTIFIC PRODUCTION OF RESEARCH TEAM

(2008-2011)

Website publication: hal.archives-ouvertes.fr/XLIM-DMI

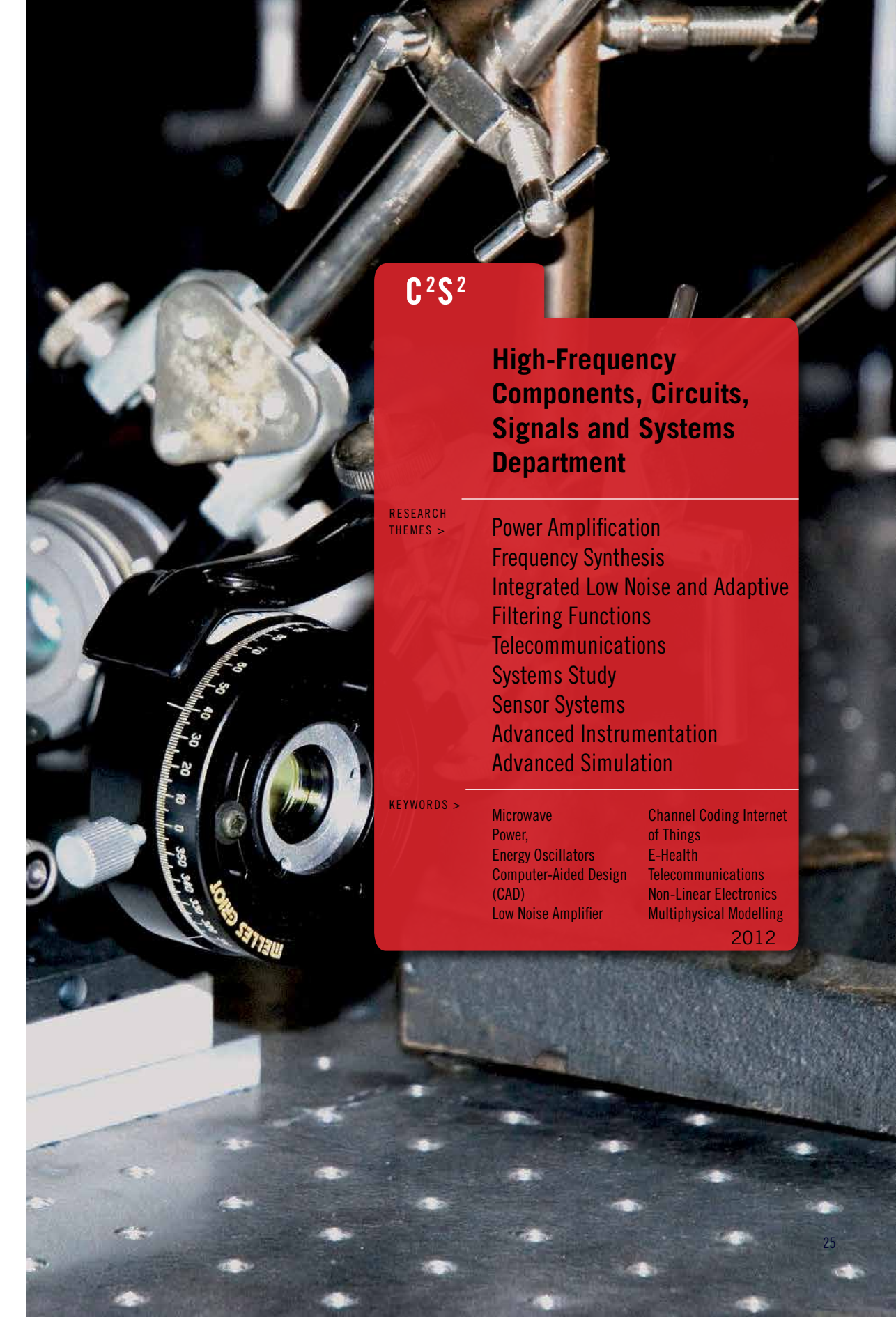
International articles: 119

Conference presentations: 120

Others: 15 chapters in a variety of works

Major publications and/or patents over the last 5 years

- S. Adly, A. Hantoute and M. Théra, Nonsmooth Lyapounov "Functions for evolution variational inequalities, Nonlinear Analysis, Theory Methods and Applications" 75, p. 985-108 (2012).
- P. Armand, J. Benoist, E. Bousquet, "Chebyshev approximation of the null function by an affine combination of complex exponential functions", Journal of Approximation Theory, 162: 2004-2020, (2010).
- M. A. Barkatou, T. Cluzeau, C. El Bacha, "Simple forms of higher-order linear differential systems and their applications in computing regular solutions". J. Symb. Comput. (JSC) 46(6):633-658 (2011).
- A. Poteaux, M. Rybowic: "Good reduction of Puiseux series and applications". J. Symb. Comput. 47(1): 32-63 (2012).
- C. Clavier, B. Feix, G. Gagnerot, M. Roussellet and V. Verneuil, "Improved Collision-Correlation Power Analysis on First Order Protected AES, Cryptographic Hardware and Embedded Systems – CHES" 2011/, LNCS vol. 6917, p. 49-62, Springer, (2011).
- G. Bouffard, J. Iguchi-Cartigny, J.-L. Lanet, "Combined Software and Hardware Attacks on the Java Card Control Flow", CARDIS'11, Leuven, Belgium, 14-16 September 2011.
- S. Mérillou and D. Ghazanfarpour, "A Survey of Aging and Weathering Phenomena in Computer Graphics", Computers & Graphics, vol. 32, No. 2, p. 159-174 (2008).
- E. Darles, B. Crespín, D. Ghazanfarpour and J.F. Gonzato, "A Survey of Ocean Simulation and Rendering Techniques in Computer Graphics", Computer Graphics Forum, vol. 30, No. 1, p. 43-60 (2011).
- F. Arnault, T.P. Berger, B. Pousse, "A matrix approach for FCSR automata, Cryptography and Communication", v.3 n.2, p.109-139 (2011).
- C. M. Aguilar, P.L. Cayrel, P. Gaborit, F. Laguillaumie, "A New Efficient Threshold Ring Signature Scheme Based on Coding Theory", IEEE Transactions on Information Theory v.57 n.7, p.4833-4842 (2011).
- B. Bensebaa, A. Movahhedi, A. Salinier, "The Galois group of $X^p + aX^{p-1} + a, J$ ". Number Theory, 129, No. 4, p. 824-830 (2009).
- A. Mouhib, A. Movahhedi, "Cyclicity of the unramified Iwasawa module", Manuscripta Math. 135, No. 1-2, p. 91 - 106 (2011).



C²S²

High-Frequency Components, Circuits, Signals and Systems Department

RESEARCH
THEMES >

Power Amplification
Frequency Synthesis
Integrated Low Noise and Adaptive
Filtering Functions
Telecommunications
Systems Study
Sensor Systems
Advanced Instrumentation
Advanced Simulation

KEYWORDS >

Microwave
Power,
Energy Oscillators
Computer-Aided Design
(CAD)
Low Noise Amplifier

Channel Coding Internet
of Things
E-Health
Telecommunications
Non-Linear Electronics
Multiphysical Modelling

2012



High-Frequency Components, Circuits, Signals and Systems Department

INDUSTRIAL APPLICATIONS

Active Electronically Scanned Array (AESA) radar
Telephony base stations
Automotive radars
Optical fibre communications
4G mobile receivers
Electronic Design Automation (EDA)
Radio frequency measurements
Sensor networks for power management

SERVICES PROVIDED

Characterization, training, modelling, research and development

FIELDS OF APPLICATION

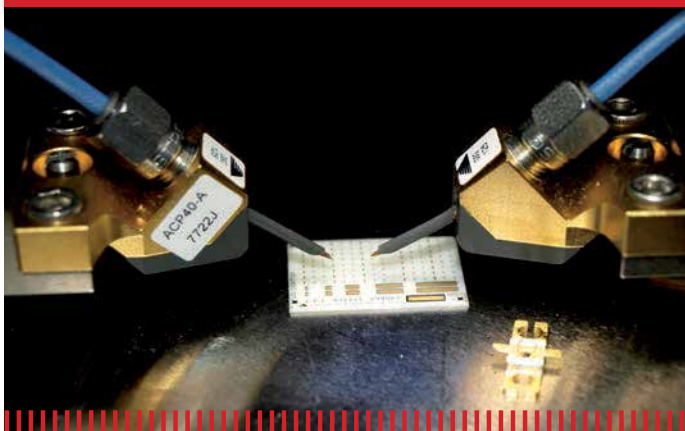
Electronics, telecommunications, power

EQUIPMENT / TECHNICAL RESOURCES

RF measurements
S Parameters (100 Hz-65 GHz)
Temporal RF power measurements (20 W)
LF noise measurements (1 Hz, 10 MHz)
Simulation software (electrical, thermal, device physics, electromagnetic)
Sensor network development tool

Competitiveness Clusters with which the laboratory is associated :
ELOPSYS

Joint laboratories:
MITIC, AXIS, NXL



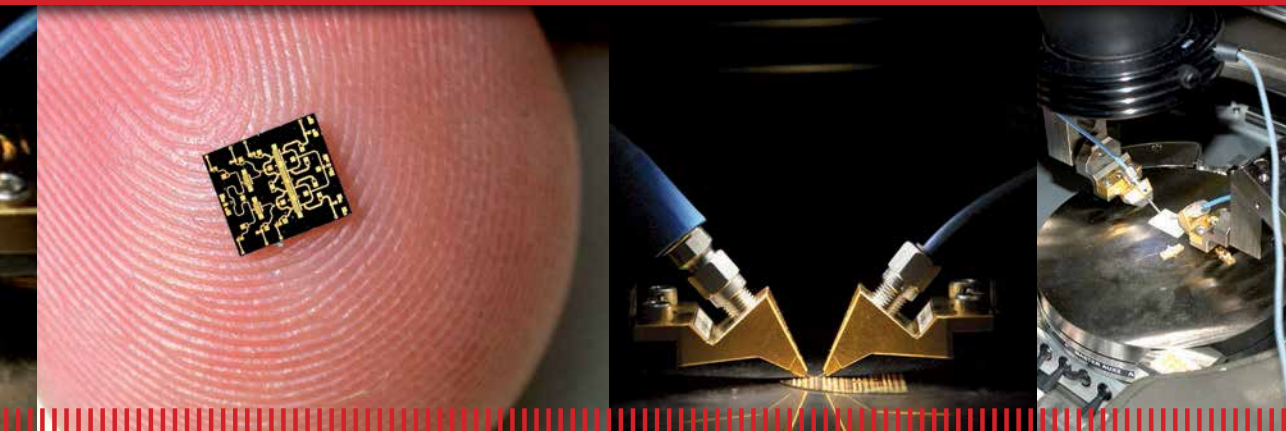
The C2S2 department is organized around 4 main themes that consolidate the various skills and expertise of the department researchers nurtured within the 4 teams, which are the mainsprings for scientific project development.

- Power amplifiers
- Low noise receivers and frequency sources
- Advanced modelling and simulation
- Telecommunications systems

The activities of these teams are defined based on 7 scientific projects. These projects deal with the architecture of communications systems and focus more specifically on RF terminals and the optimization of the physical layers of wireless and optical telecommunications systems. They all require the use of the skills and expertise developed within the various teams.

- High energy-efficient linear power amplification
- Advanced RF instrumentation
- Wideband and frequency-agile integrated transmitters-receivers
- Nanometric-scaled component and circuit modelling
- Complex electronic system and circuit simulation
- Optimization of the physical layer of wireless and optical communications networks
- Communication systems and networks for
- E-health.

All these projects benefit from partnerships with academic and industrial laboratories and from the backing of national and European projects. Furthermore, long-term collaboration with our industrial partners (joint laboratories) provides us with access to GaN technology (MITIC), CMOS technology (NXL) and space technology (AXIS).



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 19
 EPST and EPIC researchers: 3
 Other researchers: 4
 HDR (accredited to direct research): 14
 Doctoral students in 2011-2012: 36
 Engineers, technicians: 2
 Administrative agents: 2
 Dissertations defended (2008-2011): 45
 Current national projects: 5 ANR (French National Research Agency), 2 FUI (Single Interministerial Fund),
 2 CNES (National Centre for Space Studies), 3 Limousin Region
 Current European projects: 2 FP7 (Seventh Framework Programme), 1 EDA, 1 EURIPIDES, 2 ESA (European Space Agency)
 Others: 3 joint laboratories (MITIC with III-V Lab, AXIS with Thales Alenia Space, NXL with NXP)

ECONOMIC ADDED VALUE

(2008-2011)

Number of patents filed: 5
 Number of industrial or research agreements with major organizations: 36

PARTNERSHIPS

Active National University Partnerships:

IEMN (Lille), IREENA (Nantes), FEMTO (Besançon), ENST Brittany, INSA (Toulouse), LAAS (Toulouse).

Current International University Partnerships:

University of Padova (Italy), University of Turin (Italy), IMEC (Belgium), Oersted University (Denmark), Chalmers University (Sweden), University of Bilbao (Spain), Ohio State University (Columbus, Ohio USA), University of Rome (Italy), University of L'Aquila (Italy), University of Colorado, Boulder USA.

National Industrial Partnerships:

Thales, Freescale, Orange Labs, NXP, UMS-France, CNES, DGA.

International Industrial Partnerships:

Selex SI (Italy), UMS (Germany), ESA, Fraunhofer Institute Freiburg (Germany).

Research Federation:

MIRES

High-Frequency Components, Circuits, Signals and Systems Department (C2S2)

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Parent Institute

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Doctoral School

ED 521 Information Science
and Engineering

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SCIENTIFIC PRODUCTION OF THE RESEARCH TEAM (2008-2011)

Website publication: hal.archives-ouvertes.fr/XLIM-C2S2

International articles: 26

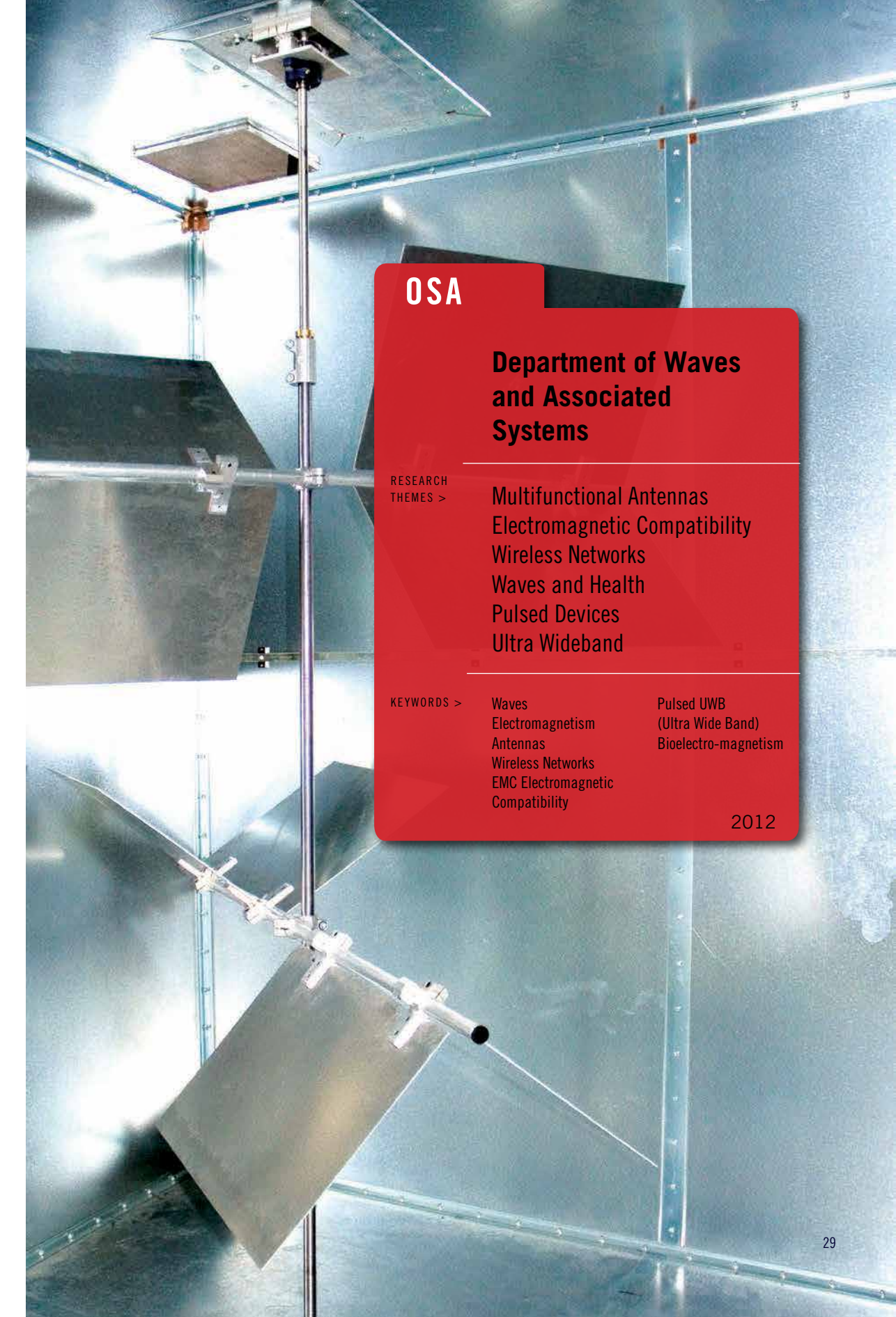
Articles: 16 in peer-reviewed journals

Book chapters: 1

Conference presentations: 41

Major publications and/or patents over the last 5 years

- Ramadan, A.; Reveyrand, T.; Martin, A.; Nebus, J.-M.; Bouysse, P.; Lapierre, L.; Villemazet, J.-F.; Forestier, S., "Two-Stage GaN HEMT Amplifier With Gate-Source Voltage Shaping for Efficiency Versus Bandwidth Enhancements", *Microwave Theory and Techniques, IEEE Transactions on*, vol. 59, No. 3, p. 699-706, March 2011
- Ngoya, E.; Quindroit, C.; Nebus, J.M., "On the Continuous-Time Model for Nonlinear-Memory Modeling of RF Power Amplifiers", *Microwave Theory and Techniques, IEEE Transactions on*, vol. 57, No. 12, p. 3278-3292, Dec. 2009
- Aouchahine, M.; Saleh, A.; Neveux, G.; Reveyrand, T.; Teyssier, J.-P.; Rousset, D.; Barataud, D.; Nebus, J.-M., "Broadband Time-Domain Measurement System for the Characterization of Nonlinear Microwave Devices With Memory", *Microwave Theory and Techniques, IEEE Transactions on*, vol. 58, No. 4, p. 1038-1045, April 2010
- Sahuguede, S.; Julien-Vergonjanne, A.; Cances, J.P., "Beat Noise Compensation in OCDMA Systems Using Soft Decoding Based FEC", *Communications, IEEE Transactions on*, vol. 59, No. 5, p. 1400-1410, May 2011
- Cances, J.; Meghdadi, V., "Optimized low density parity check codes designs for half duplex relay channels", *Wireless Communications, IEEE Transactions on*, vol. 8, No. 7, p. 3390-3395, July 2009
- Quinsat, M.; Gusakova, D.; Sierra, J. F.; Michel, J. P.; Houssameddine, D.; Delaet, B.; Cyrille, M.-C.; Ebels, U.; Dieny, B.; Buda-Prejbeanu, L. D.; Katine, J. A.; Mauri, D.; Zeltser, A.; Prigent, M.; Nallatamby, J.-C.; Sommet, R., "Amplitude and phase noise of magnetic tunnel junction oscillators", *Applied Physics Letters*, vol. 97, No. 18, p. 182507-182507-3, Nov 2010
- Martin, A.; Reveyrand, T.; Campovecchio, M.; Aubry, R.; Piotrowicz, S.; Floriot, D.; Quere, R., "Balanced AlGaIn/GaN HEMT cascode cells: design method for wideband distributed amplifiers", *Electronics Letters*, vol. 44, No. 2, p. 116-117, January 17 2008
- Bacque, L.; Bouysse, P.; Rebernak, W.; Poumier, C.; Lapierre, L.; Nanfack-Nkondem, G.; Neveux, G.; Barataud, D.; Quere, R., "High-Current-High-Speed Dynamic Bias Control System Applied to a 100-W Wideband Push-Pull Amplifier", *Microwave Theory and Techniques, IEEE Transactions on*, vol. 56, No. 12, p. 2798-2807, Dec. 2008



OSA

Department of Waves and Associated Systems

RESEARCH
THEMES >

Multifunctional Antennas
Electromagnetic Compatibility
Wireless Networks
Waves and Health
Pulsed Devices
Ultra Wideband

KEYWORDS >

Waves
Electromagnetism
Antennas
Wireless Networks
EMC Electromagnetic
Compatibility

Pulsed UWB
(Ultra Wide Band)
Bioelectro-magnetism

2012

OSA

Department of Waves and Associated Systems

INDUSTRIAL APPLICATIONS

GSM antennas on Peugeot 307cc
LMDS networks with BLUWANN

SERVICES PROVIDED

Characterization, trials, tests, advice, assessment, training

FIELDS OF APPLICATION

Electronics, telecommunications

EQUIPMENT / TECHNICAL RESOURCES

Centimetric antennas measuring reference base
Compact millimetric antennas reference base
Reverberation chamber
UWB metrology: antennas, SER, EMC, components
Propagation channel characterization test bench
Wireless network demonstrators (WIFI, WIMAX, LMDS, ZIGBEE, etc.)
Optoelectronic radar demonstrator
Optoelectronic pulse generator

Competitiveness Clusters with which the laboratory is associated:

ELOPSYS



In the OSA department, interactions of electromagnetic waves with targets are analysed through both theoretical (software development) and experimental approaches. The properties identified lead to the design of systems in the fields of telecommunications, radar, EMC, etc. More precisely five complementary research areas are developed:

- “Multifunction antennas” that are based on several patents of the department and incorporate three strong areas: metamaterial antennas, miniature antennas and high-performance arrays.
- Closely linked to the previous antenna development, the “wireless network” activity analyses network coverage, channel propagation optimization, the diversity (MIMO), indoor-outdoor connection issues, etc.
- Spurious emissions and their effects on electronics are studied by the Electromagnetic Compatibility (EMC) team through the development of powerful simulation tools and experimental approaches implemented in the reverberation chamber and various simulators.
- Ultra wideband systems are studied by our team located in Brive using metrological applications via the transient field, UWB radars and electronic warfare.
- Use of electromagnetic waves must be accompanied by an assessment of the levels emitted to the human body (protection of persons). The “Bioelectromagnetism” team analyses the interaction between electromagnetic waves and living cells and, hand-in-hand with doctors and biologists, defines systems for exploiting it.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 17
 EPST and EPIC researchers: 5
 Other researchers: 8
 HDR (accredited to direct research): 2
 Doctoral students in 2011-2012: 27
 Engineers, technicians: 3
 Administrative agents: 2.5
 Dissertations defended (2008-2011): 36
 Current ANR (French National Research Agency) projects: 4,
 FUI (Single Interministerial Fund): 2
 (Recoss + RWU (Remote Wake-Up)+ ALPAGA),
 PEA (Upstream Study Project): 1 (DGA - Directorate General for Armaments)
 Current European projects: 2 (IDEATA – NETUN)
 Others: 2 D.I.L., 2 ELIARE, 3 F.I.L. (SYSMART
 – LABSYS – WOBNET), REGION/ERDF

ECONOMIC ADDED VALUE

(2008-2011)

Number of patents filed: 3 licences
 Start-up created as a result of research activities since 2005: Devopsys

PARTNERSHIPS

Active National University Partnerships:

IETR Rennes (ANR), LGE Pau (P.E.A.), ENST (Paris), LEST (Brest), IRENA (Nantes), LEAT (Nice), EM2C (CNRS Paris), AMPERE (CNRS Lyon), Vigicell (Villejuif), NAMC (CNRS Orsay), CRSSA (Grenoble), IMS (CNRS-ENSCP Bordeaux), IPBS (CNRS Toulouse), Neurology Lab. (Limoges Faculty of Medicine), Vectorology and Gene Transfer Lab. (CNRS Villejuif).

Current International University Partnerships:

University of Navarre - Pamplona (Spain)
 Moscow Institute of Biophysics (Russia)

National Industrial Partnerships:

THALES, THALES ALENIA SPACE, THOMSON
 RADIAL, FRANCE TELECOM, LEGRAND, A NOVO,
 SATIMO, EUROPULSE, PROTOTIG, CRYPTIRIS
 ADVANTEN, MARTEC, ETSA, ADELTEL, PRANA,
 AMCAD, DASSAULT AVIATION, CNES, EADS.

Department of Waves and Associated Systems (OSA)

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Faculté des Sciences et Techniques
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2 - XLIM Département OSA
UMR CNRS n°7252
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12, rue Gémmini
87068 LIMOGES CEDEX

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Director
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Doctoral School
ED 521 Information Science
and Engineering

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SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

International articles: 98
Articles: 83 in peer-reviewed journals
Works: 2
Book chapters: 1
Conference presentations: 228

Major publications and/or patents over the last 5 years

- Andrieu, Guillaume - El Haffar, Moustafa - Bunlon, X. - Parmantier, J.P. - Reineix, Alain - Kone, V - Demoulin, B. "Extension of the "Equivalent Cable Bundle Method" for Modeling Electromagnetic Emissions of Complex Cable Bundles". IEEE Transactions on Electromagnetic Compatibility, vol. 51, No. 1, p. 108-118, February 2009. Database: ISI Web of Sciences
- Desrumaux, Laurent - Godard, Adrien - Lalande, Michèle - Bertrand, Valérie - Andrieu, Joël - Jecko, Bernard. "An original antenna for transient high power UWB arrays: the Shark antenna" IEEE Transaction on Antennas and propagation, Vol. 58, No. 8, p. 2515-2522, 2010
- Merla, Caterina - Liberti, Micaela - Apollonio, Francesca - Nervi, Clara - D'Inzeo, Guglielmo. "A 3-D Microdosimetric Study on Blood Cells: A Permittivity Model of Cell Membrane and Stochastic Electromagnetic Analysis". Microwave Theory and Techniques, IEEE Transactions on, vol. 58, p. 691-698, March 2010
- Arnaud, Eric - Chantalat, Régis - Koubeissi, Majed - Monédière, Thierry - Rodes, Emmanuel - Thevenot, Marc. "Global design of an EBG Antenna and Meander-Line Polarized for Circular Polarization" Antennas Wireless Propagation Letters, DOI 10.1109/LAWP.2010.2045098 IEEE AWPL, 2010 - Vol 9, p. 215-218
- Diot, Jean-Christophe - Delmote, Philippe - Andrieu, Joël - Lalande, Michèle - Bertrand, Valérie - Jecko, Bernard - Colson, Sylvain - Guillerrey, Régis - Brishoual, Morgan. "Génération d'impulsions électriques ultra large bande par illumination laser de photoconducteurs" A novel Ultra-Wide Band Antenna for transient UWB Applications in the Frequency Band 300 MHz - 3 GHz: the "Valentine Antenna". IEEE Antennas and Propagation, March 2007, Vol. 55, No. 3, p. 987-990. Database: ISI Web of Sciences
- Troubat, Mickael - Bila, Stéphane - Thevenot, Marc - Baillargeat, Dominique - Monédière, Thierry - Verdeyme, Serge - Jecko, Bernard. "Mutual-Synthesis of Combined Microwave Circuits Applied to the Design of a Filter-Antenna Subsystem". IEEE Transaction on Microwave Theory and Technique, vol. 55, No. 6, p.1182-1189, part 1, June 2007. Database: ISI Web of Sciences
- Hamieh H, Juvet M, Feix N, Beillard B, Martinod E, Lalande M, Labarthe C.
- "Characterization of Rubble on the Frequency Band [300MHz-3GHz]" International Journal on Communications Antenna and Propagation (IRECAP), Vol. 1, No. 1, Feb. 2011
- Huitema L, Koubeissi M, Mouhamadou M, Arnaud E, Decroze C, Monédière T.
- "Compact and Multiband Dielectric Resonator Antenna with Pattern Diversity for Multi-Standard Mobile Handheld Devices". IEEE Transactions on A&P, Vol. 59, Issue 11, Publication Year: 2011, Page(s): 4201 - 4208
- Zakka El Nashef G, Torres F, Mons S, Reveyrand T, Ngoya E, Monédière T, Thevenot M, Quéré R. "An accurate modeling technique for antennas and nonlinear RF power amplifiers mixed simulation". JMWTT, Vol. 3, issue 6, Dec. 2011, p. 647-655
- Desrumaux L, Lalande M, Andrieu J, Bertrand V, Jecko B.
- "An innovative radar imaging based on the capacity of an UWB array to steer successively in different directions". Journal of Electromagnetic W&A, PIER B, Vol. 32, p. 91-106, 2011



MINACOM

Department of Micro and Nano-Technologies for Optoelectronic and Microwave Components (MINACOM)

RESEARCH THEMES >

Micro and Nano-Structures for
Telecom Applications
Plastic Optoelectronics
Methods for AdvanCed
design based on Analysis and
Optimization

KEYWORDS >

Multiphysical Modelling
Telecommunications
Nanotechnologies
MEMS
RF& NEMS Organic Electronics
Organic Solar Cells
Optical MOEMS and MEMS
Smart Materials
Microwave Circuits
Biosensors

2012

MINACOM

Department of Micro and Nano-Technologies for Optoelectronic and Microwave Components

INDUSTRIAL APPLICATIONS

Innovational circuits and components for spatial, defence, telecommunications applications, protection of goods and persons, medical diagnosis, energy conversion e

SERVICES PROVIDED

Research and development characterization, trials, testing, monitoring

FIELDS OF APPLICATION

Electronics, telecommunications
Materials
Health, pharmaceutical, bio-industry
Energy
Computing ICT
Transport
Organic electronics

EQUIPMENT / TECHNICAL RESOURCES

CAD tools for designing components, circuits and microwave sub-systems
Measuring devices for S parameters, circuits from 50 MHz to 170 GHz
Material characterization test bench
Cryogenic probe station
PVD technology and ion beams
Optoelectronic characterization test bench

Competitiveness Clusters with which the laboratory is associated:

ELOPSYS, S2E2

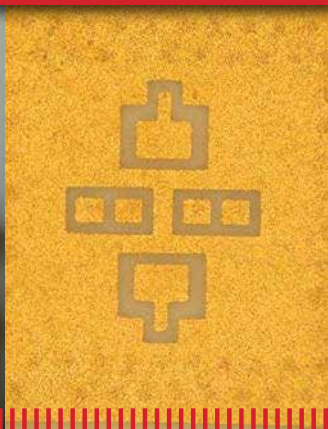
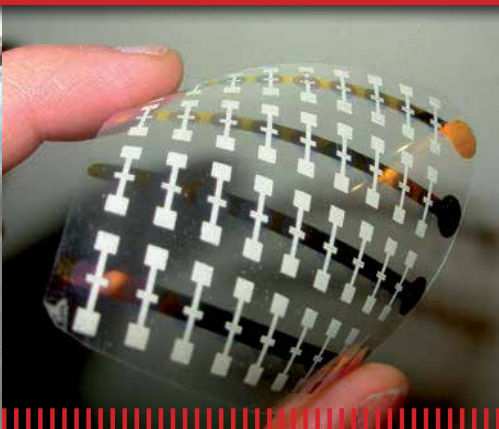
Joint laboratories:

AXIS (Thales Alenia Space)



The department is organized around three closely-related teams:

- The Micro and Nano-structures for Telecom applications (MINT) team develops new technologies for micro-manufacturing components such as MEMS and for incorporating innovative materials into microwave, optical and biological applications.
- The Plastic Optoelectronics team deals with all aspects of plastic component development (electroluminescent diodes, field effect transistors, solar cells, sensors), including physical modelling, manufacturing and specific characterizations.
- The Methods for AdvanCed Design based on Analysis and Optimization (MACAO) team develops a set of techniques (methodologies and related tools) for the optimal design of microwave components and circuits. This team also deals with technological building blocks that are more specifically related to the techniques developed.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 17
 EPST and EPIC researchers: 4
 Other researchers: 10
 HDR (accredited to direct research): 15
 Doctoral students in 2011-2012: 26
 Engineers, technicians: 2
 Administrative agents: 1
 Dissertations defended (2008-2011): 45
 Current national projects: 7 ANR (French National Research Agency)
 Current European projects: 1
 Others: 3 Region-ERDF projects, 1 PRES project, 1 EADS Foundation project

ECONOMIC ADDED VALUE

(2008-2011)

Patents filed: 6 international patents, including 4 co-ownership ones and 4 national patents, including 1 co-ownership one.
 Industrial or research agreements with major organizations: 40
 Conferences, seminars organized: 3 national and 3 international workshops
 AIRMEMS start-up currently incubated

HONOURS

Pierre BLONDY, junior member of the IUF since October 2010 and awarded the IEEE international (MTT) prize of "Outstanding Young Engineer Award" in March 2011

PARTNERSHIPS

Active National University Partnerships:

SPCTS (Limoges), Télécom Bretagne (Brest), Lab-STICC (Brest), INRIA (Sophia-Antipolis), IETR (Rennes), IEMN (Lille), LAAS (Toulouse), FEMTO ST (Besançon), IMS (Bordeaux), ENS Cachan (Paris), HCP (Limoges), LPPI (Cergy-Pontoise), LPMM (Clermont-Ferrand), LGEP (Paris), CINAM (Marseille), IN2MP (Marseille), ENSMSE (Gardanne)

Current International University Partnerships:

UMI CINTRA (Singapore), Carleton University (Canada), University of California, San Diego (USA), Queen's University (Canada), UPV Valencia Polytechnical University (Spain), University of Perugia (Italy)

National Industrial Partnerships:

Thales Alenia Space, Thales Systèmes Aéroportés, GIE III-V Lab, Alcatel Lucent, ST MicroElectronics, Technicolor, EADS Astrium, CEA-LETI, CEA INAC, CEA IRAMIS, Thales communication, INES, Oncomedics, Ceradrop, Disatech, Novapack, Eurofarad, Gemalto

International Industrial Partnerships:

Fractal System Inc (USA), Nanogap (Sp), MAF, Heraeus (Germ), CMAC (Be).

Partnerships with National Organizations and Institutions:

CNES (National Centre for Space Studies), DGA (Directorate General for Armaments), European Space Agency (ESA)

Scientific Interest Groups (GIS):

French Printed Electronics Association (AFELIM)

Interdisciplinary Programmes:

PIE CNRS (Energy)

Research Groups (GDR):

Waves Research Group
 Micro and Nano-Systems Research Group
 NAMIS (Nano and Micro-Systems) International Research Group (GDRI)
 Organic Electronics Research Group
 Nanorgasol backed by the MRCT (Technological Skills and Resources Mission)

Research Federation (RF):

MIRES

Department of Micro and Nano-Technologies for Optoelectronic and Microwave Components (MINACOM)

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s2i.ed.univ-poitiers.fr



SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

Website publication: hal.archives-ouvertes.fr/XLIM-MINACOM

Articles: 110 in peer-reviewed journals

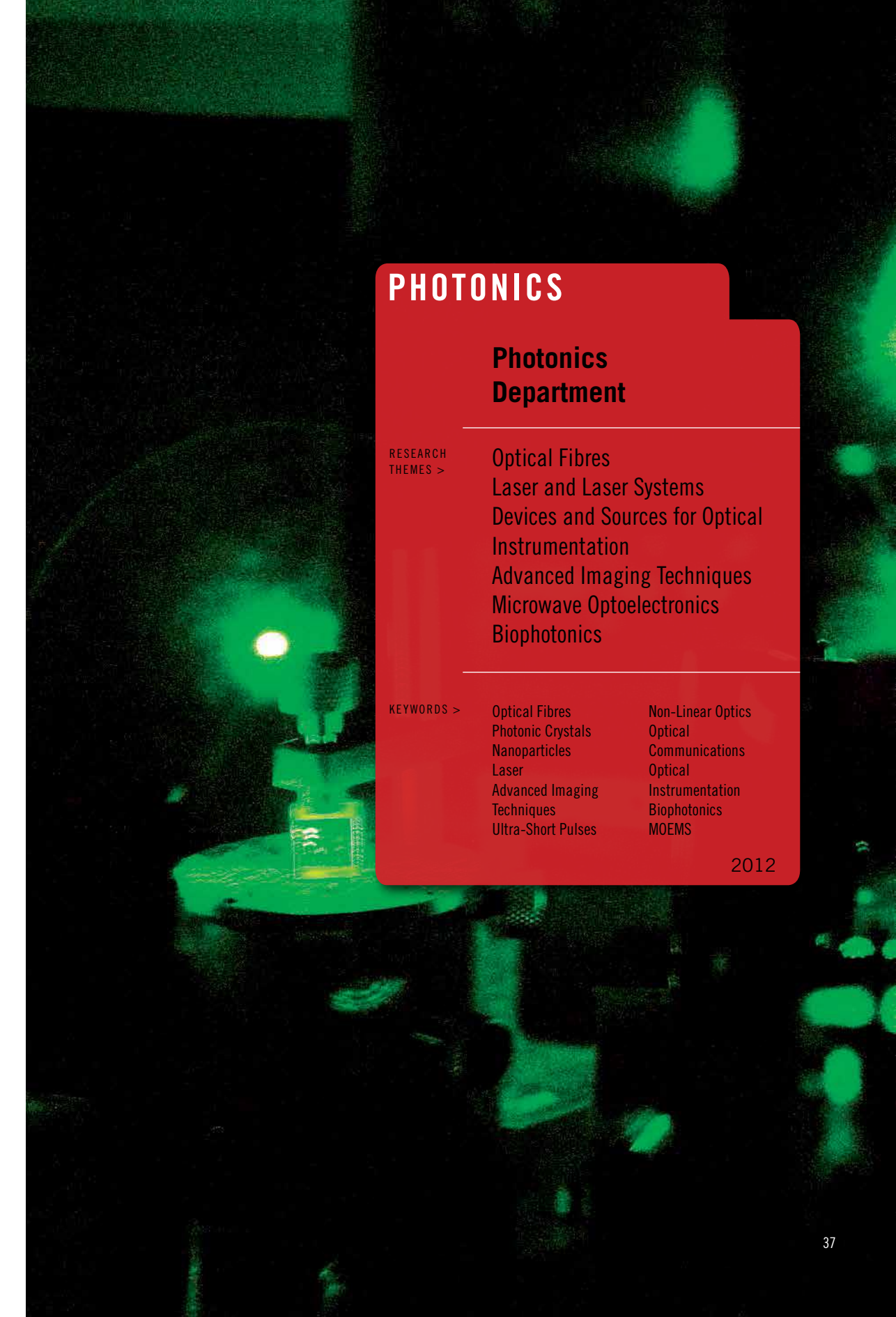
Works: 4 and 3 chapters in works

Conference presentations: 234

Others: 28 invited lectures and 86 presentations without proceedings

Major publications and/or patents over the last 5 years

- E.J. Spadafora, R. Demadrille, B. Ratier, B. Grevin "Imaging the Carrier Photogeneration in Nanoscale Phase Segregated Organic Heterojunctions by Kelvin Probe Force Microscopy" - Nano Letters Volume: 10 Issue: 9 p. 3337-3342 Published: SEPT 2010
- A.K. Pandey, J.M. Nunzi, B. Ratier, A. Moliton "Size effect on organic optoelectronics devices: example of photovoltaic cell efficiency" Physics Letters A; vol. 372, issue 8, 18 February 2008, p. 1333-1336
- M. Boucharef, C. Di Bin, M.S. Boumaza, H.J. Snaith, B. Ratier, J. Boucle "Solid state dye-sensitized solar cells based on ZnO nanocrystals" - Nanotechnology, Volume 21, 205203, 26 April 2010
- A.H. Khalil, D. Passerieux, D. Baillargeat, N. Delhote, S. Verdeyme, L. Rigaudeau, J. Puech "Quasi-elliptic and Chebyshev compact LTCC multi-pole filters functioning in the submillimetric wave region at 150 GHz" - IEEE Transactions on Functioning Theory and Techniques, Volume 58 (12), p. 3925-3935 (2010)
- T. Chartier, C. Dutertre, N. Delhote, D. Baillargeat, S. Verdeyme, C. Delage, C. Chaput "Fabrication of millimeter wave components via ceramic stereo- and microstereolithography processes" - Journal of the American Ceramic Society, Volume 91 (8), p. 2469-2474 (2008)
- K. Frigui, D. Baillargeat, S. Verdeyme, S. Bila, A. Catherinot, J. Puech, D. Pacaud "Microwave breakdown in waveguide filters theoretical and experimental investigations"
- IEEE Transactions on Microwave Theory and Techniques, Volume 56 (12), p. 3072-3078 (2008)
- A. Nasser, S.Bila, S. Verdeyme, F. Seyfert "Improved synthesis for the design of microwave filters with a minimum insertion-loss configuration" - IEEE Transactions on Microwave Theory and Techniques, Volume 56 (9), p. 2086-2094 (2008)
- J. Givernaud, A. Crunteanu, J.C. Orlianges, A. Pothier, C. Champeaux, A. Catherinot, P. Blondy, "Microwave power limiting devices based on the semiconductor metal transition in Vanadium dioxide thin films", IEEE Transactions on Microwave Theory and Techniques, 58 (9), Art. No. 5545454, p. 2352-2361, (2010)
- R. Stefanini – A.J. Martinez – M. Chatras – A. Pothier - V. Boria – P. Blondy "Ku Band High-Q Tunable Surface-Mounted Cavity Resonator using RF MEMS Varactors Microwave and Wireless Components Letters", IEEE 21, 5 (2011) p. 237-239
- C. Dalmay – M. Cherray – A. Pothier – F. Lalloué – M.O. Jauberteau – P. Blondy "Ultra sensitive biosensor based on impedance spectroscopy at microwave frequencies for cell scale analysis" - Sensors and Actuators A Physical Volume 162, Issue 2, p. 189-197 (2010)



PHOTONICS

Photonics Department

RESEARCH THEMES >

Optical Fibres
Laser and Laser Systems
Devices and Sources for Optical
Instrumentation
Advanced Imaging Techniques
Microwave Optoelectronics
Biophotonics

KEYWORDS >

Optical Fibres
Photonic Crystals
Nanoparticles
Laser
Advanced Imaging
Techniques
Ultra-Short Pulses

Non-Linear Optics
Optical
Communications
Optical
Instrumentation
Biophotonics
MOEMS

2012

Photonics Department

INDUSTRIAL APPLICATIONS

New laser sources
Advanced optical instrumentation
Optoelectronic switching
Fibre manufacturing technology
Radiation transmission through fibres
Fibre imaging, fibre sensors

SERVICES PROVIDED

Characterization, trials, testing,
formulation monitoring,
advice, expertise, training

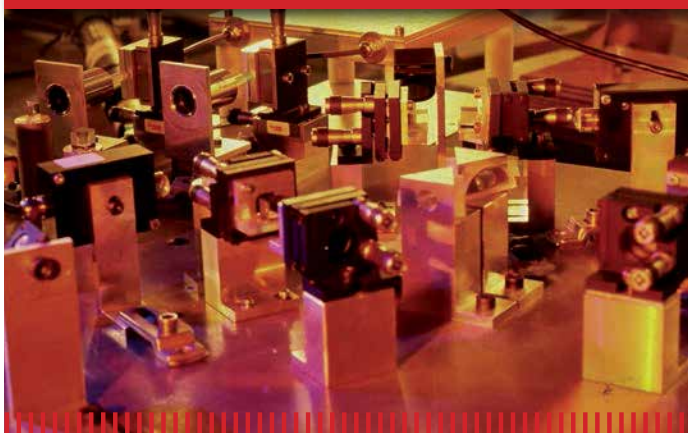
FIELDS OF APPLICATION

Optical communications, sensors,
biomedical, defence, industry,
environment, security, measurement,
space, scientific sector

EQUIPMENT / TECHNICAL RESOURCES

2 optical fibre manufacturing towers
(CNRS platform)
Index, attenuation and dispersion
profiles characterization test bench
Optical spectrum analysers (Telecom
band and UV-IR)
Tunable, continuous-wave titanium
sapphire
MIKAN ytterbium-doped femtosecond
laser
Inverted microscope (Olympus IX71)
2 femtosecond sapphire lasers (MIRA
and Micra)
IR and green sub-nanosecond
microchip lasers
Medium and high-power Er and Yb-
doped fibre lasers
High-peak power, picosecond Er-doped
fibre laser
High-speed photodetectors and
oscilloscopes
Scanning electron microscope

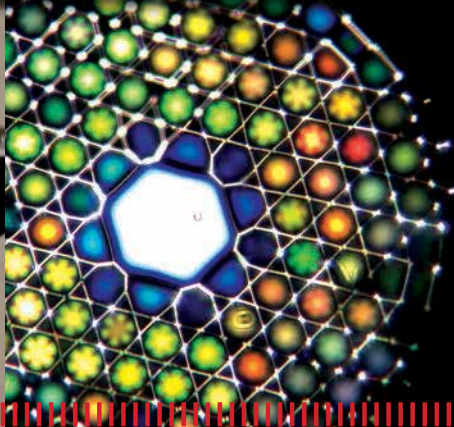
**Competitiveness Clusters with
which the laboratory is associated:**
ELOPSYS



The Photonics department is one of the major national players in the field of optical fibres.

Today, it is innovating extensively in its manufacturing procedures. It covers the modelling activity and manufacturing activity, in partnership with the PLATINOM platform, and has equipped itself with or has developed highly-comprehensive characterization tools. On the instrumentation and laser side, the department takes advantage of its team's skills and expertise in nonlinear optics, in laser cavity, in ultrashort pulses and in interferometry, which it combines with in-depth knowledge of optical fibres and imagines and designs photonic systems incorporating optical fibres. As such, XLIM is recognized as a major contributor to the field of high-resolution imaging with fibres and the field of fibre laser combining. It is also renowned as a key player in implementing non-linear propagation in optical fibres. Opto-microwaves and femtosecond signal characterization are two niches where the department is highly active and fully integrated on a national level.

Our research explores certain fundamental and highly-prospective topics but also targets shorter-term goals by responding to requirements of specifically-identified applications where it leans on strong experimental and technological building blocks.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 13
EPST and EPIC researchers: 8
Other researchers: 8
HDR (accredited to direct research): 16
Doctoral students in 2011-2012: 18
Engineers, technicians: 2
Administrative agents: 2
Dissertations defended (2008-2011): 23
Current national projects: 12 ANR
(French National Research Agency)
Current European projects: 1
Others: 1 BQR (Bonus, Quality,
Research), 1 ERDF, 8 OSEO (Assistance
and financial support for development),
1 LNE
(National Metrology and Trial Laboratory),
1 EOLITE, 1 EDF

ECONOMIC ADDED VALUE

(2008-2011)

Number of patents filed: 13 co-ownership
patents and 2 operating licences
Number of industrial or research
agreements with major
organizations: 12
Start-ups created as a result of research
activities since 2005:
HORUS LASER created in 2007,
GLOPHOTONICS, created in 2010, DIOPTIK
created in 2008

HONOURS

Claire LEFORT, the l'OREAL Prize in 2011

PARTNERSHIPS

Active National University Partnerships with 23 laboratories including:

Charles Fabry Laboratory: Institute of Optics (Orsay),
Physics of Lasers, Atoms and Molecules Laboratory – IRCICA (Lille),
ONERA – National Office for Aerospace Research and Study (Palaiseau),
National School of Higher Telecommunications Studies (Paris),
Physics of Condensed Matter Laboratory (Nice)
CELIA – Centre for Intense Lasers and Applications (Bordeaux),
Observatories of Meudon, Grenoble, Lyon, Côte d'Azur and Midi-Pyrénées,
Jean Perrin Laboratory (Pierre and Marie Curie University, Paris VI).

Current International University Partnerships with 20 laboratories including:

Fibre Optics Research Centre, Moscow (Russia). University of Brescia (Italy).
Institute for Applied Physics, Friedrich-Schiller University, Jena (Germany).
University of Bath. Yerevan State University, Yerevan (Armenia). Mauna Kea
Observatories, Hawaii (USA). University of Tokyo (Japan). Indian Institute of
Technology, New Delhi (India). NT University (Singapore). IFSW – Institut für
Strahlwerkzeuge, German Aerospace Centre V, University of Stuttgart (Germany).
Rovira I Virgili University, Tarragona (Spain). Institute of Low Temperature and
Structure Research, Adam Mickiewicz University, Astri Poland (Poland).

National Industrial Partnerships:

ABX HORIBA, ALCATEL R&I MARCOUSSIS, ASTRIUM CORPORATE, CILAS,
DRAKA COMPTIQ, FRANCE TELECOM R&D, EDF R&D, EOLITE SYSTEMS,
MAUNA KEA TECHNOLOGIES, MULTITEL, THALES-Systèmes Aéroportés,
THALES ALENIA SPACE, etc.

Regional Businesses:

LEUKOS, APTICOD, CERLASE, HORUS, DIOPTIK, PHOTONIS.

International Industrial Partnership:

SILITEC FIBERS SA (SWITZERLAND).

National Organizations and Institutions:

CNES (National Centre for Space Studies), DGA (Directorate General for
Armaments)

Scientific Interest Group (GIS):

GRIFON (Group for New Optical Fibre Initiatives)

Research Groups (GDR):

ONDES, PHONOMI2

Research Federation:

MIRES

Photonics Department

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et Techniques
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Director

Vincent COUDERC
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Parent Institute

XLIM (UMR CNRS 7252)

Doctoral School

ED521: Information Science
and Engineering

s2i.ed.univ-poitiers.fr



SCIENTIFIC PRODUCTION OF RESEARCH TEAM

(2008-2011)

Website publication: archives-ouvertes.fr/XLIM-PHOTONIQUE

Articles: 120 in peer-reviewed journals

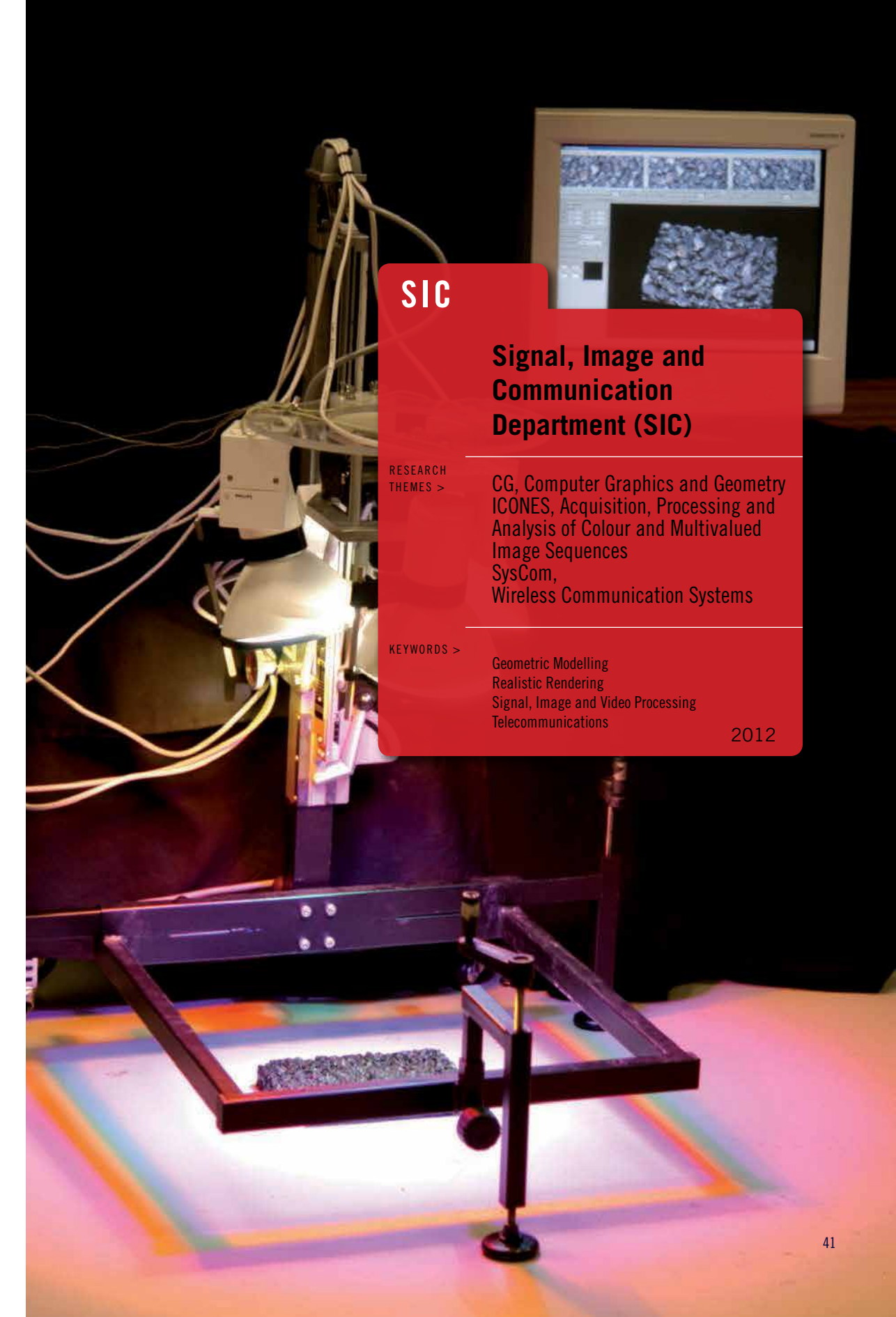
Book chapters: 3

Conference presentations: 207

Others: 32 invited lectures

Major publications and/or patents over the last 5 years

- Brutlein S., Del Rio L., Tonello A., Delage L., Reynaud F., "Laboratory Demonstration of an infrared-to-visible up-conversion interferometer for spatial coherence analysis", *Physical Review Letters* Vol.100, No. 15 (2008) p. 153903-1-153903-4
- Jérôme F., Jamier R., Auguste J.-L., Humbert G., Blondy J.-M., "Simplified hollow-core photonic crystal fiber", *Optics Letters* 35, 8 (2010) 1157-1159 [hal-00605199 - version 1]
- Desroches J., Pagnoux D., Louradour F., Barthélémy A., "Fiber optic device for endoscopic polarization imaging", *Optics Letters* 34, 21 (2009) 3409-3411 [hal-00450036 - version 1]
- Danialt L., Gaponov D., Hanna M., Février S., Roy P., Druon F., Georges P., Likhachev M.E., Salganskii M.Y., Yashkov M.V., "High power femtosecond chirped pulse amplification in large mode area photonic bandgap Bragg fibers", *Applied Physics B: Lasers and Optics*, 103 (2011) 615-621 [hal-00618229 - version 1]
- J. Guillot, A. Desfarges-Berthelemy, V. Kermène, A. Barthélémy, "Experimental study of co-phasing dynamics in passive coherent combining of fiber lasers", *Optics Letters*, 36, No. 15, (2011), 2907 – 2909
- Leproux P., Couderc V., De Angelis A., Okuno M., Kano H., Hamaguchi H., "New opportunities offered by compact sub-nanosecond supercontinuum sources in ultra-broadband multiplex CARS microspectroscopy", *Journal of Raman Spectroscopy* 42, 10 (2011) P. 1871-1874 [hal-00643726 version 1]
- Ferreira M.S., Baptista J.M., Roy P., Jamier R., Février S., Frazão O., "Highly-birefringent photonic bandgap Bragg fiber loop mirror for simultaneous measurement of strain and temperature", *Optics Letters* 36, issue-6 (2010) p. 993-995 [hal-00633835 - version 1]
- Manili G., Modotto D., Minoni U., Wabnitz S., De Angelis C., Town G., Tonello A., Couderc V., "Modal four-wave mixing supported generation of supercontinuum light from the infrared to the visible region in a birefringent multi-core microstructured optical fiber", *Optical Fiber Technology* 17, 3 (2011) p. 160-167 [hal-00643640 - version 1]
- Kilburger S., Millon E., Di Bin P., Boule A., Guinebreteiere R., Di Bin C., "Properties of LiNbO3 based heterostructures grown by pulsed-laser deposition for optical waveguiding application", *Thin Solid Films* 518 (2010) 4654-4657 [hal-00488137 - version 1]
- Brasse G., Restoin C., Ouerdane Y., Roy P., Blondy J.-M. "Luminescence properties of ytterbium and erbium-doped silica-zirconia nanostructured optical fiber under near infrared excitation", *Journal of Luminescence* 131 (2011) 2427-2431 [ujm-00604668 - version 1]



SIC

Signal, Image and Communication Department (SIC)

**RESEARCH
THEMES >**

CG, Computer Graphics and Geometry
ICONES, Acquisition, Processing and
Analysis of Colour and Multivalued
Image Sequences
SysCom,
Wireless Communication Systems

KEYWORDS >

Geometric Modelling
Realistic Rendering
Signal, Image and Video Processing
Telecommunications

2012

INDUSTRIAL APPLICATIONS

Industrial and artificial vision
Smart video and remote monitoring
Content-based image and video
retrieval for diagnosis support
Geometric modelling,
simulation and animation,
Realistic rendering.

SERVICES PROVIDED

Characterization, trials, testing,
formulation monitoring
Advice, expertise, training
Research and development

FIELDS OF APPLICATION

Electronics, telecommunications
Energy
Health, pharmaceutical, bio-industry
Transport

EQUIPMENT / TECHNICAL RESOURCES

3D imaging room (three-CCD, infra-red
and multispectral colour cameras, high-
speed cameras, laser, stroboscopes)
Standardized psycho-sensorial
assessment room
Analysis and transmission bench for
video signals on multipath channels
Analyser for spectrums and vector
networks, field meter, modulation signal
generator
Compute cluster
Software platforms (MOKA, RAPSOR,
SLIP, RVIEW)

**Competitiveness Clusters with which
the laboratory is associated:**
ELOPSYS



The SIC department's activities fall under Information and Communication Science and Technology, and include the fields of Image and Wireless Communications. The SIC department participates in the Sigma-Lim Labex, one of the 15 French Digital Sciences Laboratories of Excellence and is involved in a wide range of national and international projects. Its work provides full control of information streams (images and/or videos), including transmission over wireless networks. This work ranges from fundamental research to the development of industrial applications:

- 3D modelling for geosciences, medicine, architecture, archaeology;
- virtual environment visualization, illumination simulation;
- augmented reality and realistic image-based rendering;
- texture analysis for measuring materials, transport and environment;
- content-based retrieval of heritage, education and health-related multimedia documents;
- movement synthesis and monitoring of behaviour, sports movements and fluid mechanics;
- acquisition of information through sensor networks for transport, health, energy and construction;
- Optimization of QoS and wireless network consumption in difficult environments;
- image quality assessment and functional quality consideration;
- protection of data, goods, places and persons.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 44

EPST and EPIC researchers: 2

Other researchers: 10

HDR (accredited to direct research): 12

Doctoral students in 2011-2012: 33

Engineers, technicians: 5

Administrative agents: 5

Dissertations defended (2008-2011): 31

Current ANR (French National Research Agency) projects: 10

Current European projects: 4 ERDF

Others: 2 Champlain projects, 1 CMCU (Joint University Cooperation Committee) project

2 Poitou-Charentes Region projects,

2 Limousin Poitou Charentes PRES projects

ECONOMIC ADDED VALUE

(2008-2011)

Number of patents filed: 2 patents including 1 co-ownership one, 4 APP (Software Programmes Protection Agency) licences

Number of industrial agreements: 5 industrial agreements, 4 industrial agreements with CIFRE (Industrial agreements for training through research)

Start-up created as a result of research activities since 2005: WYTECH

Conferences, seminars organized: 2 conferences, 2 workshops, 2 spring schools, 3 international conferences, 1 ISO/JPEG standardization committee

HONOURS

Christine Fernandez-Maloigne:
Prix Augustin Fresnel 2012 Prize

PARTNERSHIPS

Active National University Partnerships:

LaBRI Bordeaux, LI Tours, LIRIS Lyon, GREYC Caen, Hubert Curien Laboratory Saint-Etienne, IETR Rennes, LAGIS Lille

Current International University Partnerships:

EPFL Switzerland; University of Sherbrooke, Quebec (Canada); ENIT, Tunisia; University of Tangiers, (Morocco); Universities of Sevilla and Barcelona, (Spain); Colour Group, University of Gjøvik, (Norway); Universities of Milan and Verona, (Italy); University of Coblenz, (Germany); University of Amsterdam, (The Netherlands); University of Brasov, (Romania).

National Industrial Partnerships:

Alstom, CEA, Cemagref, COLAS, CSTB, 2S3i, DGA, EDF, EIDEN Studio, ERGOSPACE, France Telecom R&D/ Orange Lab, GIGACOM, IFP, KEOSYS, La Roche Posay, LCPC, LNE, L'Oréal, Michelin, Orange Lab, SAGEM Com, Schneider Electric, SEOLIS, Thalès Communications, THALES Security Systems, Technicolor.

International Industrial Partnership:

AGFA Gevaert

Partnerships with National Organizations and Institutions:

CNED (National Centre for Distance Education), CNAM (National Conservatory of Arts and Crafts), DGA (Directorate General for Armaments), CIE France (International Commission on Illumination), AFNOR (French National Organization for Standardization)

Partnerships with International Organizations and Institutions:

ICIE (International Centre for Innovation in Education), ISO

Scientific Interest Groups (GIS):

Cité des Savoirs (Knowledge Project), Poitiers; Limousin Poitou-Charentes PRES

Interdisciplinary Programmes:

Sigma-Lim Labex; Math-STIC Research Federation of the MIRES PRES (Mathematics and their interactions; Images, Digital Information and Systems; Networks and Security) Images and Interactivity CPER project (State-Region Project Agreement)

Research Groups (GDR):

ISIS, IG, IM, I3, Vision, Ondes, STIC-Santé

Research Federation (RF):

MIRES

Signal, Image and Communication Department (SIC)

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christine.fernandez-maloigne@xlim.fr

Parent Institute

XLIM (UMR CNRS 7252)

Doctoral School

ED 521M : Sciences et Ingénierie
pour l'Information et
Mathématiques

s2i.ed.univ-poitiers.fr



SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

Website publication: hal.archives-ouvertes.fr/XLIM-SIC

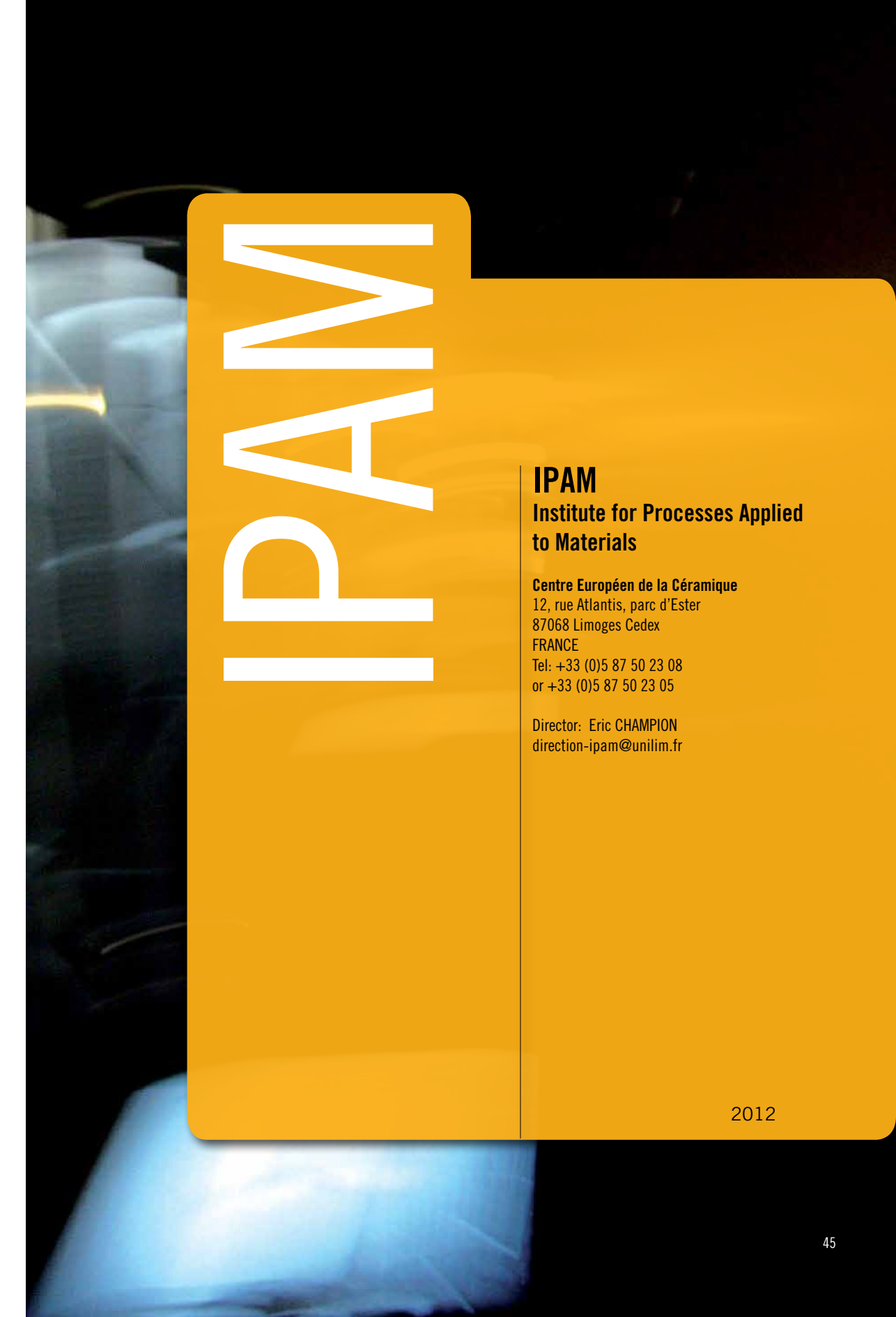
International articles: 87

Conference presentations: 197

Others: 21 works and chapters in works

Major publications and/or patents over the last 5 years

- "Parametric models of linear prediction error distribution for colour texture and satellite image segmentation", Qazi I.-U.-H., Alata O., Burie J.-C., Abadi M., Moussa A., Fernandez-Maloigne C. *Computer Vision and Image Understanding* 115, 8 (2011) 1245-1262
- "Quaternionic wavelets for texture classification", Souillard R., Carré P. *Pattern Recognition Letters* 32, 13 (2011) 1669-1678
- "Fully Deformable 3D Digital Partition Model with Topological Control", Damiand G., Dupas A., Lachaud J.-O. *Pattern Recognition Letters* 32, 9 (2011) 1374-1383
- "A solution to efficient power allocation for H.264/SVC video transmission over a realistic MIMO channel using precoder designs", Hamidouche W., Perrine C., Olivier C., Pousset Y. *Journal of Visual Communication and Image Representation*, Elsevier (2011) To be Announced
- "Photon Streaming for Interactive Global Illumination in Dynamic Scenes", Airieau B., Bridault F., Meneveaux D., Blasi P. *The Visual Computer* 27, 3 (2011) 229-240
- "Choice of a pertinent colour space for color texture characterization using parametric spectral analysis", Qazi I.-U.-H., Alata O., Burie J.-C., Moussa A., Fernandez-Maloigne C. *Pattern Recognition* 44, 1 (2011) 16-31
- "Cosine Lobes for Interactive Direct Lighting in Dynamic Scenes", Meunier S., Perrot R., Aveneau L., Meneveaux D., Ghazanfarpour D. *Computers & Graphics* 34, 6 (2010) 767--778
- "Towards Video Quality Metrics based on Colour Fractal Geometry", Ivanovici M., Richard N., Fernandez-Maloigne C. *EURASIP Journal on Image and Video Processing* 2010 (2010) 18p
- "Application of information criteria for the selection of statistical fast fading model of the radio mobile channel", Pereira C., Coq G., Li X., Pousset Y., Olivier C., Alata O., Vauzelle R., Arnaudon M. *Int. Journal of Electronics and Communications*, 64 (2010) 521-530
- "Some properties of Lyapunov function sets", Moulay E. *American Mathematical Society* 138, 11 (2010) 4067-4073



IPAM

IPAM

**Institute for Processes Applied
to Materials**

Centre Européen de la Céramique

12, rue Atlantis, parc d'Ester

87068 Limoges Cedex

FRANCE

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2012



IPAM

The “Processes Applied to Materials” Research Institute pools together two laboratories around research and training activities that are established at the intersection of the field of materials and the field of process engineering:

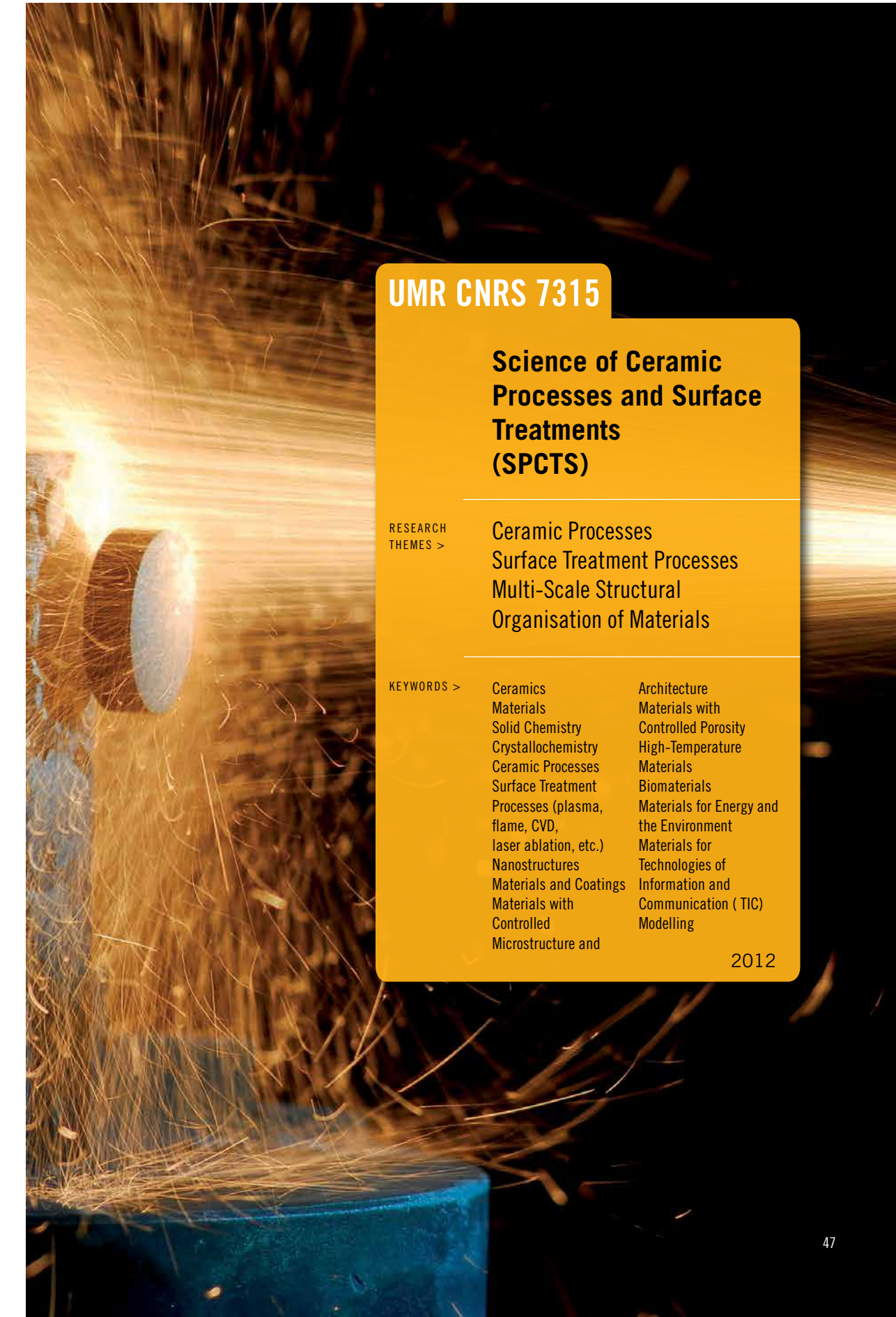
- Science of Ceramic Processes and Surface Treatments (SPCTS)
- Heterogeneous Materials Study Group (GEMH)

Research efforts, which are balanced between specifically fundamental concerns and more finalized subjects, deal with manufacturing processes and the precise characterization of the materials produced as well as the modelling of processes and of the behaviour of products that are subjected to various constraints when used.

The varied and complementary skills and expertise of the researchers and teacher-researchers in the fields of solid-state chemistry and physics, ceramics materials science, heterogeneous materials, materials for civil engineering and for life sciences, mechanics, process engineering, etc. provide the opportunity to develop interdisciplinary themes for studying promising materials for priority sectors: new energies, health and life science technologies, transport, construction, the environment, information and communication technologies, etc.

The Institute comprises over a hundred teacher-researchers and permanent researchers, who are committed to:

- the “European Ceramics Cluster” (competitiveness cluster), which groups together skills and expertise in research, training and technology transfer in symbiosis with the businesses of the ESTER Technopole site and also at national and international levels.
- the SIGMA-LIM Labex “Ceramic materials and components that are specifically related to integrated, secure, smart communicating systems”.



UMR CNRS 7315

**Science of Ceramic
Processes and Surface
Treatments
(SPCTS)**

RESEARCH
THEMES >

Ceramic Processes
Surface Treatment Processes
Multi-Scale Structural
Organisation of Materials

KEYWORDS >

Ceramics	Architecture
Materials	Materials with
Solid Chemistry	Controlled Porosity
Crystallochemistry	High-Temperature
Ceramic Processes	Materials
Surface Treatment	Biomaterials
Processes (plasma,	Materials for Energy and
flame, CVD,	the Environment
laser ablation, etc.)	Materials for
Nanostructures	Technologies of
Materials and Coatings	Information and
Materials with	Communication (TIC)
Controlled	Modelling
Microstructure and	

2012

SPCTS

Science of Ceramic Processes and Surface Treatments

INDUSTRIAL APPLICATIONS

Field of energy (Correspondant laboratory with CEA) Syngas and hydrogen (Joint Laboratory with Air Liquide)

Space propulsion

Biomaterials (implants, prosthesis)

Metallurgy (special refractory materials)

Optic

Glaze layers manufactured by a thermal spray route for environmental barriers

DLC layers manufactured by a vapor deposition route for tribological applications

Thermal barrier coatings manufactured by a thermal spray route

SERVICES PROVIDED

Advice / training

FIELDS OF APPLICATION

Materials, chemistry, electronics, telecommunications, energy, environment, TIC, mechanics, health, transportation, optics.

EQUIPMENT / TECHNICAL RESOURCES

Production/Manufacturing

- CVD, PECVD, laser ablation

- Plasma spraying

- HP, HIP, SPS

- Powder synthesis using spray pyrolysis, coprecipitation, sol-gel process

- Ceramic shaping

Characterization

- Powder characterization

- Acousto-phoropter, zetameter

- Capillary and rotational rheometer

- Plasma arc and spraying diagnosis

- FTIR and Raman spectrometry,

Fluorometry

- AFM

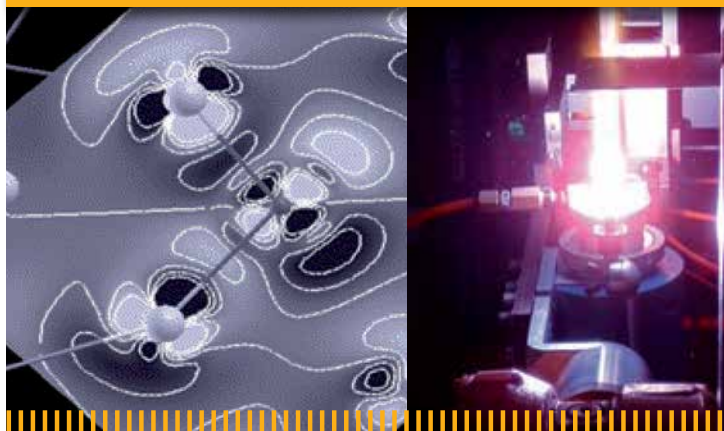
- XPS

- Ellipsometry

- Powder XRD, thin films, single-crystal, small-angle scattering, reflectometry

- SEM + EDX + cryo FEG

- HRTEM + EDX



This research unit associated to the French National Research Council (CNRS) includes staff from the University of Limoges and the National Engineering College for Industrial Ceramics (ENSCI).

There is a total of around eighty permanent staff who are professors, assistant professors, researchers, engineers, technicians and administratives, and about eighty PhD students and post-doc. The research activity of the various teams is articulated around different disciplines: science and engineering of materials, physico-chemistry of solids, process engineering, thermics, etc.

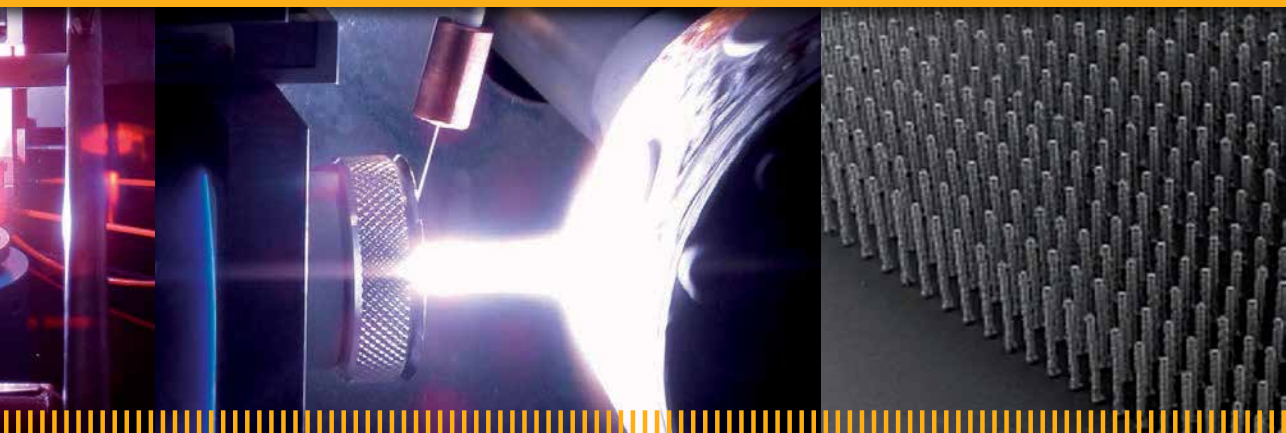
The main purpose of the laboratory is to characterise, understand, control and model/simulate the various steps involved in the elaboration of ceramics and of layers, in order to design components with new or specific properties.

The SPCTS includes three main teams:

- Ceramic processes, head: Dr Fabrice Rossignol
- Surface treatment processes, head: Dr Alain Denoir-jean
- Multi-scale structural analysis of materials, head: Dr Philippe Thomas.

The SPCTS is a:

- 1) Member of the Ceramic competitiveness cluster,
- 2) Partner, with XLIM, of the «Laboratory of Excellence» Sigma-Lim «From specific ceramic materials and components to integrated, secured and intelligent communication systems»,
- 3) Member of Research Federation «Matériaux Val de Loire-Limousin» (FR3469)



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 50
 EPST and EPIC researchers: 14
 Other researchers: 1 PH and 7 Post-docs
 HDR (accredited to direct research): 34
 Doctoral students in 2011-2012: 60
 Engineers, technicians: 21
 Administrative agents: 5
 Dissertations defended (2008-2011): 63
 Current ANR (French National Research Agency) projects: 5 ANR (French National Research Agency) and 9 FUI/
 FCE (Single Interministerial Fund/
 Enterprise Competitiveness Fund)
 Current European projects: 2

ECONOMIC ADDED VALUE

(2008-2011)

Number of patents filed:
 18 under co-ownership
 Number of industrial or research agreements with major organizations: 45
 Start-up created as a result of research activities since 2005: CERADROP
 Conferences, seminars organized: 20 national and 24 international

Competitiveness Clusters with which the laboratory is associated:

European Ceramics Cluster
 Elopsys

Joint Research Laboratory with a private company:

Joint Research Lab with the CEA, Joint Lab with Air Liquide

PARTNERSHIPS

Active National University Partnerships:

Collaboration with numerous French laboratories (university laboratories, laboratories of national research councils such as CNRS)
 UPR 2949, Néel Institute (Grenoble) ; UPR 3079, CEMHTI (Orléans) ;
 UPR 9048, ICMCB (Bordeaux) ; UMR 5085, CIRIMAT (Toulouse) ;
 UMR 5615, LMI (Villeurbanne) ; UMR 6172, XLIM (Limoges) ;
 UMR 6595, IUSTI, (Marseille) ; UMR 7647, LPICM, Ecole Polytechnique (Palaiseau) ; UMR 8578, LPGP (Orsay).

Current International University Partnerships:

University of Sherbrooke (Canada),
 University of Genoa (Italy),
 Nagoya Institute of Technology, Nagoya (Japan),
 Jozef Stefan Institute (Slovenia),
 Laurence Berkeley National Laboratory (USA),
 Academy of Sciences, Institute of Plasma Physics, Prague
 (Czech Republic).

National/International Industrial Partnerships:

ALCAN, L'AIR LIQUIDE, BODYCOTE, CERADROP, CILAS, EADS/ASTRIUM,
 IMERYS, SAFRAN/SNECMA, SULZER, 3D CERAM, EDF, GDR, PSA, RENAULT,
 St GOBAIN, THALES, C.A.R.R.D – Villach, Austria

Scientific Interest Groups (GIS):

International Scientific Cooperation Programmes (INCO)
 France-Czech Republic INCO
 CNRS/ARC/NRC Australia, Venezuela, Canada
 CNRS/ NSF of China
 CNRS-CONICYT (Chile)

Interdisciplinary Programmes:

Interdisciplinary Energy Programme (CELASOL)

Research Groups (GDR):

GDR 2985 All-electrolyte fuel cells (PACTE)
 GDR 3051 MATINEX (Innovative materials in extreme conditions)
 GDR 3161 Plasma propulsion in space (SNECMA)
 GDR 3165 Spark Plasma Sintering

Research Federation (RF):

Materials Val de Loire – Limousin (MATV2L) – FR3469

Science of Ceramic Processes and Surface Treatments (SPCTS)

www.unilim.fr/spcts

Centre Européen de la Céramique
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Director

Thierry CHARTIER
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Parent Institute

Institute for Processes Applied
to Materials (IPAM)

Doctoral School

ED 522: Materials, Mechanical,
Energy, and Aeronautical Science and
Engineering

simmea.ed.univ-poitiers.fr



SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

Website publication: hal.archives-ouvertes.fr/SPCTS

Articles: 350 in peer-reviewed journals

Works: 9

Book chapters: 15

Conference presentations: 440 presentations and

154 posters

Publications, presentations: 70

Major publications and/or patents over the last 5 years

- B. Fousseret, M. Mougenot, F. Rossignol, J.F. Baumard, B. Soulestin, C. Boissière, F. Ribot, D. Jalabert, C. Carrion, C. Sanchez, M. Lejeune. "Ink-jet printing engineered functional microdot arrays made of mesoporous hybrid organosilicas". Chem. Mater., 2010, 22, 3875-3883
- M. Gendre, A. Maitre, G. Trolliard. "A study of the densification mechanisms during spark plasma sintering of zirconium (oxy-)carbide powders". Acta Materialia, 58, 2010, 2598-2609
- P.M. Geffroy, A. Vivet, J. Fouletier, N. Richet, P. Del Gallo, T. Chartier. "Influence of oxygen surface exchanges on oxygen semi-permeation through La(1-x) Sr_xFe(1-y)Ga_yO₃- dense membrane". J. Electrochemical Society, 2011, 158, B971-B979
- V. Rat, J.F. Coudert. "Acoustic stabilization of electric arc instabilities in non-transferred plasma torches". Appl. Phys. Letters, 96, 2010, 101503-1-101503-3
- A. Crunteanu, J. Givernaud, J. Leroy, D. Mardivirin, C. Champeaux, J.C. Orlanges, A. Catherinot, P. Blondy. "Voltage and current activated metal insulator transition in VO₂-based electrical switches: a lifetime operation analysis". Sci. Technol. Adv. Mater., 11, 2010, 065002-1-065002-6
- E. Bannier, G. Darut, E. Sanchez, A. Denoirjean, M.C. Bordes, M.D. Salvador, E. Rayon, H. Ageorges. "Microstructure and photocatalytic activity of suspension plasma sprayed TiO₂ coatings on steel and glass substrates". Surface & Coatings Technology, 206, 2011, 378-386
- E. Béchade, O. Masson, T. Iwata, I. Julien, K. Fukuda, P. Thomas, E. Champion. "Diffusion path and conduction mechanism of oxide-ions in apatite-type lanthanum silicates". Chemistry of Materials, 2009, 21, 2508-2517.
- M. Bousquet, J.R. Duclere, C. Champeaux, A. Boulle, P. Marchet, A. Catherinot, A. Wu, P.M. Vilarinho, S. Deputier, M. Guillux-Viry, A. Crunteanu, B. Gautier, D. Albertini, C. Bachelet. "Macroscopic and nanoscale electrical properties of pulsed laser deposited (100) epitaxial lead-free Na_{0.5}Bi_{0.5}TiO₃ thin films". J. Appl. Physics, 2010, 107, 034102-1-034102-12
- N. Berkaine, E. Orhan, O. Masson, P. Thomas, J. Junquera. "Nonlinear optical properties of TeO₂ crystalline phases from first principles". Phys. Rev. B, 2011, 83, 245205-1 - 245205-10.
- P. Del Gallo, F. Rossignol, T. Chartier, R. Faure, C. Bonhomme, S. Goudalle. "Catalyseur comprenant des particules actives bloquées physiquement et chimiquement sur le support." (Catalyst comprising active particles physically and chemically blocked on the base). Air Liquide patent: FR10 60634 dated 16/12/2010



EA 3 178

Heterogeneous Materials Research Group (GEMH)

**RESEARCH
THEMES >**

Consolidation of (eco)materials
at moderate temperatures:
reaction mechanisms
and process development
Ceramics preparation :
processes and microstructures
Mechanical and thermal
behaviour of heterogeneous
materials:
characterization and simulation
Civil engineering
Material and structure
Durability

KEYWORDS >

Refractories
Hydraulic Binders
Cement Materials
Silicate Ceramics
Porous Materials
Thermal Insulators
Coatings
and Enamels
Civil Engineering
Material and Structure

Durability
Risks - Solid
and Material
Mechanics
Structural
Mechanics
Soil Mechanics
Mechanics
of structural
assembly

2012

Heterogeneous Materials Research Group

INDUSTRIAL APPLICATIONS

Support for the development of new products / processes

Technical support:
material characterization, process studies

Structural component trials

SERVICES PROVIDED

Research and development

FIELDS OF APPLICATION

Materials, environment,
construction

EQUIPMENT / TECHNICAL RESOURCES

Granulometric selector
Optical dilatometer
Drying oven in a controlled atmosphere
Pycnometer
Particle sizer
Device for measuring specific surface area (BET method)
Optical microscope - image analysis
Scanning electron microscope
Filter press
DTA, TGA, dilatometer
Continuous furnace
Controlled stress rheometer
Infra-red microscope
Differential calorimeter
System for measuring Young's modulus using high-temperature ultrasonography
Ultrasonic characterization equipment
Acoustic emission device
Thermal shock test bench
Friction measurements
Finite element simulation software
System for measuring thermal diffusivity using the Laser Flash technique
Tribometer
ICP chemical analysis
Interferometric microscope
Mechanical presses with hydro-thermal enclosures

**Competitiveness Clusters with which
the laboratory is associated:**
European Ceramics Cluster



This laboratory attached to the ENSCI (French National Engineering School for Industrial Ceramics) and the University of Limoges, brings together 25 university teachers from the two establishments. It is divided into 2 teams.

The “mineral materials” team (ENSCI - Limoges) studies the development and characterization of very-heterogeneous materials: refractories, hydraulic binders, raw mineral materials (silicate ceramics), porous materials for insulation and coatings.

The priority actions concern:

- the consolidation of materials at moderate temperature: reaction mechanisms and development of new processes;
- ceramic preparation: processes and microstructure: a) control of the microstructure of the products derived from natural raw materials, b) thermal aspects of processes;
- mechanical and thermal behaviour of heterogeneous materials: characterization and simulation.

The “Civil Engineering and Durability” team, based in Égletons, is specialized in:

- Roadway durability: diagnosis, behaviour under load, material fatigue
- Wooden structures for construction:
 - material behaviour, cracking,
 - behaviour of structures under load,
 - thermophysical behaviour of wooden walls.



KEY FIGURES

(at 1st January 2012)

University teachers: 26
 Other researchers: 8
 HDR (accredited to direct research): 10
 Doctoral students in (2011/2012): 23
 Engineers, technicians: 3
 Administrative agents: 1
 Dissertations defended (2008/2011): 19
 Projects: 3 including 2 ANR (French National Research Agency)
 Others: 3 PRES projects (Further Education and Research Centre)

ECONOMIC ADDED VALUE

(2008-2011)

Number of patents filed:
 5 under co-ownership
 Number of industrial or research agreements with major organizations: 29
 Start-up created as a result of research activities since 2005: Biblontek
 Conferences, seminars organized: 2 national
 and 1 international

PARTNERSHIPS

Active National University Partnerships:

LACCO, University of Poitiers
 CEMHTI, University of Orléans
 ICMCB, University of Bordeaux
 LPTL, University of Paris (Jussieu)
 LASI, University of La Rochelle

Current International University Partnerships:

Institute of Chemical Technology, Prague (Czech Republic)
 North Rhine-Westphalia Technical University, Aachen (Germany)
 University of Science and Technology, Krakow (Poland)
 Montanuniversität Leoben, University of Leoben, (Austria)
 Nagoya Institute of Technology (Nagoya, Japan)
 Max Planck Institute of Colloids and Interfaces, Potsdam (Germany)

National Industrial Partnerships:

ANR SETHER, ACOIFF Project, CERANANO ANR DEMETHER Project

Partnerships with National Organizations and Institutions:

CEA (French Atomic Energy and Alternative Energy Commission), CNES (National Centre for Space Studies)

Scientific Interest Groups (GIS):

Wood, Construction, Environment
 Geopolymers

Research Federation (RF):

FIRE, RILEM, FREDD, MATV2L

Heterogeneous Materials Research Group (GEMH)

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Director

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Limoges Team Leader

Sylvie ROSSIGNOL

Égletons Team Leader

Christophe PETIT

Parent Institute

Institute for Processes Applied
to Materials (IPAM)

Doctoral School

ED 522: Materials, Mechanical,
Energy and Aeronautical
Science and Engineering

simmea.ed.univ-poitiers.fr/



SCIENTIFIC PRODUCTION OF RESEARCH TEAM

(2008-2011)

Website publication: hal-unilim.archives-ouvertes.fr/GEMH

Articles: 117 international and 125 in peer-reviewed journals

Conference presentations: 214

Books: 1

Major publications and/or patents over the last 5 years

- R. Moutou Pitti, F. Dubois, C. Petit, N. Sauvat, O. Pop
"A new integral parameter for mixed-mode crack growth in orthotropic viscoelastic material". Engineering Fracture Mechanics Vol 75, p. 4450-4465, 2008
- A. Michot, D. Smith, S. Degot, C. Gault
"Thermal conductivity and specific heat of kaolinite: evolution with thermal treatment". J. Eur. Ceram. Soc, 28 (14), 2008, 2639-2644
- M. Le Troedec, D. Sedan, C. Peyratout, J.P. Bonnet, A. Smith, R. Guinebrethière, V. Gloaguen, P. Krausz
"Influence of various chemical treatments on the composition and structure of hemp fibres". Composites, Part A; Applied Clay Science and Manufacturing, 39 (3), 2008, 514-522
- B. Qi, J. Absi, N. Tessier-Doyen
"Experimental and numerical study of the Young's modulus vs temperature of heterogeneous model materials with polygonal inclusions". Comp. Mat. Sci., 46 (4), 2009, 996-1001
- M. Takarli, W. Prince, F. Allou
"Characterization of failure process in concrete using helium gas permeability measurement under compressive loading". ASCE J. of Materials in Civil Engineering, 21, 2009
- C. Petit, M. Diakhate, A. Millien, A. Phelipot-Mardelé, B. Pouteau
"Pavement design for turn road section international". Road Materials and Pavement Design, 10 (3), 2009, 609-624
- E. Prud'homme, P. Michaud, E. Joussein, C. Peyratout, A. Smith, S. Arrii-Clacens, J.M. Clacens C, S. Rossignol
"Silica fume as porogen agent in geo-materials at low temperature". J. Eur. Ceram. Soc., 30 (7), 2010, 1641-1648
- J.M. Husson, F. Dubois, N. Sauvat
"Elastic response in wood under moisture content variations: analytic development". Mechanics of Time-Dependent Materials, 14 (2), 2010, 203-217
- F. Allou, C. Petit, C. Chazallon, P. Hornych
"Shake down approaches to rut depth prediction in low-volume roads". J. Eng. Mechanics, 136 (11), 2010, 1422-1434
- G.L. Lecomte, J.P. Bonnet, P. Blanchart
"Investigation of the sintering mechanisms of kaolin-muscovite". Applied Clay Sci., 51, 2011, 445-451

GEIST

GEIST
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Environment,
Immunity, Health
and Therapeutics Institute

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2 rue du Dr Marcland
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Director: Jean FEUILLARD
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Co-Director: Abderrahman Maftah
abderrahman.maftah@unilim.fr

2012



GEIST

The GEIST Institute groups together all the teams from Limoges that are acknowledged in the fields of Biology, Health and the Environment. These teams interact and work hand-in-hand with the clinical teams. The institute enhances the potential of these teams in fields where they have international recognition and federates their research efforts around high-quality cross-sector projects in which multidisciplinary competencies are indispensable.

GEIST teams are acknowledged for a range of specialities which includes a variety of fields of expertise:

- in the fields of cellular biology, genetics, physiology and pathophysiology, the teams study in particular cell homeostasis and the regulation of apoptosis, B lymphocyte differentiation and lymphomagenesis, muscle development and its control by genetic polymorphisms, and genetic regulation of glycosylation;
- in the therapeutics-related field, the teams have a range of highly-pronounced specialities that focus on the study of microbial and cellular resistance, of anti-tumoral and immunosuppressive pharmacology and of developing anti-tumoral molecules;
- in the field of the environment and related risks, the teams have acknowledged expertise in the study of metal water and ground pollutants and are specialized in epidemiology, in particular neurological pathologies.

All of these «Biology, Health, Agro Resources, Environment» themes were granted a national label as a Federated Research Institute (IFR 145) on 1st January 2007. The GEIST Institute was relabelled by the CNRS in 2012 and is now known as the CNRS FR 3503 Research Federation.

In addition to the EPSTs involved in the acknowledgement of the teams (CNRS, INRA, INSERM), there is also a team labelled by the French Association for Cancer Research (ARC) and several National Reference Centres by the French Ministry for Health.

GEIST also pursues structuring efforts that were initiated a few years ago in relation to large-scale equipment. As such, the 12 original hubs have now been organized around 5 platforms: CIM (Cytometry, Imaging, Mathematics), SCRABL (Limousin Joint Biomolecule Research and Analysis Department, which groups together proteomic analyses (2D electrophoresis), mass spectrometry and NMR), animal facilities, Génolim (which combines all classical and new-generation technology for sequencing and for studying RNA expression) and CEBIMER (Centre for Epidemiology, Biostatistics and Research Methodology).

GEIST is a space that is open to national and international research, whose teams are involved in a large number of national and European networks.

UMR CNRS 7276

Control of the B Cell Immune Response and Lymphoproliferations (CRIBL)

**RESEARCH
THEMES >**

Physiology and Genetics
of B lymphocyte
Lymphomagenesis Mechanism
Immunoglobulin
Deposition Diseases
Therapeutic Antibodies

KEYWORDS >

Molecular Biology
Cell Biology
Genome
Genetics
Transgenesis

Oncogenesis
Hematology
Immunology
Animal Models
Lymphoproliferations

2012

CRIBL

Control of the B Cell Immune Response and Lymphoproliferations

INDUSTRIAL APPLICATIONS

3D fluorescence microscopy,
KO/KI transgenic mice models,
PCR Genotyping and southern blot,
Real-time quantitative and classical
PCR, Classical and 3D analysis
using flow cytometry,
Rapid cell sorting using flow
cytometry, Cell culture: ES and
lymphoid cell lines, Recombinant
antibodies

SERVICES PROVIDED

Characterization, trials, testing,
formulation
monitoring / advice, expertise,
training / research
and development

FIELDS OF APPLICATION

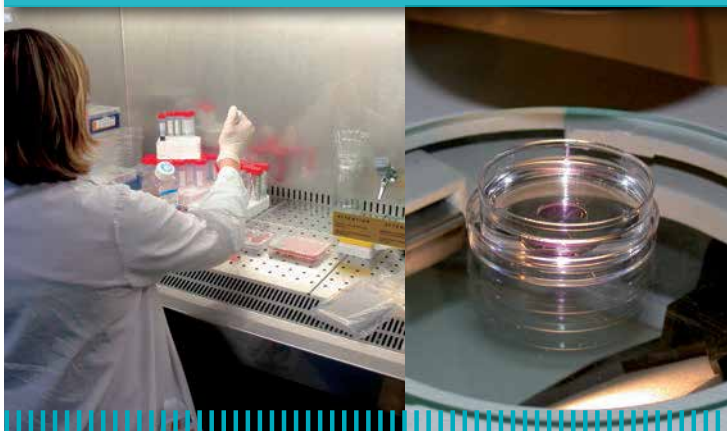
Health, pharmaceutical,
bio-industry / agriculture
agri-food

EQUIPMENT / TECHNICAL RESOURCES

Confocal laser scanning microscope,
Transgenesis, Microinjection, Real-time
quantitative and classical PCR /
Flow cytometry / Rapid cell
sorting, 3D flow imager/cytometry
Cell culture rooms

Competitiveness Clusters with which the laboratory is associated:

Cancer-Bio-Health



The scientific projects of the team are developed hand-in-hand with national and international bodies (in particular with the Cancéropôle Grand Sud-Ouest (Greater South-West Cancer Centre) and European networks). The team implements cutting-edge molecular and cell biology methods (in particular transgenesis and homologous recombination) for three types of research objectives:

- Fundamental: molecular mechanisms that regulate antibody production / study of genetic remodelling associated with the differentiation and maturation of immunity cells and more particularly B lymphocyte / biology of B lymphomagenesis B and tumour transformation / physiology of the normal B lymphocyte, etc.
- In relation to experimental medicine issues: development of mechanistic models for studying immunopathological or onco-hematological disorders / participation in clinical research / involvement with the National Reference Centre on amyloidosis and immunoglobulin deposition diseases / implementation of new diagnostic tools for lymphomas;
- Finalized: approaches that are specifically related to improving the diagnosis and treatment of tumoral (in particular hematological) and dysimmunitary pathologies / technological developments that focus on flow cytometry methods. This array of theme variations, which focuses mainly on the B lymphocyte, provides mutual benefit in the different research areas. Studying pathological mechanisms and possible therapeutic applications simultaneously promotes fundamental research and can occasionally guide it. The location within the medical cluster privileges interactions and complementarity between fundamental and clinical research.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 10
 EPST and EPIC researchers: 4
 HDR (accredited to direct research): 10
 Doctoral students (2011-2012): 10
 Engineers, technicians: 5
 Administrative agents: 2
 Dissertations defended (2008-2011): 11
 Current national projects: 1 ANR (French National Research Agency), 3 INCA (National Cancer Institute), 1 'free' ARC (Association for Cancer Research) project
 Other projects: Oseo/Region agreement.
 Industrial agreements: LFB, Beckman-Coulter, AMNIS

ECONOMIC ADDED VALUE

(2008-2011)

Number of patents filed: 2 licensed patents,
 1 software filed and 2 CNRS/University of Limoges
 co-owned patents
 Number of industrial or research agreements with major organizations: 2
 Start-up created as a result of research activities since 2005: B CELL DESIGN
 Conferences, seminars organized: 1

HONOURS

Michel Cogné: senior member of the IUF, Laureate of the French Academy of Medicine

PARTNERSHIPS

Active National University Partnerships:

UMR8126-CNRS IGR Villejuif / INSERM Montpellier (B. Klein) / INSERM U563, Purpan, Toulouse (P. Brousset) / Inserm Bichat, Paris (R. Monteiro) / IGBMC Strasbourg (B. Reina-San-Martin) / INSERM Paris Diderot (C. Francastel) / INSERM Pitié-Salpêtrière Paris (F. Davi)

Current International University Partnerships:

Pr. F.W. Alt (Boston) / Dr. B. Cortesy (Lausanne) / Dr. A. Kenter (Chicago) / Pr. G. Bornkamm (Munich) / Dr. O. Dewuyt, (Brussels) / Dr. M. Van Egmond (Amsterdam)
 CNB-CSIC Madrid Spain

Industrial Partnerships:

Beckman-Coulter, Fullerton, USA / CAYLA-Invivogen (Toulouse, -San Diego) / LFB (Lille) / Amnis corporation, (Seattle, USA) / Dendritics (Lyon) / B Cell Design (Limoges)

Research Groups (GDR):

ACCITH assessment research group (monoclonal antibody therapy)

Research Federation:

GEIST (FR 3503)

Control of the B Cell Immune Response and Lymphoproliferations

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Genomics, Environment, Immunity,
Health and Therapeutics
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Doctoral School

ED 524 Biology, Health «Biohealth»

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SCIENTIFIC PRODUCTION OF RESEARCH TEAM

(2008-2011)

Website publication: hal.archives-ouvertes.fr/CRIBL

Articles: 110 international and 110 in peer-reviewed journals

Book chapters: 5

Conference presentations: 50

Major publications and/or patents over the last 5 years

- Jaccard A, Moreau P, Leblond V, Leleu X, Benboubker L, Hermine O, Recher C, Asli B, Lioure B, Royer B, Jardin F, Bridoux F, Grosbois B, Jaubert J, Piette JC, Ronco P, Quet F, Cogné M, Feraud JP. "High-dose melphalan versus melphalan plus dexamethasone for AL amyloidosis". *N Engl J Med*. 2007; 13; 357:1083-93.
- Parrens M, Gachard N, Petit B, Marfak A, Troade E, Bouabdalla K, Milpied N, Merlio JP, de Mascarel A, Laurent C, Soubeyran I, Coste V, Labrousse F, Cogné M, Feuillard J. "Splenic marginal zone lymphomas and lymphoplasmacytic lymphomas originate from B-cell compartments with two different antigen-exposure histories". *Leukemia*. 2008; 22: 1621-4.
- Gostissa M, Yan CT, Bianco JM, Cogné M, Pinaud E, Alt FW. "Long-range oncogenic activation of Igh-c-myc translocations by the Igh 3' regulatory region". *Nature* 2009, 462: 803-807.
- Duchez S., Amin R., Cogné N., Delpy L., Sirac C., Pascal V., Corthésy B., Cogné M. "Premature replacement of mu with Ig alpha chains impairs lymphopoiesis and mucosal homing but promotes plasma cell maturation". *Proceedings of the National Academy of Sciences of the United States of America*, 2010-02 16; 107(7):3064-9.
- "Genomic deletion of the whole Igh 3' regulatory region (hs3a, hs1,2, hs3b, hs4) dramatically affects class switch recombination and Ig secretion to all isotypes". Vincent-Fabert C, Fiancette R, Pinaud E, Truffinet V, Cogné N, Cogné M, Denizot Y *Blood*, 2010, 116:1895-8.
- Coulon S., Dussiot M., D. Grapton, T. Trovati Macie, P. Huey Mei Wang, C. Callens, M. Kaushik Tiwari, S. Agarwal, A. Fricot, J. Vandekerckhove, H. Tamouza, Y. Zermati, J.A. Ribeil, K. Djedaini, Z. Oruc, V. Pascal, G. Courtois, B. Arnulf, M.A. Alyanaki, P. Mayeux, T. Leanderson, M. Benhamou, M. Cogné, R.C. Monteiro, O. Hermine and IC Moura. "Polymeric IgA1 controls erythroblast proliferation and accelerates erythropoiesis recovery in anemia". *Nature Medicine* 2011, 17: 1456-1465.
- Tinguely A, Chemin G, Péron S, Sirac C, Cogné M, Delpy L. "Cross Talk between Immunoglobulin Heavy-Chain Transcription and RNA Surveillance during B Cell Development". *Mol Cell Biol*. 2012; 32: 107-17.
- "A defect of the INK4-Cdk4 checkpoint and c-myc collaborate in MCL-like lymphoma formation in mice". Vincent-Fabert C, Fiancette R, Rouaud P, Baudet C, Truffinet V, Magnone V, Cogné M, Dubus P, Denizot Y. *Amer J Pathol* 2012; 180:1688-701.
- Péron S, Laffleur B, Denis-Lagache N, Cook-Moreau J, Tinguely A, Delpy L, Denizot Y, Pinaud E, Cogné M. "Ig heavy chain locus suicide recombination in mature B cells". *Science* 2012, 336: 931-934.
- Gachard N, Parrens M, Soubeyran I, Petit B, Marfak A, Rizzo D, Devesa M, Delage- Corre M, Coste V, Laforêt MP, Mascarel AD, Merlio JP, Bouabdalla K, Milpied N, Soubeyran P, Schmitt A, Bordessoule D, Cogné M, Feuillard J. "IGHV gene features and MYD88 L265P mutation separate MZ lymphoma entities and Waldenström Macroglobulinemia". *Leukemia* 2012 doi: 10.1038/leu.2012.257.



UMR 1061 INRA

**Animal Molecular
Genetics Unit
(UGMA)**

RESEARCH
THEMES >

Glycobiology
Muscle
Differentiation
Genetic Determinism
of Muscle Development
Genetic Determinism
of Meat Quality
Bovine Genomics

KEYWORDS >

Cellular
Differentiation
Evolution
Molecular Genetics
Genomics
Genotyping

Glycosylation
Muscle
SNP
Transcriptome
Mouse and Bovine
Models

2012

UGMA

Animal Molecular Genetics Unit

INDUSTRIAL APPLICATIONS

Transcriptomics
Proteomics
DNA sequencing
Detection and analysis of
genetic polymorphisms
Support for selecting beef
breed animals
Genomic selection

SERVICES PROVIDED

Characterization, trials, testing
Advice, expertise, training
Research and development

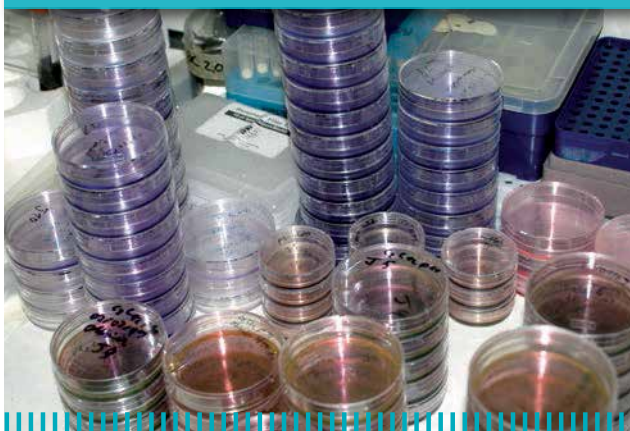
FIELDS OF APPLICATION

Bovine genomics, Agronomy, Health
Agriculture, Agri-food

EQUIPMENT / TECHNICAL RESOURCES

Tools for DNA, RNA and protein analysis
Tools for cell assays

**Competitiveness Clusters with which
the laboratory is associated:**
Innoviandes

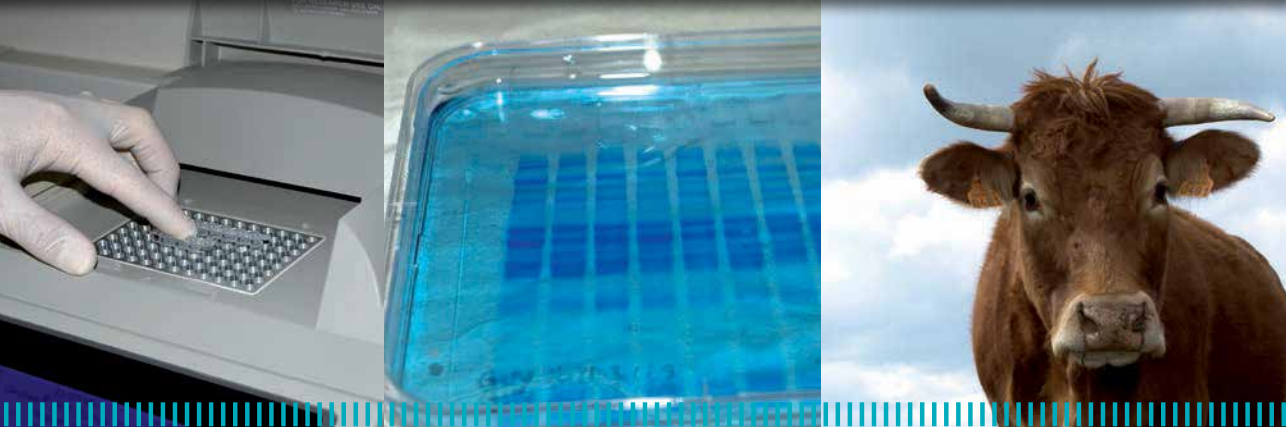


The scientific aim of the UMR1061 (Joint Research Team) is to contribute to the improvement of knowledge of the bovine genome, in particular to better understand how genetic variability controls the phenotypic variability of some traits of agronomic interest.

Our projects focus on genes that are likely to regulate the early stages of muscle differentiation and muscle development as well as genes that may control sensory properties of meat. We are involved in genome screening based on high-throughput genotyping and on transcriptomic and proteomic analysis, with the dual aim to identify (i) regions of the genome and target genes for further functional genomics analysis, and (ii) genetic markers that can be used for selection.

We use integrative biology, genetics, epigenetics and functional genomics methods. We work with animal models in order to address fundamental scientific issues and we validate concepts in application models (livestock animals), in particular in bovines.

These scientific objectives lean on 3 complementary theme-based groups: (i) Glycosylation and Myogenesis, (ii) Muscle Development and Animal Models, (iii) Functional Analysis of genes involved in traits of interest in cattle.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 15
 EPST and EPIC researchers: 2
 Other researchers: 1
 HDR (accredited to direct research): 6
 Doctoral students (2011-2012): 10
 Engineers, technicians: 6
 Administrative agents: 1
 Dissertations defended (2008-2011): 12
 Current national projects: 2 INRA
 Current European projects: 1 Franco-Hungarian project
 Other projects: 2 international cooperation projects

ECONOMIC ADDED VALUE

(2008 - 2011)

Number of patents filed: 2 with the INRA
 Industrial or research agreements with major organizations: 10
 Start-up created as a result of research activities since 2005: Glycode
 National conferences, seminars organized: 2

PARTNERSHIPS

Active National University Partnerships:

University of Lille, Blaise Pascal University-Clermont-Ferrand, University of Auvergne Clermont-Ferrand, Pasteur Institute Paris, INSERM U602, University of Paris 11-South, University of Montpellier

Current International University Partnerships:

University of Pisa (Italy)
 University of Bologna (Italy)
 Lebanese University (Lebanon)
 Debrecen University (Hungary)
 Pécs University (Hungary)
 Blida University (Algeria)

National Industrial Partnerships:

Institute of Animal Husbandry, UNCEIA (National Association of Livestock and Artificial Insemination Cooperatives), Ingenomix, Lanaud Centre, Melipharm

Partnerships with National Organizations and Institutions:

CNRS, INSERM

Scientific Interest Groups (GIS):

Viandes et Produits Carnés (Innoviandes) Competitiveness Cluster
 CELEGEN (Limousin Centre for Exploitation of the Bovine Genome)
 AGENAE (Genomics Analysis of Livestock)

Research Federation:

GEIST (FR3503)

Animal Molecular Genetics Unit (UGMA)

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Health and Therapeutics
(FR 3503 GEIST)

Doctoral School

ED 524 Biology, Health «Biohealth»

biosante.ed.univ-poitiers.fr



SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

Website publication: hal-unilim.archives-ouvertes.fr

Articles: 79 in peer-reviewed journals

Number of works: 5

Conference presentations: 240

Major publications and/or patents over the last 5 years

- Janot M., Audfray A., Loriol C., Germot A., Maftah A. and Dupuy F. (2009) "Glycogenome expression dynamics during mouse C2C12 myoblast differentiation suggests a sequential reorganization of membrane glycoconjugates". BMC Genomics, 10: 483.
- Laporte, B., Gonzalez-Hilarion, S., Maftah, A., Petit, J.M. (2009) "The second bovine - Galactoside 2.6 sialyltransferase (ST6Gal II): genomic organization and stimulation of its in vitro expression by IL-6 in bovine mammary gland epithelial cells". Glycobiology 19, 1082–1093.
- Williams J.L., Dunner S.; Valentini A., Mazza R., Amarger V., Checa M.L., Crisà A., Razzaq D. Delourme D., Grandjean F., Marchitelli C., Garcia D., Pérez Gomez R., Negrini R., Ajmone-Marsan, P. and Levéziel H. 2009. "Discovery, characterization and validation of single nucleotide polymorphisms within 206 bovine genes that may be considered as candidate genes for beef production and quality". Animal Genetics, 40, 486-491.
- Martin R, Chantepie S, Chapuis J, Le-Duc A, Maftah A, Papy-Garcia D, Laude H, Petit JM, Gallet PF. 2011. "Variation in Chst8 gene expression level affects PrP(C) to PrP(Sc) conversion efficiency in prion-infected Mov cells". Biochem Biophys Res Commun. 2011 Oct 1. [Epub ahead of print]
- L. Magnol, O. Monestier, K. Vuillier-Devillers, S. Wagner, O. Cocquempot, M. C. Chevallier and V. Blanquet. (2011). "A sensitised mutagenesis screen in the mouse to explore the bovine genome: study of muscle characteristics". Animal, 5: 663-671.
- X. Blanchet, A. Péré-Brissaud, N. Duprat, E. Pinault, D. Delourme, A. Ouali, C. Combet, A. Maftah, P. Pélissier and L. Brémaud. (2012). "Mutagenesis of the bovSERPINA3-3 demonstrates the requirement of aspartate-371 for inter-molecular interaction and formation of dimmers". Protein Science, 21 (7): 277- 286.
- R. Ciampolini, F. Cecchi, A. Spaterna, A. Bramante, S. M. Bardet and A. Oulmouden. (2012). "Characterization of different 5'-untranslated exons of the ASIP gene in black-and-tan Doberman Pinscher and brindle Boxer dogs". Animal genetics, April 24th
- Brun C, Monestier O, Legardinier S, Maftah A, Blanquet V. "Murine GASP-1 N-Glycosylation is not Essential for its Activity on C2C12 Myogenic Cells but Alters its Secretion". Cell Physiol Biochem. 2012; 30(3): 791-804.
- Laporte B, Petit DP, Rocha D, Boussaha M, Grohs C, Maftah A, Petit JM. "Characterization of bovine FUT7 furthers understanding of FUT7 evolution in mammals". BMC Genet. 2012 Aug 21; 13(1):74.
- Monestier O, Brun C, Cocquempot O, Petit D, Blanquet V. "GASP/WFIKKN Proteins: Evolutionary Aspects of Their Functions". PLoS One. 2012; 7(8):e43710. Epub 2012 Aug 24.



UMR-S850 INSERM

Pharmacology of immunosuppressive drugs and transplantation

RESEARCH
THEMES >

Pharmacology of
immunosuppressive drugs and
antivirals on transplant patients

KEYWORDS >

Pharmacokinetics
Pharmacogenetics
Biomarkers
Toxicity
Pharmaco-
epidemiology

Pharmaco-economy
Translational Research
Clinical Research
Transplantation
Immunosuppressive
Drugs

2012

Pharmacology of immunosuppressive drugs in transplantation

INDUSTRIAL APPLICATIONS

The ABIS/ISBA website on individualized dosing for transplant patients, developed based on the UMR-S850 results, received over 9,000 requests in 2011, from more than 60 transplant units, including a dozen foreign units (Europe, North America, South America and North Africa). The site's activity in France is financed through inter-hospital invoicing. (<https://pharmaco.chu-limoges.fr>)

SERVICES PROVIDED

"Advice, expertise, training": the team provides clinicians and biologists with access to its tools for adapting the dose of immunosuppressive drugs, via a website hosted by Limoges University Hospital (CHU).

FIELDS OF APPLICATION

Health, pharmaceutical, bio-industry: pharmacology, organ transplants

EQUIPMENT / TECHNICAL RESOURCES

Mass spectrometry
Proteomic analysis
Pharmacokinetic modelling
PCR, real-time PCR
Cell culture
Molecular biology



The S-850 Joint Research Unit carries out translational research on drugs used in transplants with the aim of optimizing their benefit/risk balance, based on a personalized medicine approach.

This research focuses on:

- Identifying pharmacokinetic, pharmacogenetic, pharmacodynamic and environmental factors of (therapeutic and toxic) response variability.
- Validating the clinical and medico-economic interest of this personalized medicine.
- Describing and modelling the therapeutic and adverse effects of immunosuppressive drugs in the long-term and their impact on grafts survival.
- Understanding the molecular mechanisms of the renal and cardiovascular adverse effects of these drugs.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 8

Other researchers: 7

HDR (habilitated to direct research): 7

Doctoral students in 2011-2012: 6

Engineers, technicians: 7

Administrative agents: 1

PhD theses defended (2008-2011): 8

Current national projects: 1 INSERM joint venture agreement for hospitals.

Participation in the ANR GENOPAT agreement.

Others: Several clinical research projects, financed by the French national PHRC (Clinical Research Hospital Programme),

1 inter-regional tender, the AFSSAPS (French Agency for the Safety of Health Products), French Biomedicine Agency, the French Cancer League, the French Cysticfibrosis Association - Vaincre la Mucoviscidose and the Limousin Organizing Committee for Cancer Research (CORC)

ECONOMIC ADDED VALUE

(2008-2011)

Number of industrial or research agreements with major organizations: 6
Conferences, seminars organized: 2

Research Federation:
GEIST (FR 3503)

PARTNERSHIPS

Active National University Partnerships:

Pharmacology of Immunosuppressive Drugs (Besançon University Hospital), Pharmacogenetics (INSERM U775, Paris Descartes University), PK and PK/PD Modelling (Dr. Saïk Urien, DR INSERM, CIC-0901, Univ. Paris Descartes), Proteomics and Biomarkers (6 French partners in the European BIOMARGIN project coordinated by the 850 Joint Research Unit); clinical trials with kidney, liver, heart and lung transplant centre networks; clinical transfer of personalized medicine tools via the unit's website, which is used by around forty transplant units in France

Current International University Partnerships:

Pharmacology of Immunosuppressive Drugs (in Belgium, the Netherlands and Germany), Pharmacokinetics (The Centre for Pharmacogenomics at UCSF, USA), PK, PK/PD and Pathology Modelling (L.A. PK lab, USC, USA; N. Holford, Univ. Auckland, New Zealand); Proteomics and Biomarkers (5 partners with Germany, Belgium, Sweden and the Netherlands in the European BIOMARGIN project, coordinated by the 850 Joint Research Unit); lung transplant clinical trials (Hospital Erasme, Brussels); clinical transfer of personalized medicine tools via the unit's website, which is used by a dozen international transplant units (European, American, Asian and North African).

National Industrial Partnerships:

Agreements with the pharmaceutical industry (Roche Pharma, Novartis, Astellas) for developing tools for adapting the dose of immunosuppressive drugs. Agreements with the diagnostic industry (Abbott, Roche Diagnostics, Siemens) for validating new diagnostic tests.

International Industrial Partnerships:

- Agreements with the pharmaceutical industry (Roche Pharma, Astellas, BMS) for pharmacokinetic studies and for developing tools for adapting the dose of immunosuppressive drugs.
- Agreements with the diagnostic industry (Abbott, Roche Diagnostics, Siemens) for validating new diagnostic tests.
- Agreements with the instrumentation industry (Thermo, Waters) for assessing new equipment.

Partnerships with National Organizations and Institutions:
INSERM – CHU (University Hospital) of Limoges

Pharmacology of immunosuppressive drugs and transplantation

www.toulouse.inserm.fr/site/limoges

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Doctoral School

ED 524: Biology-Health

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SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

Website publication: hal.archives-ouvertes.fr/UMR-S850

Articles: 94 international and 94 in peer-reviewed journals

Number of works: 1

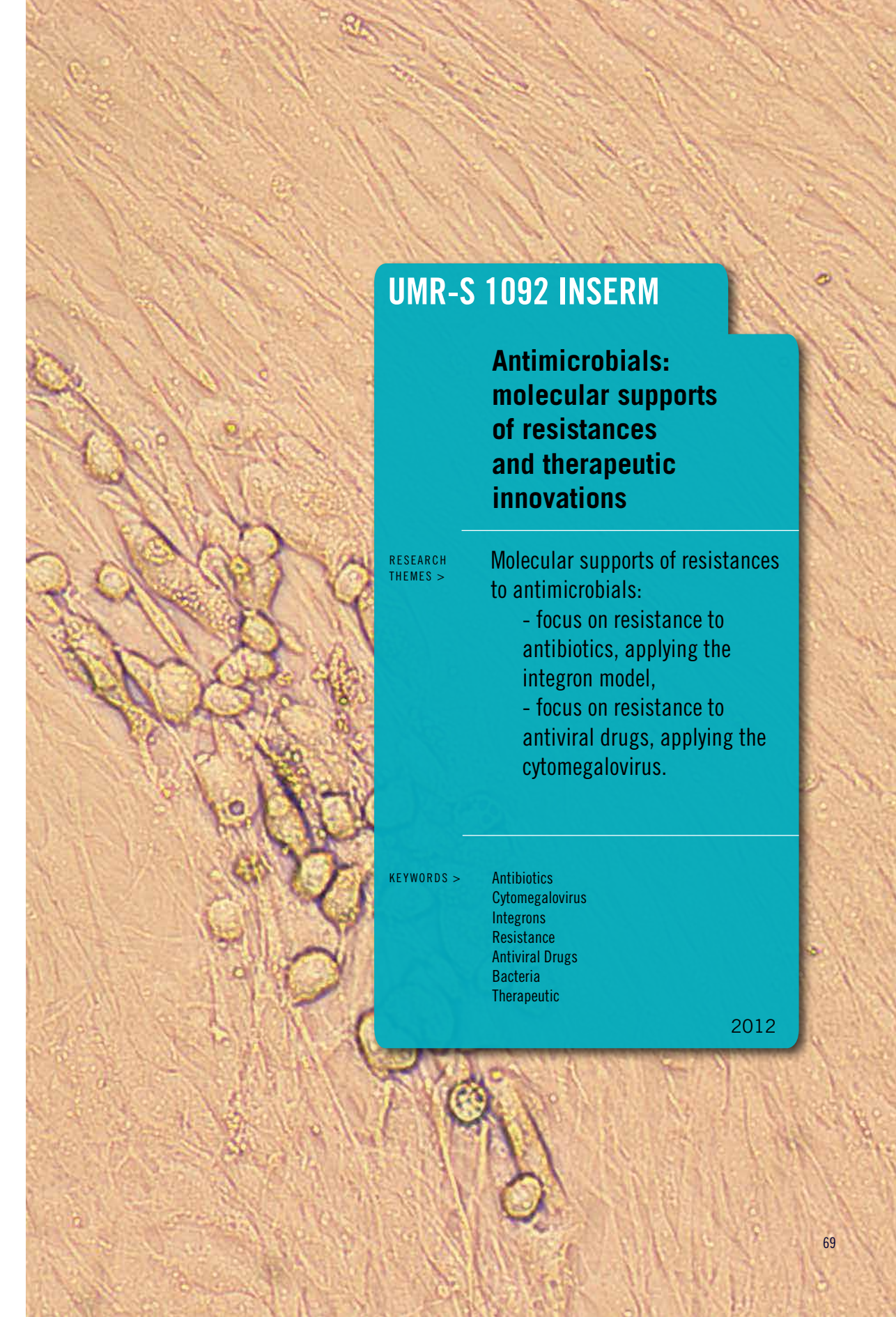
Books chapters: 3

Conference presentations: 20 national and 41 international

Others: 66 invited lectures and 5 presentations displayed without proceedings

Major publications and/or patents over the last 5 years

- Sauvage FL, Gaulier JM, Lachâtre G, Marquet P. "Pitfalls and Prevention Strategies for Liquid Chromatography-Tandem Mass Spectrometry in the Selected Reaction Monitoring Mode for Drug Analysis". Clin Chem. 2008; 54(9):1519-27
- Benkali K, Marquet P, Rérolle JP, Le Meur Y, Gastinel L. "A new strategy for faster urinary biomarkers identification by Nano-LC-MALDI-TOF/TOF mass spectrometry". BMC Genomics. 2008; 9:541
- Gensburger O, Picard N, Marquet P. "Effect of mycophenolate acyl-glucuronide on human recombinant type 2 inosine monophosphate dehydrogenase". Clin Chem. 2009; 55(5):986-93
- Rousseau A et al. "Cost-Effectiveness Analysis of Individualized Mycophenolate Mofetil Dosing in Kidney Transplant Patients in the APOMYGRE Trial". Transplantation. 2010; 89(10):1255-62
- Picard N, Yee SW, Woillard JB, Lebranchu Y, Le Meur Y, Giacomini KM, Marquet P. "The Role of Organic Anion Transporting Polypeptides and their common Genetic Variants in Mycophenolic Acid Pharmacokinetics". Clin Pharmacol Ther. 2010; 87(1):100-8
- Woillard JB, Rérolle JP, Picard N, Rousseau A, Guillaudeau A, Munteanu E, Essig M, Drouet M, Le Meur Y, Marquet P. "Donor P-gp polymorphisms strongly influence renal function and graft loss in a cohort of renal transplant recipients on cyclosporine therapy in a long-term follow-up". Clin Pharmacol Ther. 2010; 88(1):95-100
- Marquet P. "Counterpoint: Is Pharmacokinetic or Pharmacodynamic Monitoring of Calcineurin Inhibition Therapy Necessary?" Clin Chem. 2010 May; 56(5):736-9
- Lamoureux F, Mestre E, Essig M, Sauvage FL, Marquet P, Gastinel LN. "Quantitative proteomic analysis of cyclosporine-induced toxicity in a human kidney cell line and comparison with tacrolimus". J Proteomics. 2011 Dec 21; 75(2):677-94.
- Descazeaud V, Mestre E, Marquet P, Essig M. "Calcineurin regulation of cytoskeleton organization: a new paradigm to analyse the effects of calcineurin inhibitors on the kidney". J Cell Mol Med. 2012 Feb; 16(2):218-27.
- Monchaud C, de Winter BC, Knoop C, Estenne M, Reynaud-Gaubert M, Pison C, Stern M, Kessler R, Guillemain R, Marquet P, Rousseau A. "Population pharmacokinetic modelling and design of a bayesian estimator for therapeutic drug monitoring of tacrolimus in lung transplantation". Clin Pharmacokinet. 2012 Mar 1; 51(3):175-86



UMR-S 1092 INSERM

Antimicrobials: molecular supports of resistances and therapeutic innovations

RESEARCH THEMES >

Molecular supports of resistances to antimicrobials:

- focus on resistance to antibiotics, applying the integron model,
- focus on resistance to antiviral drugs, applying the cytomegalovirus.

KEYWORDS >

Antibiotics
Cytomegalovirus
Integrons
Resistance
Antiviral Drugs
Bacteria
Therapeutic

2012

Antimicrobials: Molecular Supports of Resistances and Therapeutic Innovations

SERVICES PROVIDED

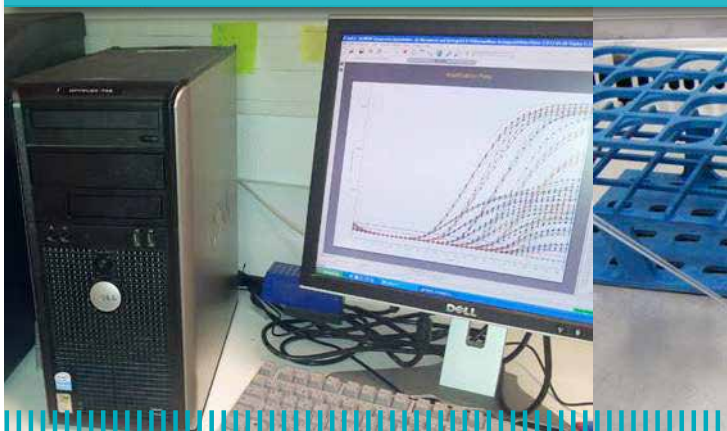
Characterization, trials, testing,
formulation monitoring,
Advice, expertise, training,
Research and development

FIELDS OF APPLICATION

Environment
Health, pharmaceutical, bio-industry

EQUIPMENT / TECHNICAL RESOURCES

Thermal cycler, real-time PCR
equipment, fluorescence
microscope, Gel Doc, pulsed-field gel
electrophoresis / cell culture / large
cytomegalovirus strains bank (National
Reference Centre), bacterial strains
bank, in particular antibiotics multi-
resistant strains



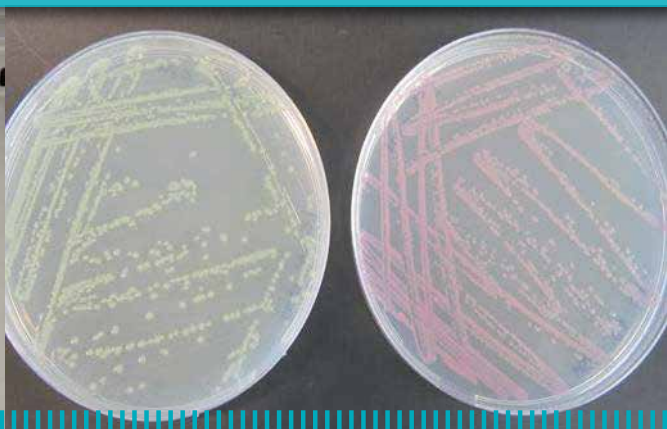
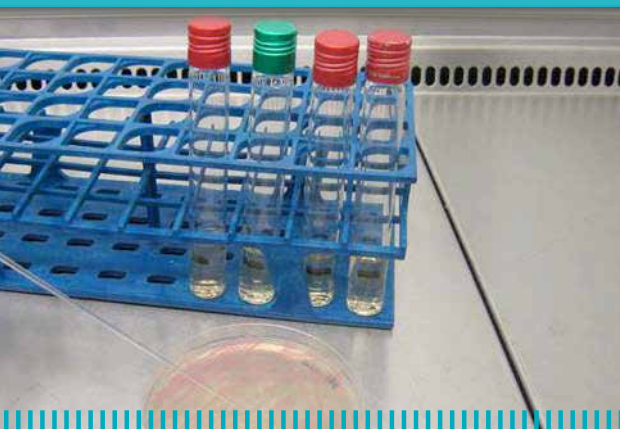
The unit carries out research in two areas:

Resistance to antibiotics:

- Study of integrase expression and integron cassette rearrangement in vitro and in vivo.
- Integron epidemiology in humans, animals and the environment.
- Relevance of integrons detection as an antibiotic resistance marker.

Cytomegalovirus:

- Characterization of new CMV mutations observed in transplant patients.
- Study of the CMV DNA packaging complex for the development of new antiviral drugs targeting this complex.
- Development of a first trimester placental explant model, cultivated in vitro or transplanted to a SCID mouse to study viral replication kinetics and the impact on the cell environment.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 9

Other researchers: 7

HDR (accredited to direct research): 7

Doctoral students (2011-2012): 7

Engineers, technicians: 0.3 ETP

Dissertations defended (2008-2011): 5

National projects: 1 Inserm DGOS (French General Directorate for Healthcare) translational research agreement, 2 ANR and

2 national PHRC (Clinical Research Hospital Programme)

European project: 1 Pills project in partnership with the GRESE laboratory, University of Limoges

Others: Integrons and corynebacteria (Financed by the FRM (Foundation for Medical Research in France))

ECONOMIC ADDED VALUE

(2008-2011)

Number of patents filed: 1 patent filed in the USA in September 2010 with Inserm Transfert

Industrial or research agreements with major organizations: 1

Conferences, seminars organized: 3

HONOURS

Marie Cécile Ploy: Robert Debré Medical Research Award

PARTNERSHIPS

Active National University Partnerships:

Bacterial Genome Plasticity Unit, Pasteur Institute, Paris

National Reference Centre for Toxin-Producing Corynebacteria, Pasteur Institute, Paris

Crystallography and Biological NMR Laboratory, UMR 8015 CNRS, Paris, Unit of Virus Host Cell Interactions, UJF-EMBL CNRS UMI3265, Grenoble

Current International University Partnerships:

Virology department, Medical School Hanover, Germany

Virology Division, Prince of Wales Hospital, Australia

Research Federation: GEIST (FR 3503)

Antimicrobials: Molecular Supports of Resistances and Therapeutic Innovations

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Co-Director:

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Parent Institute

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Doctoral School

ED 524: Biology, Health «Biohealth»

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SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

Website publication: hal.archives-ouvertes.fr/UMR-S1092

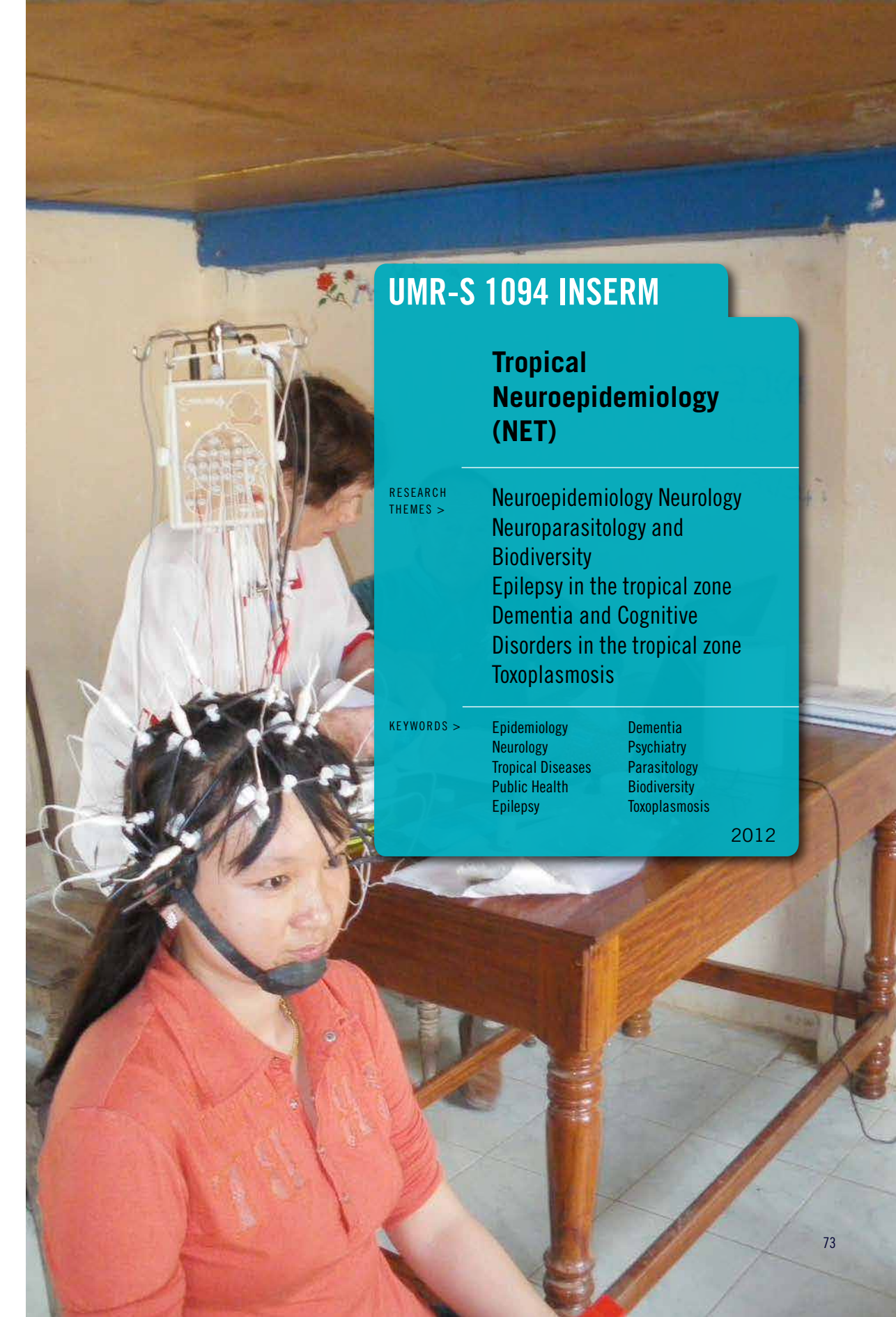
International articles: 22

Number of works: 1

Conference presentations: 41 international and 29 national

Major publications and/or patents over the last 5 years

- Barraud O, Badell E, Denis F, Guiso N, Ploy M-C.
"Antimicrobial drug resistance in *Corynebacterium diphtheriae* mitis". *Emerg Infect Dis.* 2011 ;17:2078-80. IF: 6,794
- Jove T., Da Re S., Denis F., Mazel D., Ploy M-C.
"Inverse correlation between promoter strength and excision activity in class 1 integrons". *PLoS Genetics*, 2010; 6. IF: 9,532
- Hantz S, Garnier-Geoffroy F, Mazon M-C, Garrigue I, Merville P, Mengelle C, Rostaing L, Saint-Marcoux F, Essig M, Rerolle J-P, Cotin S, Germe R, Pillet S, Lebranchu Y, Turlure P, and Alain S. for the French CMV resistance survey study group. "Cytomegalovirus resistance in transplant recipients: a French cohort study". *J. Antimicrob. Chemother.* 2010; 65: 2628-40. IF: 4,659
- Barraud O, Baclet M-C, Denis F, Ploy M-C.
"Quantitative multiplex real-time PCR for detecting class 1, 2 and 3 integrons". *J Antimicrob Chemother.* 2010; 65:1642-5. IF: 4,659
- Couvreur A, Hantz S, Marquant R, Champier G, Alain S, Morellet N, Bouaziz S. "Insight into the structure of the pUL89 C-terminal domain of the human cytomegalovirus terminase complex". *Proteins.* 2010; 78: 1520-30 IF: 3,419
- Grosjean J, Hantz S, Cotin S, Baclet M-C, Trapes L, Mengelle C, Virey B, Undreiner F, Brosset P, Pasquier C, Denis F, Alain S.
"Rapid genotyping of cytomegalovirus envelope glycoproteins from toddler's saliva". *Journal of Clinical Virology.* 2009; 46 Suppl 4:S43-8 IF: 3,323
- Guérin E, Cambray G, Sanchez-Alberola N, Campoy S, Erill I, Da Re S, Gonzales-Zorn B, Barbe J, Ploy M-C, Mazel D.
"The SOS response controls integron recombination". *Science*, 2009; 324: 1034. IF: 29,747
- Da Re S, Garnier F, Guérin E, Denis F, Ploy M-C.
"The SOS response promotes qnrB quinolone resistance determinant expression". *EMBO reports*, 2009; 10: 929-933. IF: 6,907
- Hantz S, Couvreur A, Champier G, Trapes L, Cotin S, Bouaziz S, Denis F, Alain S.
"Conserved domains and structure prediction of human cytomegalovirus pUL27 protein". *Antiviral Therapy*, 2009; 14: 663-672 IF: 4,322
- Loustaud-Ratti V, Alain S, Rousseau A, Fouchard Hubert I, Sauvage F-L, Marquet P, Denis F, Calès P, Lefebvre A, Fauchais A-L, Liozon E, Vidal E. "Ribavirin exposure after the first dose is predictive of sustained virological response in chronic hepatitis C". *Hepatology*, 2008; 47: 1453-1461. IF: 10,840



UMR-S 1094 INSERM

Tropical Neuroepidemiology (NET)

RESEARCH THEMES >

Neuroepidemiology Neurology
Neuroparasitology and
Biodiversity
Epilepsy in the tropical zone
Dementia and Cognitive
Disorders in the tropical zone
Toxoplasmosis

KEYWORDS >

Epidemiology
Neurology
Tropical Diseases
Public Health
Epilepsy

Dementia
Psychiatry
Parasitology
Biodiversity
Toxoplasmosis

2012

NET

Tropical Neuroepidemiology

SERVICES PROVIDED

Expertise in research methodology,
data management
and biostatistics

INDUSTRIAL APPLICATIONS

Pharmaceutical industry

FIELDS OF APPLICATION

Health, pharmaceutical, bio-industry

EQUIPMENT / TECHNICAL RESOURCES

Data management and statistical
analysis platform (CEBIMER)
National Reference Centre for
Toxoplasmosis



The “Tropical Neuroepidemiology” Unit from the Tropical Neurology Institute of Limoges is the only team in Europe that carries out tropical neuroepidemiology research and, as such, its expertise is acknowledged in this field. The epidemiological transition in tropical countries, the existence of specific environmental and genetic factors and the consequences of neurological affections for public health, justify the development of research programmes in these regions of the world.

In the project proposed, the team focuses on a mutual objective: the epidemiology of neurological affections or with neurological consequences in tropical zones. The study of dementia is a major line of research of this project. The development of tools in temperate zones and the acquisition of research projects provide the opportunity to assess the epidemiological indicators of dementia and related syndromes and to compare them between urban and rural areas, to study risk factors and to determine the neuropsychological profiles of dementia subjects. The study of amyotrophic lateral sclerosis begins in tropical zones and a cohort of incident cases will be established through the Tropical NeuroEpidemiological Network (NET@work). Research on epilepsy is advancing towards developing response and care management strategies. Work on neuroparasitosis is totally focused on toxoplasmosis. The molecular epidemiology theme continues and is currently directed towards neurological and ocular forms.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 13
 Other researchers: 13
 HDR (accredited to direct research): 13
 Doctoral students (2011-2012): 15
 Engineers, technicians: 2.6
 Administrative agents: 1.5
 Dissertations defended (2008-2011): 18
 Current national projects: 10
 (including 2 ANR coordinated by the Unit)

ECONOMIC ADDED VALUE

(2008-2011)

Number of industrial or research
 agreements with major organizations: 1
 Conferences, seminars organized: 5
 national and 5 international

PARTNERSHIPS

Active National University Partnerships:

Centre Inserm U897 Bordeaux, Inserm U744 Lille, CNRS UMR5558, Biometry and Evolutionary Biology Laboratory, Villeurbanne, EA 3800, University of Reims, Pasteur Institute, IRD Montpellier, GEMI Unit, French Ministry for Agriculture, France, UMR 5163 CNRS (Adaptation and Pathogenesis of Micro-organisms-Grenoble) University of the French West Indies and Guiana

Current International University Partnerships:

EURALS Consortium (European Research Consortium on ALS). Department of Parasitic Disease Epidemiology, Malaria Research and Training Centre, Bamako, Mali. Franceville International Medical Research Centre, Gabon. Epidemiology and Biostatistics Department, University of Oklahoma, USA. Parasitology Department, Libreville, Gabon. Department of Preventive and Family Medicine, University of California, San Diego, USA. Institute of Francophone Countries for Tropical Medicine (AUF - Association of Francophone Universities), Vientiane, Laos. Antwerp Tropical Medicine Institute, Belgium. Institute of Neurology, National Autonomous University of Mexico, Mexico City, Mexico. Swiss Tropical Institute, Basel, Switzerland. National Public Health Laboratory, Brazzaville, Congo. Scientific Institute of Public Health, National Reference Centre for Toxoplasmosis, Engelandstraat, Brussels, Belgium. Neuroepidemiology Section, Institute of Neurology, Montevideo, Uruguay. Neuroepidemiology Unit, Department of Neurology, Catania, Italy. Neuroepidemiology Unit, University of Bari, Italy. University of Washington, Missouri, USA. University of Tennessee, USA.

National Industrial Partnerships:

Sanofi – Access to Medicine Department

International Industrial Partnerships:

CNRS Statistics & Health Research Group

Research Federation (RF):

GEIST (FR 3503)
 FREDD (FR 3097)

Tropical Neuroepidemiology (NET)

www-ient.unilim.fr

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Doctoral School

ED523: GAY LUSSAC "Environmental
Sciences"

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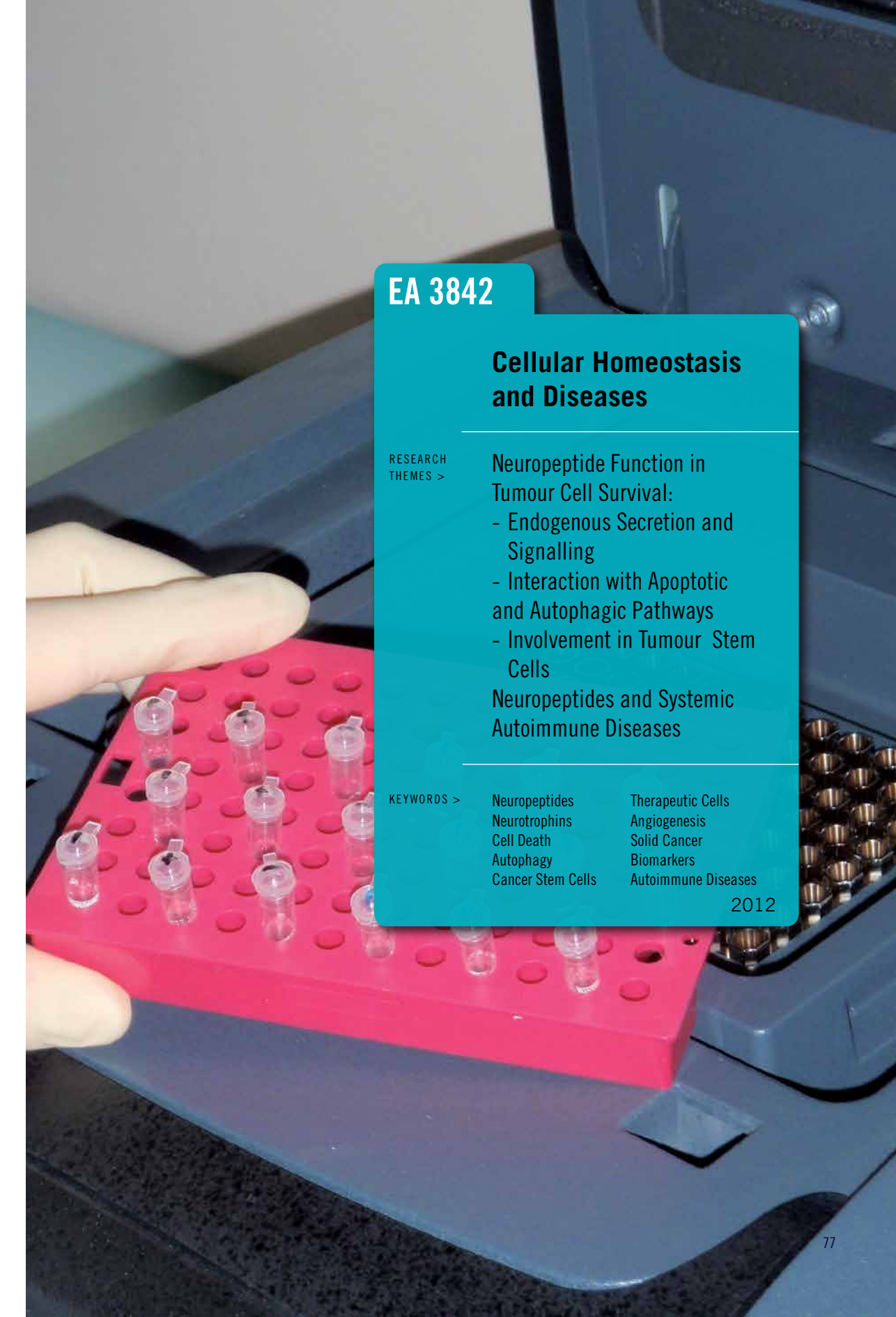


SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

Website publication: hal-unilim.archives-ouvertes.fr/NET
Articles: 255 international and 225 in peer-reviewed journals
Number of works: 3
Book chapters: 25
Conference presentations: 199
Others: 87

Major publications and/or patents over the last 5 years

- Ngougou EB, Preux PM. "Cerebral malaria and epilepsy". *Epilepsia*. 2008 Aug; 49 Suppl 6:19-24. PubMed PMID: 18754957.
- Joubert J, Prentice LF, Moulin T, Liaw ST, Joubert LB, Preux PM, Ware D, Medeiros de Bustos E, McLean A. "Stroke in rural areas and small communities". *Stroke*. 2008 Jun; 39(6):1920-8. Epub 2008 Apr 17. Review. PubMed PMID: 18420955.
- Rafael F, Houinato D, Nubukpo P, Dubreuil CM, Tran DS, Odermatt P, Clément JP, Weiss MG, Preux PM. "Sociocultural and psychological features of perceived stigma reported by people with epilepsy in Benin". *Epilepsia*. 2010 Jun; 51(6):1061-8. Epub 2010 Feb 3. PubMed PMID: 20132293.
- Guerchet M, M'belesso P, Mouanga AM, Bandzouzi B, Tabo A, Houinato DS, Paraïso MN, Cowppli-Bony P, Nubukpo P, Aboyans V, Clément JP, Dartigues JF, Preux PM. "Prevalence of dementia in elderly living in two cities of Central Africa: the EDAC survey". *Dement Geriatr Cogn Disord*. 2010; 30(3):261-8. Epub 2010 Sep 16. PubMed PMID: 20847557.
- Ajzenberg D, Collinet F, Mercier A, Vignoles P, Dardé ML. "Genotyping of *Toxoplasma gondii* isolates with 15 microsatellite markers in a single multiplex PCR assay". *J Clin Microbiol*. 2010 Dec; 48(12):4641-5. Epub 2010 Sep 29. PubMed PMID: 20881166; PubMed Central PMCID: PMC3008440.
- Mercier A, Devillard S, Ngoubangoye B, Bonhabau H, Bañuls AL, Durand P, Salle B, Ajzenberg D, Dardé ML. "Additional haplogroups of *Toxoplasma gondii* out of Africa: population structure and mouse-virulence of strains from Gabon". *PLoS Negl Trop Dis*. 2010 Nov 2; 4(11): e876. PubMed PMID: 21072237; PubMed Central PMCID: PMC2970538.
- Aboyans V, Kaminen A, Allison MA, McDermott MM, Crouse JR, Ni H, Szklo M, Criqui MH. "The epidemiology of subclavian stenosis and its association with markers of subclinical atherosclerosis: the Multi-Ethnic Study of Atherosclerosis (MESA)". *Atherosclerosis*. 2010 Jul; 211(1):266-70. Epub 2010 Jan 21. PubMed PMID: 20138280; PubMed Central PMCID: PMC2925848.
- Marin B, Desport JC, Kajeu P, Jesus P, Nicolaud B, Nicol M, Preux PM, Couratier P. "Alteration of nutritional status at diagnosis is a prognostic factor for survival of amyotrophic lateral sclerosis patients". *J Neurol Neurosurg Psychiatry*. 2011 Jun; 82(6):628-34. Epub 2010 Nov 19. PubMed PMID: 21097551.
- Yemadje LP, Houinato D, Quet F, Druet-Cabanac M, Preux PM. "Understanding the differences in prevalence of epilepsy in tropical regions". *Epilepsia*. 2011 Aug; 52(8):1376-81. doi: 10.1111/j.1528-1167.2011.03099.x. Epub 2011 May 31. Review. PubMed PMID: 21627649.
- Preux PM, Chea K, Chamroeun H, Bhalla D, Vannareth M, Huc P, Samleng C, Cayreyre M, Gérard D, Dumas M, Oum S. "First-ever, door-to-door cross-sectional representative study in Prey Veng province (Cambodia)". *Epilepsia*. 2011 Aug; 52(8):1382-7. doi: 10.1111/j.1528-1167.2011.03102.x. Epub 2011 Jun 2. PubMed PMID: 21635234.



EA 3842

Cellular Homeostasis and Diseases

RESEARCH
THEMES >

Neuropeptide Function in
Tumour Cell Survival:

- Endogenous Secretion and Signalling
- Interaction with Apoptotic and Autophagic Pathways
- Involvement in Tumour Stem Cells

Neuropeptides and Systemic
Autoimmune Diseases

KEYWORDS >

Neuropeptides
Neurotrophins
Cell Death
Autophagy
Cancer Stem Cells

Therapeutic Cells
Angiogenesis
Solid Cancer
Biomarkers
Autoimmune Diseases

2012

Cellular Homeostasis and Diseases

INDUSTRIAL APPLICATIONS

Studies of drug-candidate molecules
Knowledge transfer and promotion activities

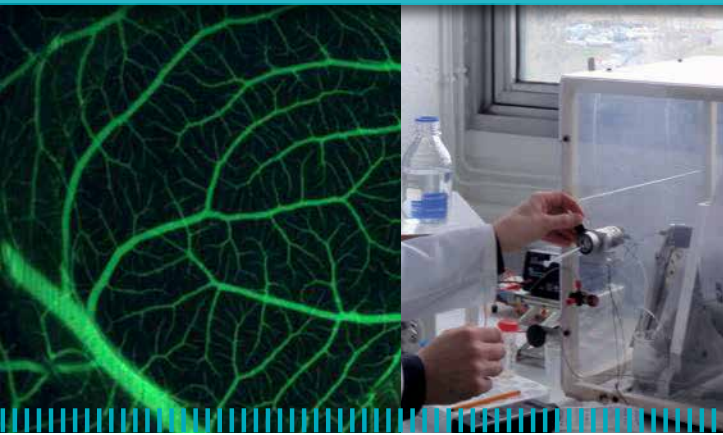
FIELDS OF APPLICATION

Health, bio-industry

EQUIPMENT / TECHNICAL RESOURCES

Sd FFF (fractionation)
cell sorting equipment
Cryostat, fluorescence microscopy
Fluorescence binocular loupe for microsurgery
Stereotaxy equipment
Electroporator for in vivo transfection
Experimental tumour model on chorioallantoic membrane (CAM)
RT - PCR and equipment, G:Box imaging system
Microplate readers: colorimetry, fluorescence
Access to flow cytometry (with cell sorting),
confocal microscopy, DNA sequencing, quantitative PCR
technical facilities

Competitiveness Clusters with which the laboratory is associated:
Elopyss



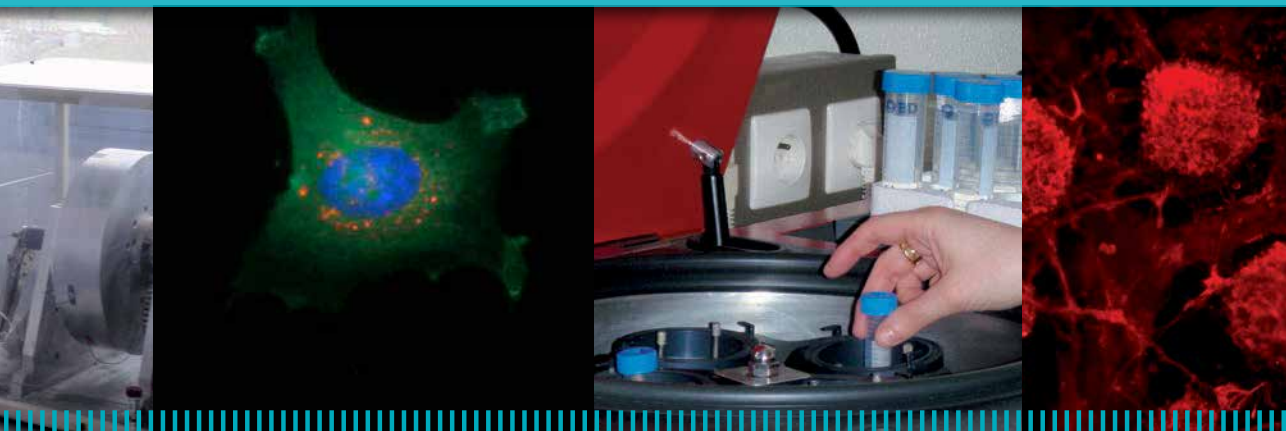
The team's research project focuses on pathological cell survival mechanisms that depend on neuropeptides. In the field of oncology, the project is developed over 3 complementary themes:

- (1) The endogenous secretion of neuropeptides and the survival of tumour cells. This production by non-neural cells is a biological process that was recently described in our laboratory from human lymphoid cell and colorectal cancer lines. We are studying the interaction of the receptor signalling pathways of these neuropeptides with those of other tyrosine kinase receptors.
- (2) The regulation of tumour survival under conditions of hypoxia and irradiation depend on underlying signalling mechanisms that are studied in relation to activation pathways of cell death and mainly of autophagy in solid tumour models.
- (3) Cancer stem cells and therapeutic resistance: the function of neurotrophins in the survival and activation mechanisms of cancer stem cells.

In autoimmunity: we have illustrated that neurotrophins are associated with B lymphocyte survival, their involvement will be studied during systemic autoimmune diseases.

Translational activities focusing on 2 areas:

- 1° Clinical research: the aim of these projects is to assess prognostic and predictive neurotrophic biomarkers of response to targeted therapies.
- 2° Technological development and innovation: Development of new diagnosis tools in partnership with the teams of the Σ -Lim Labex and backed by the Elopyss and PEC competitiveness clusters.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 17
 Other researchers: 3 post-docs, 7 PH,
 1 ATER (assistant associate professors)
 HDR (accredited to direct research): 15
 Doctoral students (2011-2012): 10
 Engineers, technicians: 1
 Dissertations defended (2008-2012): 10
 Current national projects: FUI (Single
 Interministerial Fund) agreement with
 Lyon Biopole, INCa Biocolon, participation
 in the
 INCa PAIR VADS project
 Current European projects: Interreg
 SUDOE

ECONOMIC ADDED VALUE

(2008-2012)

Number of patents filed: 1
 Number of industrial or research
 agreements with major
 organizations: 3
 Start-up created as a result of research
 activities since 2005: Oncomedics

PARTNERSHIPS

Active National University Partnerships:

Limousin Poitou-Charentes PRES (Further Education and Research Centre)
 partnerships with Poitiers: UMR CNRS 6187 (JM Muller), EA 4331 (JC Lecron)
 and EA 3805 (L Karayan).

Lariboisière Hospital, Paris: colo-rectal cancer animal models:

INSERM 689, Angiogenesis and Therapeutic Targets.

Strasbourg: UMR CNRS 7200, Therapeutic Innovation Laboratory
 (mitochondrial pathway targeting molecules).

Neuro-oncology network: neuropathology departments of the Cancéropôle
 Grand Sud-Ouest (Greater South-West Cancer Centre),

Sainte-Anne Hospital,

UMR INRA 1061 and UMR CNRS 7276, Limoges.

Department of Waves and Associated Systems, UMR CNRS 7252 Faculty of
 Sciences and Techniques, Limoges

Current International University Partnerships:

University of Rio Janeiro (Neuropathology)

Eliare Network SUDOE (Spain-France) (University Hospital La Paz,

Madrid; University of Castilla de la Mancha, Albacete)

National Industrial Partnerships:

iDD-biotech (Dardilly),

Lyonbiopole Competitiveness Cluster

SILAB (Saint Viance)

Neuronax (Clermont-Ferrand)

Novartis (Rueil-Malmaison)

Roche (Basel)

Cellular Homeostasis and Diseases

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Parent Institute

Genomics, Environment, Immunity,
Health and Therapeutics
(FR 3503 GEIST)

Doctoral School

ED 524 Biology, Health «Biohealth»

biosante.ed.univ-poitiers.fr



SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

Website publication: hal.archives-ouvertes.fr/EA3842

Articles: 128 in peer-reviewed journals

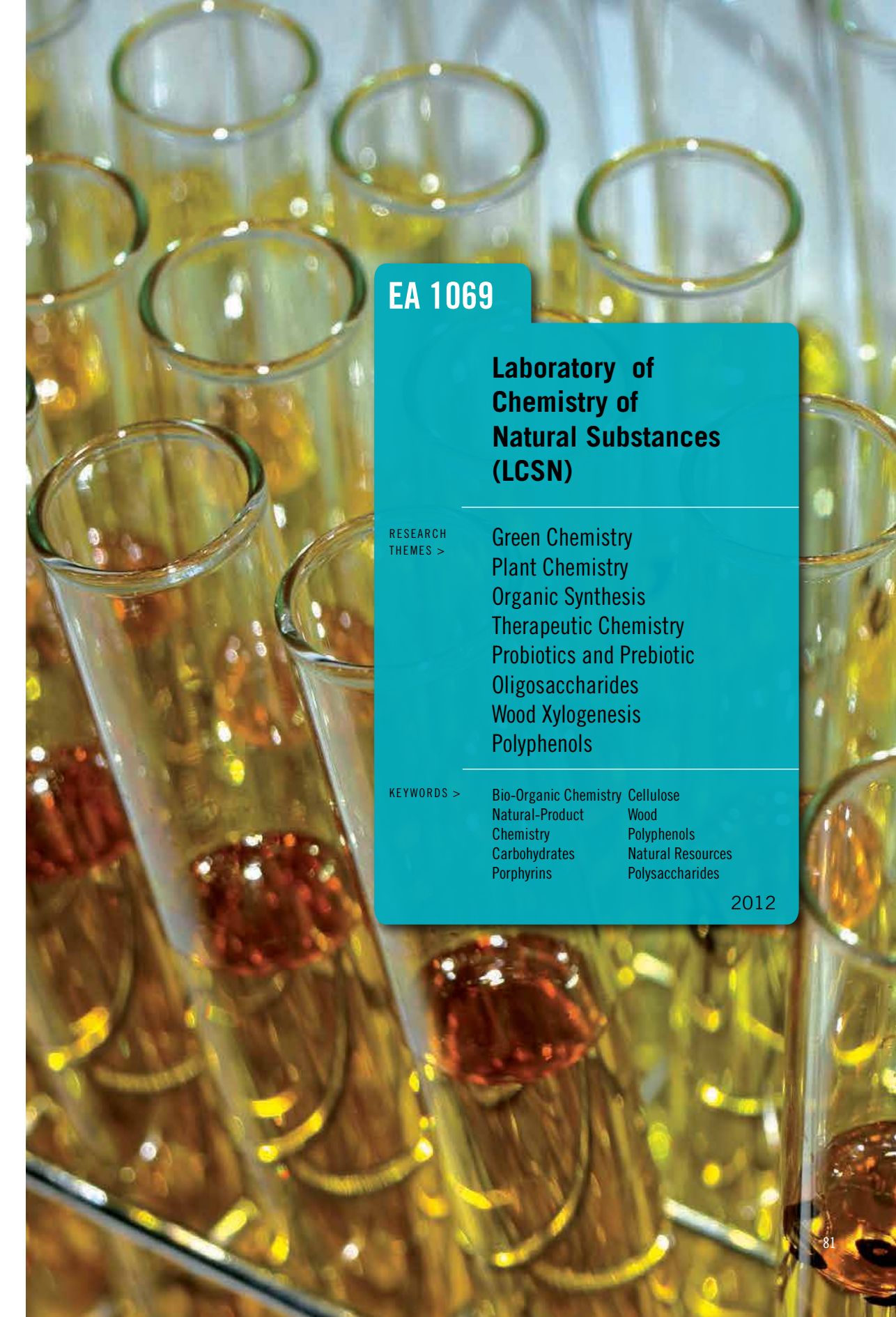
Number of works: 13

Book chapters: 4

Conference presentations: 15 invited lectures, 86 presentations

Major publications and/or patents over the last 5 years

- Fauchais AL, Lalloué F, Lise MC, Boumediene A, Preud'homme JL, Vidal E, Jauberteau MO.
"Role of endogenous brain--derived neurotrophic factor and sortilin in B cell survival". *J Immunol*, 2008; 181, 3027-38.
- Vincent F, Bonnin P, Clemessy M, Contreres JO, Lamande N, Gasc JM, Vilar J, Hainaud P, Tobelem G, Corvol P, Dupuy E. "Angiotensinogen delays angiogenesis and tumor growth of hepatocarcinoma in transgenic mice". *Cancer Res*, 2009; 69, 2853-60.
- Durand KS, Guillaudeau A, Weinbreck N, DeArmas R, Robert S, Chaunavel A, Pommeypuy I, Bourthoumieu S, Caire F, Sturtz FG, Labrousse FJ.
"1p19q LOH patterns and expression of p53 and Olig2 in gliomas: relation with histological types and prognosis". *Mod Pathol*. 2010; 23:619-28.
- Lise MC, Sparsa A, Marie I, Lalloué F, Ly K, Martel C, Bezanahary H, Gondran G, Loustaud-Ratti V, Bonnetblanc JM, Vidal E, Jauberteau MO, Fauchais AL.
"Serum neurotrophin profile in systemic sclerosis". *PLoS One*. 2010; 5(11):e13918.
- Bellanger C, Dubanet L, Lise MC, Fauchais AL, Bordessoule D, Jauberteau MO, Troutau D.
"Endogenous neurotrophins and Trk signaling in diffuse large B cell lymphoma cell lines are involved in sensitivity to rituximab-induced apoptosis". *PLoS One*. 2011; 6(11):e27213.
- Cheray M, Petit D, Forestier L, Karayan-Tapon L, Maftah A, Jauberteau MO, Battu S, Gallet FP, Lalloué F.
"Glycosylation-related gene expression is linked to differentiation status in glioblastomas undifferentiated cells". *Cancer Lett*. 2011; 312(1):24-32
- Akil H, Perraud A, Mélin C, Jauberteau MO, Mathonnet M. "Fine-tuning roles of endogenous brain-derived neurotrophic factor, TrkB and sortilin in colorectal cancer cell survival". *PLoS One*. 2011; 6(9):e25097.
- Mélin C, Perraud A, Akil H, Jauberteau MO, Cardot P, Mathonnet M, Battu S.
"Cancer stem cell sorting from colorectal cancer cell lines by sedimentation field flow fractionation". *Anal Chem*. 2012; 84(3):1549-56.
- Saada S, Marget P, Fauchais AL, Lise MC, Chemin G, Sindou P, Martel C, Delpy L, Vidal E, Jaccard A, Troutau D, Lalloué F, Jauberteau MO. "Differential expression of neurotensin and specific receptors in normal and malignant human B lymphocytes". *J Immunol*. (in press).
- Naves T, Battu S, Jauberteau MO, Cardot PJ, Ratinaud MH, Verdier M. "Autophagic sub-population sorting by Sedimentation Field Flow Fractionation". *Anal Chem*. 2012 (in press).



EA 1069

**Laboratory of
Chemistry of
Natural Substances
(LCSN)**

RESEARCH
THEMES >

Green Chemistry
Plant Chemistry
Organic Synthesis
Therapeutic Chemistry
Probiotics and Prebiotic
Oligosaccharides
Wood Xylogenesis
Polyphenols

KEYWORDS >

Bio-Organic Chemistry	Cellulose
Natural-Product	Wood
Chemistry	Polyphenols
Carbohydrates	Natural Resources
Porphyrins	Polysaccharides

2012

LCSN

Laboratory of Chemistry of Natural Substances

INDUSTRIAL APPLICATIONS

Biomass Valorization
Cosmetics
Pharmaceuticals
and Food Supplements
Biofertilizer

SERVICES PROVIDED

Bespoke syntheses,
structural characterization, biological
trials, extraction and purification
of natural substances, expertise,
training. Molecular modelling

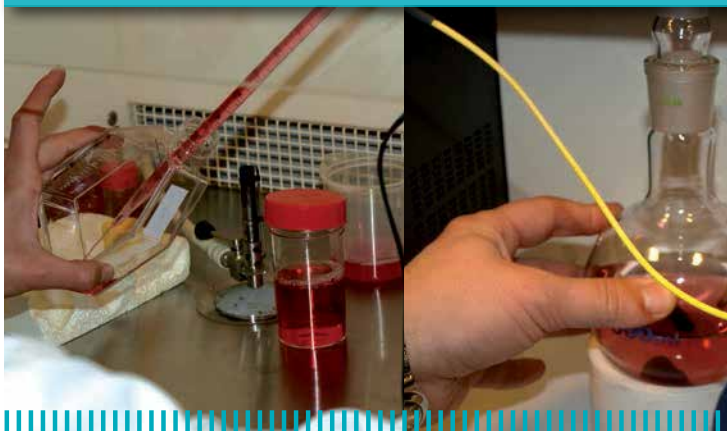
FIELDS OF APPLICATION

Organic chemistry
Agrochemistry
Environment
Pharmaceutical
Cosmetics

EQUIPMENT / TECHNICAL RESOURCES

Spectroscopy
(IR, UV-vis, NMR, mass, absorption
atomic, fluorescence, EPR, etc.)
Chromatography
(HPLC, PVC, flash, etc.) /
ultracentrifugation / UF and reverse
osmosis
Mono and two-dimensional
electrophoresis
CO2 incubator
Cell culture material

**Joint Research Laboratory with a
private company:**
Pe@rl



The LCSN is an original multidisciplinary structure devoted to developing therapeutically and phytosanitary-active molecules and to valorizing biomass. Some drugs exist that impact nucleic acids directly to block their replication.

For this purpose, we have prepared alkylating agents from nucleic bases. We also develop oligonucleotide analogues equipped with fluorescent probes that can be used as non-invasive diagnosis tools. Another theme consists of producing phototoxic photosensitizers able to specifically destroy tumours or bacteria through the action of light. Biological tests have demonstrated the activity of a considerable number of these compounds on cancer cells and on pathogenic bacteria. The second research area is aimed at valorizing biomass by modifying agricultural and forestry by-products (cereal brans, straw, corn cobs, bark and sawdust). Plastics have been produced from these raw materials. With bark, we have made micropollutant filters to trap heavy metals contained in water.

This work is associated with studies on the role of glycosylation in the response of trees to environmental stress and is linked to a phytoremediation programme that, in particular, analyses the in-vivo influence of metals on plant carbohydrates. Finally, the LCSN has initiated a programme that aims, firstly, to degrade or modify plant polysaccharides via an enzyme action to obtain antibiotic, anticancer or anti-allergy molecules and, secondly, to study carbohydrate and proteic determinants involved in probiotic activity of bacteria. The processes for manufacturing new products use “green chemistry” methods. The laboratory has the indispensable analytical and biological testing means for carrying out groundbreaking research. The LCSN has developed key relationships with institutional and industrial organizations.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 31
 Other researchers: 2
 HDR (accredited to direct research): 12
 Doctoral students (2011-2012): 16
 Engineers, technicians: 9
 Administrative agents: 0.5
 Dissertations defended (2008-2011): 17
 Current national projects: 1
 ANR, 4 Region/University "Contrats Objectifs" (performance agreements) and 1 OSEO DII
 Other projects: 2 PRES (Further Education and Research Centre)

ECONOMIC ADDED VALUE

(2008-2011)

Number of patents filed: 3
 Industrial or research agreements with major organizations: 3 start-ups created as a result of research activities since 2005: Khloris, Covertis, Les Ecorces, Méliopharm and Ecomeris
 Conferences, seminars organized: 2

PARTNERSHIPS

Active National University Partnerships:

Universities of Rouen, Bordeaux, Paris 6, Paris 11, Poitiers, Nantes (INRA), (UAGPF-INRA), Clermont Ferrand (PIAF), Nancy (INRA), ENITA, CNAM of Paris, Limoges (ENSCI)

Current International University Partnerships:

Cluj (Romania), Taichung (Taiwan), Trois Rivières (Canada), Gdansk (Poland), Kenitra (Morocco), Monastir (Tunisia), Hull (Great Britain), Vienna (Austria), Goiàs (Brazil)

National Industrial Partnerships:

L'OREAL, SILAB, SOTHYS, ID BIO, Pe@ri, AREVA, AVANTIS, LIMAGRAIN, LAFARGE, SANOFI-SYNTHELABO.

Research Groups (GDR):

CNRS 3042 PHOTOMED (Photoactivatable Drugs - Photochemotherapy),
 CNRS 3544 Wood Science,
 CNRS INRA 3429 BioMatPro Research Groups

Research Federations (RF):

FREDD (FR 3097)
 GEIST (FR 3503)

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Parent Institute

Genomics, Environment, Immunity,
Health and Therapeutics (FR 3503
GEIST)

Doctoral School

ED 523: Gay Lussac "Environmental
Sciences"

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SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

Website publication: hal.archives-ouvertes.fr/LCSN

Articles: 66 in peer-reviewed journals

Number of works: 1

Book chapters: 1

Conference presentations: 30

Major publications and/or patents over the last 5 years

- R. Decou; S. Lhernould; F. Laurans; E. Sulpice; J. Leplé; A. Déjardin; G. Pilate; G Costa
"Cloning and expression analysis of a wood-associated xylosidase gene (PtaBXL1) in poplar tension wood". *Phytochemistry* (2009); 70; 163-172.
- N. Saad; M. Urdaci; C. Vignoles; S. Chaignepain; R. Tallon; J. M. Schmitter and Ph. Bressollier
"Lactobacillus plantarum 299v surface-bound GAPDH: a new insight into enzyme cell walls location". *Journal of Microbiol and Biotechnol.* (2009) vol.19; (12) 1635-1643
- M.E. Bakled, V. Sol, R. Granet, G. Délérès, K. Estieu-Gionnet, P. Krausz
"Design and efficient synthesis of a new scaffold based on unsymmetrical protoporphyrin IX derivatives for use in SPPS". *Chemical Communications*, 46, 2115-2117, (2010)
- Aline Bardat, Vincent Gloaguen, Vincent Sol, Pierre Krausz
"Aqueous extraction of glucuronoxylans from chestnut wood: new strategy for lignin oxidation using phthalocyanine or porphyrin/H₂O₂ system". *Bioresource Technology*, 101, 6538-6543, (2010)
- C. Astier, V. Chaleix, C. Faugeton, D. Ropartz, P. Krausz, V. Gloaguen
"Enhancement of Douglas Fir bark lead (II) binding capacities – synthesis of aminated oligogalacturonic acid". *J. Haz. Mat.*, (2010), 182(1-3), 279-285
- P. Dalmay; A. Smith; T. Chotard; P. Sahay-Turner; V. Gloaguen; P. Krausz
"Properties of cellulosic fibre reinforced plaster: influence of hemp or flax fibres on the properties of set gypsum". *Journal of Material Sciences*, 2010, 45 (3), 793-803
- Cyril Ringot, Vincent Sol, Naïma Saad, Matthieu Barriere, Philippe Bressollier, Pierre Couleaud, Céline Frochot, Robert Granet, Pierre Krausz
"Triazinyl porphyrin-based photoactive cotton fabrics: preparation, characterization and antibacterial activity". *Biomacromolecules* 12, 1716-1723, (2011)
- Vincent Chaleix, Vincent Sol, Pierre Krausz
"Pseudo porphyrinato amino acids based on 1,3,5-triazine scaffold: new tools for synthesis of peptidic porphyrins". *Tetrahedron Letters* 52, 2977-2979, (2011)
- Vincent Sarrazy, Guillaume Garcia, Jean-Pierre Mbakidi, Caroline Le Morvan, Gaëlle Begaud-Grimaud, Robert Granet, Vincent Sol, Pierre Krausz
"Photodynamic effects of porphyrin-polyamine conjugates in human breast cancer and keratinocytes cell lines". *J. Photochem. Photobiol B* 103, 201-206, (2011)



EA 4330

Research Group on Water, Soil and the Environment (GRESE)

**RESEARCH
THEMES >**

Environmental Diagnosis of
Emerging Pollutants and Metals
Wastewater Treatment
Water Purification Techniques
Soil Pollution and Hydrogeology
Depollution Equipment
Technical Waste Management

KEYWORDS >

Environmental Chemistry	Metallic Elements
Pollution	Environment
Soil Science	Water Treatment
Decontamination	

2012

GRESE

Research Group on Water, Soil and the Environment

INDUSTRIAL APPLICATIONS

Effluent treatment processes
Environmental diagnosis on water and soil pollution
Development of qualitative measures for waste
Waste containment protocols

SERVICES PROVIDED

Research and development, advice, expertise, training

FIELDS OF APPLICATION

Environment, geosciences, chemistry, bioprocesses

EQUIPMENT / TECHNICAL RESOURCES

Water treatment pilot station (biological, filtration, ozonation, etc.)
Composting platform
Water analyses (AAs, ICP-MS, ion chromatography, HPLC, Mass-UPLC)

Competitiveness Clusters with which the laboratory is associated:

Advancity (Green Technologies, Sustainable Cities and Mobility) (Ile de France region)
Viandes et Produits Carnés (Innoviandes, Auvergne region)
DREAM (Water and Environments, Centre region)



The Research Group on Water, Soil and the Environment federates 40 permanent teacher-researchers and technicians and 20 doctoral students in the field of Environmental Sciences, which include in particular specialists in analytical chemistry, process engineering, physico-chemistry, solid-state chemistry, pedology, surface geoscience, biology pedology, ecology and botany. Research focuses on two complementary areas:

- liquid phase and solid phase chemical speciation for assessing the transfer conditions of organic and inorganic pollution on the surface of the Earth,
- the development of technological responses and implementation of innovative processes and management modes for treating polluted water and soils.

These themes are addressed from a fundamental viewpoint by studying the mechanisms of genesis, chemical speciation, interactions between phases and degradation of pollutants. A wide variety of mediums are studied including soils, sediments and solid residues, water, plants and purifying biomass.

The GRESE's research is applied to assessing risks related to point and non-point, metal and organic pollution (mine waste heaps, industrial sites, use of pesticides, etc.) and specific liquid discharges (hospital, urban effluents, etc.). The GRESE also develops processes for treating water and waste and for rehabilitating, upgrading and decontaminating industrial sites.

The GRESE is involved in national and European networks and develops many partnerships with Southern countries and with Eastern European countries where there are major environmental issues. Finally, the GRESE has been partnering for many years with companies, public establishments and institutions in the field of water and waste.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 28
 Other researchers: 2
 HDR (accredited to direct research): 11
 Doctoral students (2011-2012): 20
 Engineers, technicians: 10
 Administrative agents: 1
 Dissertations defended (2008-2011): 19
 Current national projects: 2 ANR,
 1 CASDAR, 1 ANSES and 1 Loire Plan
 Current European projects: 1 INTERREG
 and
 2 FEDER programmes, 1 ERASMUS
 Doctorate

ECONOMIC ADDED VALUE

Industrial or research agreements with
 major organizations: 8
 Conferences, seminars organized: 3
 national and 2 international

PARTNERSHIPS

Active National University Partnerships:

Blaise Pascal University (Physiology and Plant Biotechnologies Unit ERTAC), University of Poitiers (UMR CNRS 6008 and 6296), University of Tours (UMR 6113), University of Bordeaux (UMR 5805), University of Amiens (UMR 8157), University of East Paris (EA4508), University of La Rochelle (UMR LIENS), University of Caen (EA3915), University of Lorraine.

Current International University Partnerships:

University of Girona (Spain), Lublin Polytechnic School (Poland), University of Abomey Calavi (Benin) and University of North Carolina-Charlotte (USA) University of Blida (Algeria), Universities of Sfax and Tunis (Tunisia), University of Wageningen (the Netherlands), University of Shanghai (China), INRS ETE (Canada), US Geological Survey Atlanta (Georgia, USA), US Geological Survey at Stanford University and at the University of California-Berkeley, University of Lakehead (Ontario, Canada), Universities of Wroclaw and Krakow (Poland), access to synchrotron radiation at ALS Berkeley (USA), UNESCO IHE (Delft, the Netherlands)

National Industrial Partnerships:

VEOLIA Water, VALDI, FAURE Equipements, SAUR, ICF Environnement

Partnerships with National Organizations and Institutions:

IRSTEA, CSTB, Water Agencies, Loire Public establishment, IFCE.

Scientific Interest Groups (GIS):

Grycia - Scientific Interest Group on CYAnobacteria;
 Rameau - Scientific Interest Group on Water Resources and Planning in the Massif Central;
 group of experts in the field of Polluted Sites & Soils for the French Ministry of the Environment; Science of Water Scientific Interest Group; Muscle, Meat and Meat Products Scientific Interest Group; Water Treatment and Purification University Research Group.

Research Groups (GDR):

RDR ERICHE - CNRS interdisciplinary network

Research Federations (RF):

GEIST (FR 3503)
 FREDD (FR 3097)

Research Group on Water, Soil and the Environment (GRESE)

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Parent Institute

Genomics, Environment, Immunity,
Health and Therapeutics (FR 3503
GEIST)

Doctoral School

ED 523: Gay Lussac "Environmental
Sciences"

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SCIENTIFIC PRODUCTION OF RESEARCH TEAM

(2008-2011)

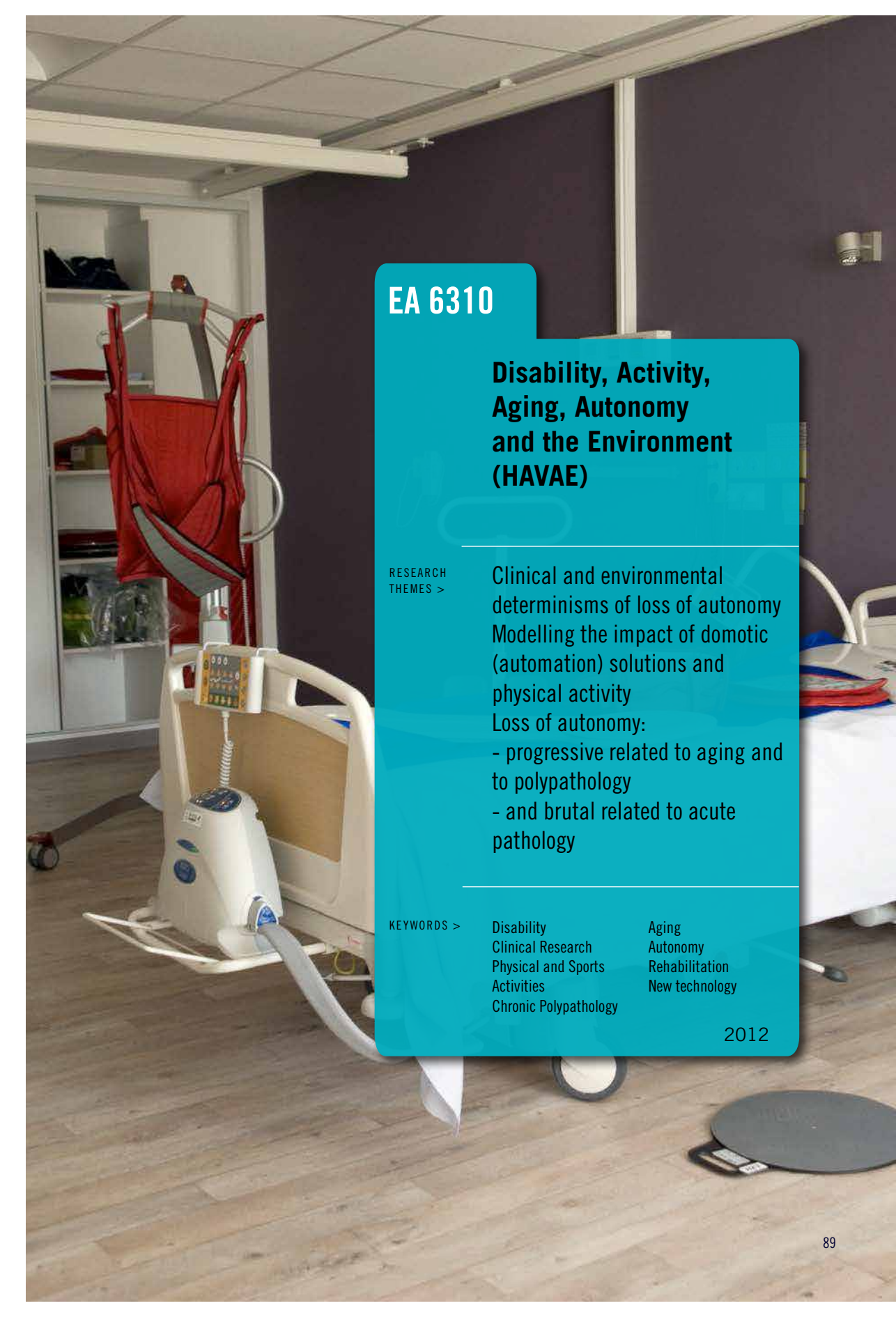
Website publication: hal.archives-ouvertes.fr/EA4330

Articles: 118 in peer-reviewed journals

Conference presentations: 97

Major publications and/or patents over the last 5 years

- Soubrand-Colin M., Horen H., Courtin-Nomade A. (2009). "Mineralogical and magnetic characterisation of iron titanium oxides in soils developed on two various basaltic rocks under temperate climate". *Geoderma* 149, 27-32.
- Wan J., Klein J., Simon S., Joulain C., Dictor M.C., Deluchat V., Dagot C. (2010). "As(III) oxidation by *Thiomonas arsenivorans* in up-flow fixed-bed reactors coupled to As sequestration onto zero-valent iron-coated sand". *Water Research* 44, 5098-5108.
- Chekneane B., Bouras O., Baudu M., Basly J.P., Cherguielaine A. (2010). "Granular inorgano-organo pillared clays (GIOC): Preparation by wet granulation, characterization and application to the removal of a Basic dye (BY28) from aqueous solutions". *Chemical Engineering Journal* 158, 528-534.
- Courtin-Nomade A., Bril H., Beny J.M., Kunz M., Tamura N. (2010). "Sulfide oxidation observed using micro-Raman spectroscopy and micro-X-ray diffraction: The importance of water/rock ratios and pH conditions". *American Mineralogist* 95, 582-591.
- Jean-Soro L., Bordas F., Bollinger J.C. (2012). "Column leaching of chromium and nickel from a contaminated soil using EDTA and citric acid". *Environmental Pollution* 164, 175-181.
- Hadjoudja S., Deluchat V., Baudu M. (2010). "Cell surface characterisation of *Microcystis aeruginosa* and *Chlorella vulgaris*". *Journal of Colloid & Interface Science* 342, 293-299.
- Bourven I., Joussein E., Guibaud G. (2011). "Characterisation of the mineral fraction in extracellular polymeric substances (EPS) from activated sludges extracted by eight different methods". *Bioresource Technology* 102, 7124- 7130.
- Labanowski J., Feuillade G. (2011). "Dissolved organic matter: Precautions for the study of hydrophilic substances using XAD resins". *Water Research* 45, 315-327.
- Laurent J., Jaziri K., Guignard R., Casellas M., Dagot C. (2011). "Comprehensive insight of the performances of excess sludge reduction by 90°C thermal treatment coupled with activated sludge at pilot scale: COD and N removal, bacterial populations, fate of heavy metals". *Process Biochemistry* 46, 1808-1816.
- Pallier V., Feuillade-Cathalifaud G., Serpaud B. (2011). "Influence of organic matter on arsenic removal by continuous flow electrocoagulation treatment of weakly mineralized waters". *Chemosphere* 83, 21-28.



EA 6310

Disability, Activity, Aging, Autonomy and the Environment (HAAVE)

RESEARCH THEMES >

Clinical and environmental
determinisms of loss of autonomy
Modelling the impact of domotic
(automation) solutions and
physical activity

Loss of autonomy:

- progressive related to aging and
to polypathology
- and brutal related to acute
pathology

KEYWORDS >

Disability
Clinical Research
Physical and Sports
Activities
Chronic Polypathology

Aging
Autonomy
Rehabilitation
New technology

2012

HAVAE

Disability, Activity, Aging, Autonomy and the Environment

INDUSTRIAL APPLICATIONS

Modelling the impact of organizational factors and/or new technology on the loss of autonomy, medico-economical validation and uses.

Validating diagnosis support using information and communication technology and sensors.

Scientific validation of medical systems.

SERVICES PROVIDED

Expertise in analysing the organizational and technological requirements and solutions for setting up clinical trials for the general population or for laboratory uses (Habitat and Disability Laboratory – Limoges University Hospital)

FIELDS OF APPLICATION

Health, ICT

EQUIPMENT / TECHNICAL RESOURCES

2 mobile, multidisciplinary teams that can assess patients at home.

Competitiveness Clusters with which the laboratory is associated:
Elophys



Autonomy breakdown is due to an imbalance between the activities that subjects should or would like to carry out (home assessment of the activity under ecological conditions) and their functional capacities (looking for person-specific functional frailty markers that impact activity).

Our project is unique as we assess subjects under real conditions in their homes with the aim of providing the most relevant solutions to prevent autonomy breakdown. If we refer to the International Classification on Functioning, Disability and Health (CIF, WHO 2003), our home-based intervention falls under environmental factors and participation, whereas very often studies only assess deficiency and activity aspects.

We address the issue by focusing on 2 complementary areas that interact with physical activity:

1st area: assessing the effects of physical activity on maintaining autonomy.

2nd area: assessing the effectiveness of information and communication technologies on helping individuals remain at home and on patients' level of physical activity.

The different research work carried out in the two areas addresses the 3 following aspects:

- the respective place of person-specific functional frailty markers and impact on activity and involvement and research for new markers
- at-home assessment of the activity under ecological conditions
- implementing actions for the individual (that are directly related to the two aforementioned points).



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 7

Other researchers: 2

HDR (accredited to direct research): 4

Doctoral students (2011-2012): 6

Engineers, technicians: 3

Current national projects: 6

PARTNERSHIPS

Active National University Partnerships:

Universities of Saint Etienne, Poitiers, Avignon, Clermont, University of Technology of Troyes, Toulouse (Gérontopole - Toulouse Geriatrics Clinical Research Centre and Health). URC ECO AHPH, University of Lyon 3

National Industrial Partnerships:

Link Care Service, SRET, Orange, Voluntis, Inoveo, SIRMAD

International Industrial Partnerships:

Société Legrand, Boston Life Lab

Partnerships with National Organizations and Institutions:

Autonom'Lab

Research Federations:

Federative Research Institute on Disability (FR 25)

GEIST (FR 3503)

Disability, Activity, Aging, Autonomy and the Environment

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Director

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Parent Institute

Genomics, Environment, Immunity,
Health and Therapeutics (FR 3503)

Doctoral School

ED 524 Biology, Health

biosante.ed.univ-poitiers.fr



SCIENTIFIC PRODUCTION OF RESEARCH TEAM

(2008-2011)

Website publication: hal-unilim.archives-ouvertes.fr/HAAVE

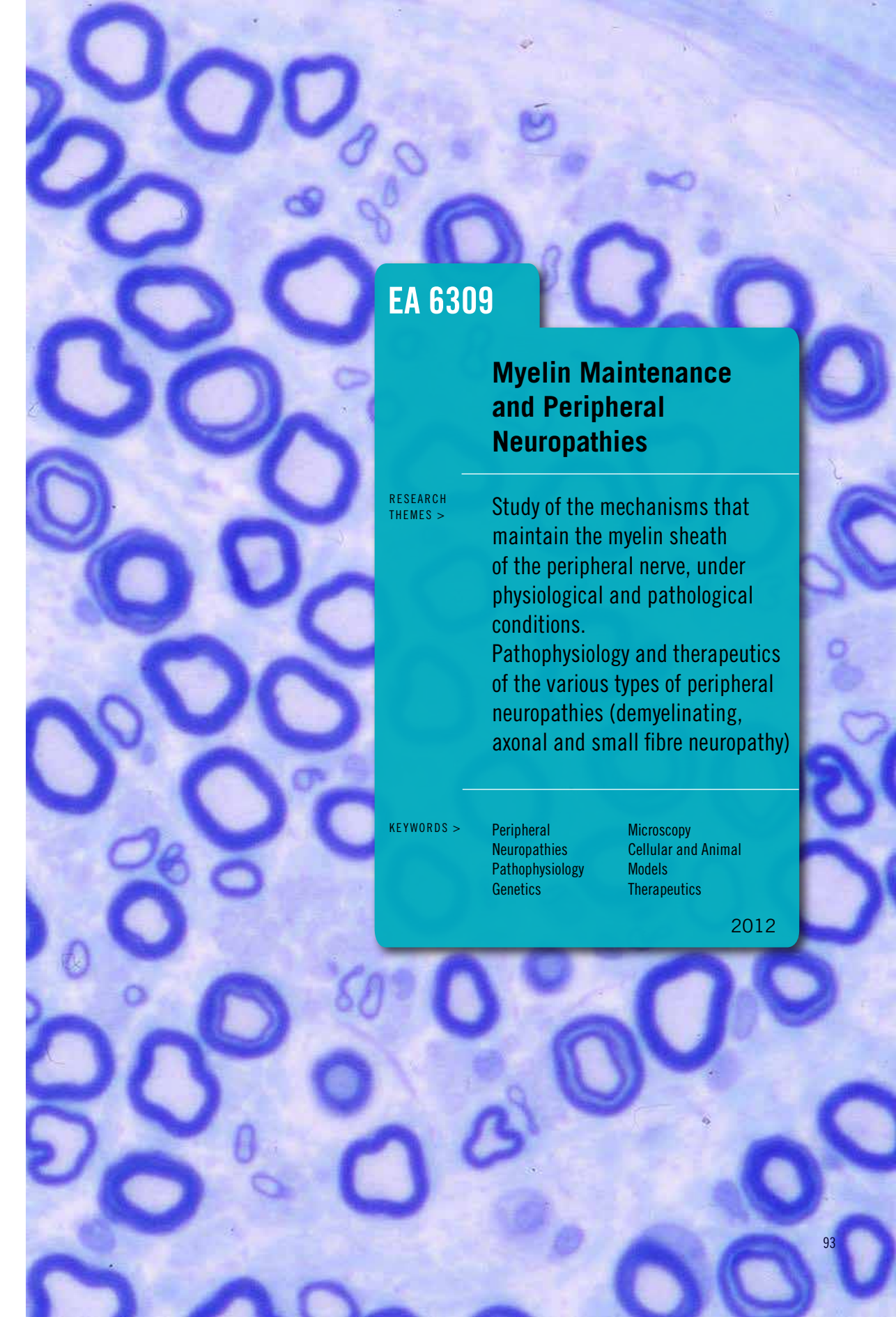
Articles: 34 in peer-reviewed journals

Book chapters: 3

Conference presentations: 47

Major publications and/or patents over the last 5 years

- Bongue B, Laroche ML, Gutton S, Colvez A, Guéguen R, Moulin JJ, et al. "Potentially inappropriate drug prescription in the elderly in France: a population-based study from the French National Insurance Healthcare system". *Eur. J. Clin. Pharmacol.* 2011 Dec; 67(12):1291–9.
- Bordet R, Dartigues J-F, Dubois B, Goehrs J-M, Vernoux L, Semah F, et al. "Biomarkers for the early stages of clinical development in Alzheimer's disease". *Thérapie.* 2010 Aug; 65(4):285–90, 277–83.
- de Sèze M-P, Bonhomme C, Daviet J-C, Burguete E, Machat H, Rousseaux M, et al. "Effect of early compensation of distal motor deficiency by the Chignon ankle-foot orthosis on gait in hemiplegic patients: a randomized pilot study". *Clin Rehabil.* 2011 Nov; 25(11):989–98.
- Debord J, Laubarie C, Dantoine T. "Microcalorimetric study of the inhibition of butyrylcholinesterase by carbamates". *Anal. Biochem.* 2008 Feb 15; 373(2):247–52.
- Prado-Jean A, Couratier P, Druet-Cabanac M, Nubukpo P, Bernard-Bourzeix L, Thomas P, et al. "Specific psychological and behavioral symptoms of depression in patients with dementia". *Int J Geriatr Psychiatry.* 2010 Oct; 25(10):1065–72.
- Puisieux F, D'Andrea C, Baconnier P, Bui-Dinh D, Castaings-Pelet S, Crestani B, et al. "Swallowing disorders, pneumonia and respiratory tract infectious disease in the elderly". *Rev Mal Respir.* 2011 Oct; 28(8):e76–93.
- Rousseau A, Laroche M-L, Venisse N, Loichot-Roselmac C, Turcant A, Hoizey G, et al. "Cost-Effectiveness Analysis of Individualized Mycophenolate Mofetil Dosing in Kidney Transplant Patients in the APOMYGRE Trial". *Transplantation.* 2010 Mai 27; 89(10):1255–62.
- Soto ME, Andrieu S, Arbus C, Ceccaldi M, Couratier P, Dantoine T, et al. "Rapid cognitive decline in Alzheimer's disease". *Consensus paper. J Nutr Health Aging.* 2008 Dec; 12(10):703–13.
- Tchalla AE, Marin B, Mignard C, Bhalla D, Tabailoux E, Mignard D, et al. "Newly diagnosed epileptic seizures: focus on an elderly population on the French island of Réunion in the Southern Indian Ocean". *Epilepsia.* 2011 Dec; 52(12):2203–8.
- Zhou Z, Salle J, Daviet J, Stuit A, Nguyen C. "Combined approach in bedside assessment of aspiration risk post stroke: PASS". *Eur J Phys Rehabil Med.* 2011 Sept; 47(3):441–6

A microscopic image showing numerous cross-sections of myelinated axons. The axons are stained blue, showing the dark blue myelin sheath surrounding the lighter blue axonal cores. The axons vary in size and are densely packed.

EA 6309

Myelin Maintenance and Peripheral Neuropathies

**RESEARCH
THEMES >**

Study of the mechanisms that maintain the myelin sheath of the peripheral nerve, under physiological and pathological conditions.

Pathophysiology and therapeutics of the various types of peripheral neuropathies (demyelinating, axonal and small fibre neuropathy)

KEYWORDS >

Peripheral
Neuropathies
Pathophysiology
Genetics

Microscopy
Cellular and Animal
Models
Therapeutics

2012

EA 6309

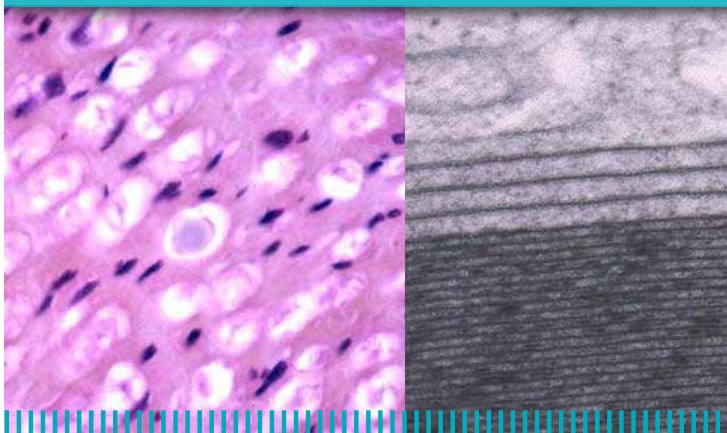
Myelin Maintenance and Peripheral Neuropathies

INDUSTRIAL APPLICATIONS

Development of innovative treatment for peripheral neuropathies (new molecules and/or new delivery modes)

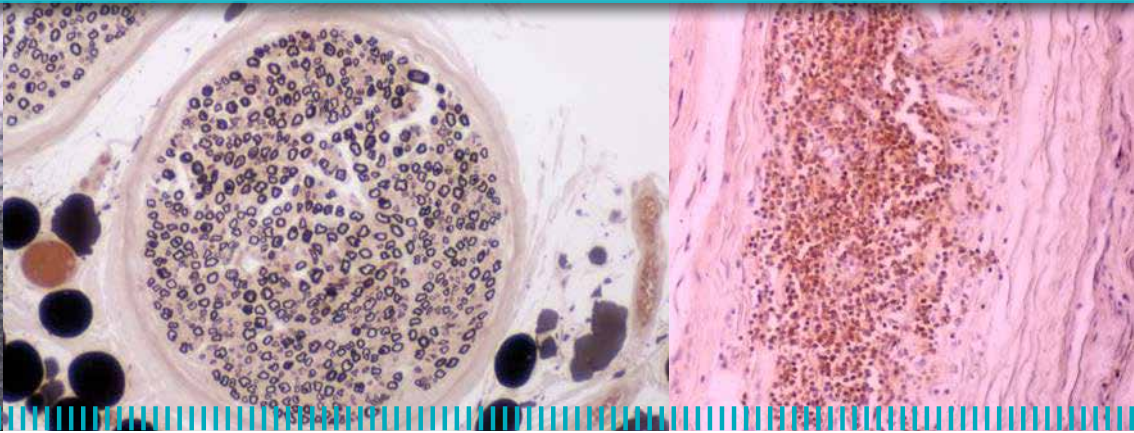
EQUIPMENT / TECHNICAL RESOURCES

PCR, real-time PCR, sequencing; optical, fluorescence, electronic microscopy; cell culture, transient/stable transfections



The first area of research that our team focuses on is understanding the mechanisms that maintain the peripheral myelin sheath, taking into account its physiological and pathological aspects. The team works on discerning the maintenance effectors – by taking three aspects that play a role here into account: (i) Schwann cells, peripheral nerve myelinating cells, (ii) relationships between Schwann cells and axons, and (iii) relationships between Schwann cells and the extracellular matrix – and also on characterizing process dysfunction under pathological conditions (genetically-determined neuropathies and acquired neuropathies, in particular inflammatory) on ill individuals and in animal models.

We also work on a second research area that focuses on therapeutics in peripheral neuropathies. This includes developing peripheral neuropathies models (in particular cellular), that are used for testing different therapeutic approaches, such as using hydrogels for the sustained release of bioactive molecules, and screening drug candidates. A second theme deals with small fibre peripheral neuropathies. Various approaches, on animal models and on humans, are currently developed on these frequently painful types of neuropathies, which are highly prevalent among the general population.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 11

Other researchers: 3

HDR (accredited to direct research): 7

Doctoral students (2011-2012): 6

Engineers, technicians: 2

Administrative agents: 1

Other projects: French Muscular

Dystrophy Association

HONOURS

Corresponding member of the French
National Academy of Medicine (Prof.
Jean-Michel Vallat)

PARTNERSHIPS

Active National University Partnerships:

UMR INSERM1024-CNRS8197, Biology Institute of the Ecole Normale Supérieure, Paris: development of the peripheral nervous system.

UMR Inserm694, Angers: mitochondrial dysfunction cell models

Max Mousseron Biomolecules Institute, CNRS, Montpellier: new methods for delivering bioactive molecules

Current International University Partnerships:

Mustafa University Hospital, Ben Aknoun Specialized Hospital, Algiers, Algeria; Institute for Neuromuscular Research, University of Sydney, Australia.

National Industrial Partnerships:

MedinCell SA, Montpellier, France

Research Federation:

GEIST (FR 3503)

Myelin Maintenance and Peripheral Neuropathies

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Health and Therapeutics (FR 3503)

Doctoral School

ED 524: Biology, Health «Biohealth»

Biosante.ed-univ-poitiers.fr

SCIENTIFIC PRODUCTION OF RESEARCH TEAM

(2008-2011)

Website publication: hal.archives-ouvertes.fr/EA6309

Articles: 75 international and 97 in peer-reviewed journals

Conference presentations: 38

Major publications and/or patents over the last 5 years

- Funalot B, Topilko P, Ramos Arroyo MA, Sefiani A, Hedley-Whyte ET, Yoldi ME, Richard L, Touraille E, Laurichesse M, Khalifa E, Chauzeix J, Ouedraogo A, Cros D, Magdelaine C, Sturtz FG, Urtizberea JA, Charnay P, Garcia Bragado F, Vallat JM. "Homozygous deletion of an EGR2 enhancer in congenital amyelinating neuropathy". *Ann Neurol*. 2012 (in press).
- Boyer O, Nevo F, Plaisier E, Funalot B, Gribouval O, Benoit G, Cong EH, Arrondel C, Tête MJ, Montjean R, Richard L, Karras A, Pouteil-Noble C, Balafrej L, Bonnardeaux A, Canaud G, Charasse C, Dantal J, Deschenes G, Deteix P, Dubourg O, Petiot P, Pouthier D, Leguern E, Guiochon-Mantel A, Broutin I, Gubler MC, Saunier S, Ronco P, Vallat JM, Alonso MA, Antignac C, Mollet G. "INF2 mutations in Charcot-Marie-Tooth disease with glomerulopathy". *N Engl J Med*. 2011 Dec 22; 365(25):2377-88.
- Coudrier F, Decker L, Funalot B, Vallat JM, Garcia-Bragado F, Charnay P, Topilko P. CNS/PNS boundary transgression by central glia in the absence of Schwann cells or Krox20/Egr2 function. *J Neurosci*. 2010 Apr 28; 30(17):5958-67.
- Vallat JM, Sommer C, Magy L. "Chronic inflammatory demyelinating polyradiculoneuropathy: diagnostic and therapeutic challenges for a treatable condition". *Lancet Neurol*. 2010 Apr; 9(4):402-12.
- Calvo J, Funalot B, Ouvrier RA, Lazaro L, Toutain A, De Mas P, Bouche P, Gilbert-Dussardier B, Arne-Bes MC, Carrière JP, Journel H, Minot-Myhie MC, Guillou C, Ghorab K, Magy L, Sturtz F, Vallat JM, Magdelaine C. "Genotype-phenotype correlations in Charcot-Marie-Tooth disease type 2 caused by mitofusin 2 mutations". *Arch Neurol*. 2009 Dec; 66(12):1511-6.
- Vallat JM, Ouvrier RA, Pollard JD, Magdelaine C, Zhu D, Nicholson GA, Grew S, Ryan MM, Funalot B. "Histopathological findings in hereditary motor and sensory neuropathy of axonal type with onset in early childhood associated with mitofusin 2 mutations". *J Neuropathol Exp Neurol*. 2008 Nov; 67(11):1097-102.
- Desmazières A, Decker L, Vallat JM, Charnay P, Gilardi-Hebenstreit P. "Disruption of Krox20-Nab interaction in the mouse leads to peripheral neuropathy with biphasic evolution". *J Neurosci*. 2008 Jun 4; 28(23):5891-900.
- Nicholson GA, Magdelaine C, Zhu D, Grew S, Ryan MM, Sturtz F, Vallat JM, Ouvrier RA. "Severe early-onset axonal neuropathy with homozygous and compound heterozygous MFN2 mutations". *Neurology*. 2008 May 6; 70(19):1678-81.
- Vallat JM, Cros DP, Hedley-Whyte ET. "Case records of the Massachusetts General Hospital. Case 9-2007. A 27-year-old woman with pain and swelling of the legs". *N Engl J Med*. 2007 Mar 22; 356(12):1252-9.
- Vallat JM, Magy L, Lagrange E, Sturtz F, Magdelaine C, Grid D, Tazir M. "Diagnostic value of ultrastructural nerve examination in Charcot-Marie-Tooth disease: two CMT 1B cases with pseudo-recessive inheritance". *Acta Neuropathol*. 2007 Apr; 113(4):443-9.



Applied Medical Research Constellation

RESEARCH THEMES >

Study of thrombectomy with
intravascular devices on the
arteries of pigs
Effects of electromagnetic waves
on living organisms

KEYWORDS >

Applied Clinical Research
New Technology
Innovative Devices
Thrombectomy
Electromagnetic Waves

2012

Applied Medical Research Constellation

SERVICES PROVIDED

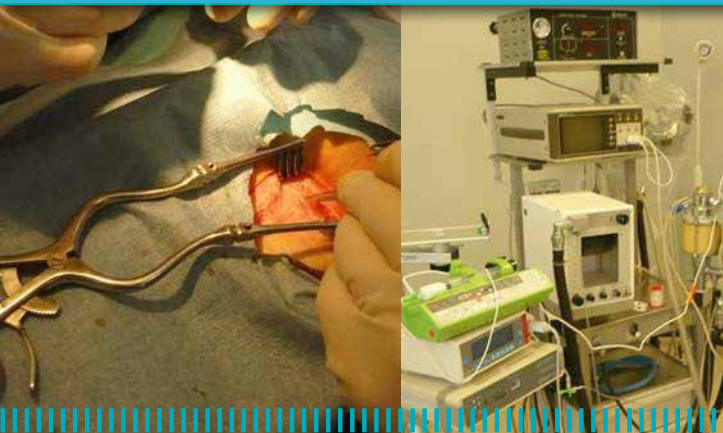
Advice, expertise, training

FIELDS OF APPLICATION

Health, pharmaceutical, bio-industry

EQUIPMENT / TECHNICAL RESOURCES

The team relies on equipment and technical resources provided by the Departmental Laboratory with which most members of the team work closely.



This team covers applied clinical research centred around new technology and innovative systems. The aim is to study the impact of new technologies on living organisms and to test innovative devices on animals. Two main axes are currently being developed:

- the effects of electromagnetic waves on living organisms. A wide range of recent technologies use electromagnetic waves (mobile phones, WiFi, etc.). Studies on their potential effects on living organisms, on both cell level and whole animal organism level, are carried out using exposure systems developed by our physicist colleagues (X-Lim Institute). As such, this work involves active collaboration between physicists and biologists.
- the study of thrombectomy with intravascular devices on the arteries of pigs. As a result of histological studies carried out in conjunction, this axis enables us to gain a better understanding of potential short-term and long-term impacts of intravascular devices on arteries. Furthermore, we can compare the various systems that already exist and study the latest devices developed before any likely launch on the market.

**Competitiveness Clusters with which
the laboratory is associated:**
Cancer-Bio-Health



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 19

Other researchers: 1 post-doctoral student

3 hospital practitioners

HDR (accredited to direct research): 17

Doctoral students (2011-2012): 2

Engineers, technicians: 1

PARTNERSHIPS

Active National University Partnerships:

X-Lim Research Institute (Limoges)

Compiègne Technology University

Current International University Partnerships:

University of Brasilia (Brazil)

International Industrial Partnerships:

Microvention-Terumo

EV3-Covidien

Research Federation:

GEIST (FR 3503)

Applied Medical Research Constellation

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Doctoral School

ED 524: Biology, Health «Biohealth»

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SCIENTIFIC PRODUCTION OF RESEARCH TEAM

(2008-2011)

Website publication: hal-unilim.archives-ouvertes.fr

Articles: 128 international and 15 in peer-reviewed journals

Book chapters: 6

Conference presentations: 25

Major publications and/or patents over the last 5 years

- G.S. Nakiri, M. Al-Khawaldeh, B. Parente, I. Kessler, B. Gory, C. Mounayer. "Treatment of ruptured intra-cranial internal carotid artery dissection using a flow-diverter stent". *Journal of neuroradiology*, 2012, in press
- S. Bourthoumieu, F. Terro, P. Lévêque, A. Collin, V. Joubert, C. Yardin. "Aneuploidy studies in human cells exposed in vitro to GSM-900 MHz radiofrequency radiation using FISH". *International Journal of Radiation Biology*, 2011, 87:400-408.
- I Kessler, R. Riva, M. Ruggiero, M. Manisor, M. Al-Khawaldeh, C. Mounayer. "Successful transvenous embolization of brain arteriovenous malformations using Onyx in five consecutive patients". *Neurosurgery*. 2011, 69:184-93.
- D.G. Abud, R. Riva, G.S. Nakiri, F. Padovani, M. Al-Khawaldeh, C. Mounayer. "Treatment of brain arteriovenous malformations by double arterial catheterization with simultaneous injection of Onyx: retrospective series of 17 patients". *AJNR American Journal of Neuroradiology*. 2011, 32:152-8.
- S. Bourthoumieu, V. Joubert, B. Marin, A. Collin, P. Lévêque, F. Terro, C. Yardin. "Cytogenetic studies in human cells exposed in vitro to GSM-900 MHz radiofrequency using R-banded karyotyping". *Radiation Research*, 2010, 174:712-718.
- I.M. Kessler, B. Esmanhoto, R. Riva, C. Mounayer. "Endovascular transvenous embolization combined with direct puncture of the sinus pericranii. A case report". *Interventional Neuroradiology*. 2009, 15:429-34.
- V. Joubert, S. Bourthoumieu, P. Lévêque, C. Yardin. "Apoptosis is induced by radiofrequency fields through the caspase-independent mitochondrial pathway in cortical neurons". *Radiation Research*, 2008, 169:38-45.
- V. Joubert, P. Lévêque, M. Cueille, S. Bourthoumieu, C. Yardin. "No apoptosis is induced in rat cortical neurons exposed to GSM phone fields". *Bioelectromagnetics*, 2007, 28:115-121.



SHS

SHS **Science of Man and Society**

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Director: Philippe DEPREUX
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2012

>>>

SHS

The Institute of Science of Man and Society groups together 9 teams acknowledged and certified by the French Ministry in the fields of Law, Economics, Management, Humanities and Human Science. These numerous and varied disciplines pursue their fundamental research activities in-house and partner within the Institute on strongly-identified themes:

- Sustainable development and territorial environments studied from juridical, political, economic and geographical perspectives.
- The behaviour of businesses and economic performance, approached in terms of management, economics and private law, and analysed in terms of management, strategy, risk, assets, finance, market surveillance and banking system regulation.
- Administration, politics and institutional changes, addressed through governance procedures, relationships and affiliations, public services, and justice, focusing on legal, sociological and historical perspectives.
- Literature, languages and cultures, their modes of communication (including media and electronics) and their interactions studied through their historical and spatial aspects (Europe, Francophone countries) and from a semiological point of view.
- Learning, training and education, analysed through a sociological, didactical, literary and linguistic approach.
- Sports from its professional viewpoint as well as amateur practices, studied in legal, economic, sociological, and educational terms.

More specifically, the research units pool their expertise to work together on two themes:

- Conflict and post-conflict management: speak, witness, communicate.
- Quantitative analyses and spatialization in Human and Social Sciences: tools and methods, general concepts and disciplinary particularities.



EA 3648

**Research Center
for Semiotics (CeReS)**

RESEARCH
THEMES >

General Semiotics
Writing and New ICT
Linguistics

KEYWORDS >

Semiotics
Linguistics
Communication
Discourse
Enunciation

Design
Images
Media
New ICT
Writings

CeReS

**Research Center
for Semiotics**

SERVICES PROVIDED

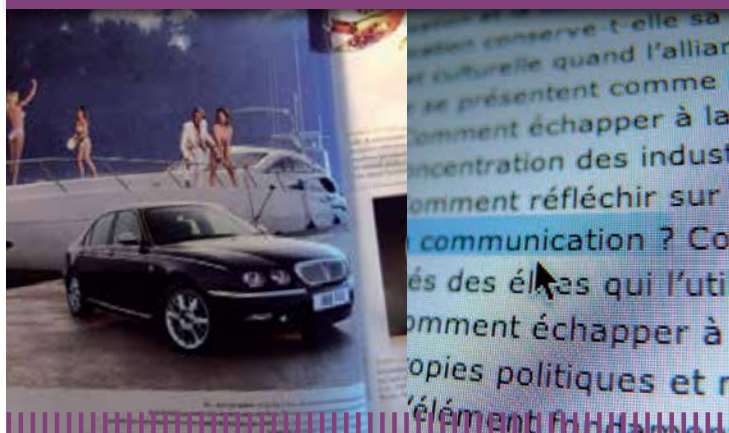
Expertise, Qualitative studies
Discourse analysis

FIELDS OF APPLICATION

Communication
Information, ICT
Marketing design

TECHNICAL RESOURCES

Specialized documentary collection
Video editing station
Sound analysis laboratory
Digital instrumentation
for sound and images



The CeReS, which is historically dedicated to semiotics, signification theory, develops its research over three areas. In addition to semiotics, it focuses on writings, tools/techniques and media and, thirdly, on linguistics. Semiotics researchers work specifically on texts, objects and images (scientific and audiovisual images), perception (sound analysis) and interactions.

- Researchers, specialized in writings, work on the history of writings, tools/techniques and digital ICT. The third area of research focuses on theoretical and applied linguistics, as well as discursive and textual linguistics. New fields that the teams have incorporated include practices, scientific images (ANR IDIVIS French National Research Agency Project on Scientific Images and Imaging Devices), sound and design.

The CeReS holds a seminar on a monthly basis in Limoges and two seminars at Paris IV.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 22

Other researchers: 1 post-doctoral student

HDR (accredited to direct research): 6

Doctoral students (2011-2012): 48

Others: France-Belgium Bi-national projects (Egide) on visual enunciation, PRES project on sound, regional project on robotics

HONOURS

Jacques Fontanille and Isabelle Klock-Fontanille, senior members of the IUF

PARTNERSHIPS

Active National University Partnerships:

Universities Paris IV, Paris VIII, Toulouse II, Lyon I, EHESS (School for Higher Studies in social Sciences)

Current International University Partnerships:

University of Liège,
University of Venice,
University of Bologna,
University of Siena,
University of Sao Paulo (Brazil),
University of Puebla (Mexico)

Partnerships with International Organizations and Institutions:

Egide, De Vinci and Tournesol programmes

Scientific Interest Groups (GIS):

Rural Territories

Interdisciplinary Programmes:

ANR (French National Research Agency) IDIVIS (Scientific Images and Imaging Devices) 2008-2010.

Research Center for Semiotics (CeReS)

<http://www.flsh.unilim.fr/ceres>

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Parent Institute

Institute of Science of Man
and Society (SHS)

Doctoral School

ED 527: Cognition, Behaviour,
Language(s)

ccl.ed.univ-poitiers.fr

SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

Website publication: hal-unilim.archives-ouvertes.fr/CERES

Major publications and/or patents over the last 5 years

- Jacques Fontanille, "Pratiques sémiotiques", PUF, 2008.
- Jacques Fontanille, "Séma y Soma". Figuras semioticas del cuerpo, Fondo Editorial, Universidad de Lima, 2008, 388 p.
- Daniel Marcheix, Anne Hébert, "Chronologie et bibliographie", collective work with A. Ancrenat, P. Godbout, L. Guillemette, under the supervision of Nathalie Watteyne, Montreal, Les Presses de l'université de Montréal, 2008, 315 pages.
- Nicole Pignier, "Le webdesign. Sociale expérience des interfaces Web", Nicole PIGNIER and Benoît Drouillat, Hermès Lavoisier, collection "Forme et sens", Paris, 2008.
- Nicole Pignier, "De l'expérience multimédia. Usages et pratiques culturelles", Nicole Pignier coord., Hermès Lavoisier, collection "Forme et sens", 2009.
- Anne Beyaert-Geslin, "L'image préoccupée", Hermès-Lavoisier, 2009
Daniel Marcheix, "Les incertitudes de la présence. Identités narratives et expériences sensible dans la littérature de langue française. Algérie-France-Québec", Peter Lang, 2010.
- Jacques Fontanille, "Corps et sens", PUF, 2011.
- Jean-François Bordron, "L'iconicité et ses images", PUF, 2011.
- Isabelle Klock-Fontanille, "L'aventure des écritures perdues : essai sur le déchiffrement des écritures", Brussels, Editions Safran, 2012.
- Maria Giulia Dondero and Jacques Fontanille, "Des images à problèmes. Le sens du visuel à l'épreuve de l'image scientifique", PULIM, 2012.

EA 4270

CRIHAM
Interdisciplinary
Research Centre for
History, History of Art
and Musicology

RESEARCH
THEMES >

Invention, Models, Transfers;
Conflictive Societies;
From the Atlantic to the
Mediterranean: Territories,
Interactions and Transfer and
Exchange Systems;
Powers: People, Institutions,
Representation, Standard and
Regulation.

KEYWORDS >

History
Ancient Egypt
Political History
Institutional History
Economic and Social
History

Religious History
Administrative Staff
Limousin
Cultural History
Painting - Renaissance
to Romanticism

2012

CRIHAM

**Interdisciplinary
Research
Centre for History,
History of Art and
Musicology**

TECHNICAL RESOURCES

Specialized documentary collection



Art historians and musicologists are the backbone of research work that focuses on the model and its dissemination and that examines social factors involved in artistic creation:

the role of institutions in the development of artistic knowledge, the means of dissemination and the reach of models through control and dissemination systems. A second area of research is based on a territorial approach that aims to establish a comparison between the maritime area of the North Atlantic, under the eye of modern period and contemporary period historians, and the South Mediterranean area, addressed by antique period historians. The territory itself is not studied but is considered as a means for apprehending the social phenomena of the past. The third area takes into account justice and violence, from the 16th century to current times: violence and resolving conflicts; history of criminal justice; conflicts, violence and criminality; history of practices and history of emotions. The fourth area is dedicated to political history and history of political ideas taken from a diachronic approach. This research links the study of ideologies and political practices based on the role of State agents and their entourages (and, as regards the contemporary period, elected representatives) in fulfilling government and administration acts. The ideas of standard and regulation are examined through different fields: legal, economical, doctrinal, etc. The study of rites and rituals of power aims to decrypt words, gestures, symbols, monuments and political scenes.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 13 (Limoges site)

Other researchers: 4

HDR (accredited to direct research): 5

Doctoral students (2011-2012): 10

Dissertations defended (2011-2012): 3

ECONOMIC ADDED VALUE

Conferences, seminars organized: 12 national and 5 international

HONOURS

Junior member of the IUF (Ph. Depreux)

PARTNERSHIPS

Active National University Partnerships:

University of Poitiers

House of Velasquez, University of Paris (UMR LAMOP)

University Paris West La Défense, French Historic Mission in Germany

Current International University Partnerships:

In Germany: Free University of Berlin (financing from ANR-DFG), of Hamburg (financing from Fritz Thyssen-Stiftung), of Munich, and of Tübingen.

In the Netherlands: University of Utrecht. Austrian Academy of Sciences(Vienna).

CRIHAM

www.flsh.unilim.fr/cerhilim

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Director

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Parent Institute

Institute of Science of Man
and Society (SHS)

Doctoral School

ED 525 Humanities, Thought, Arts and
History: Civilization and Literature from
Antiquity to the Present Day

lph.ed.univ-poitiers.fr

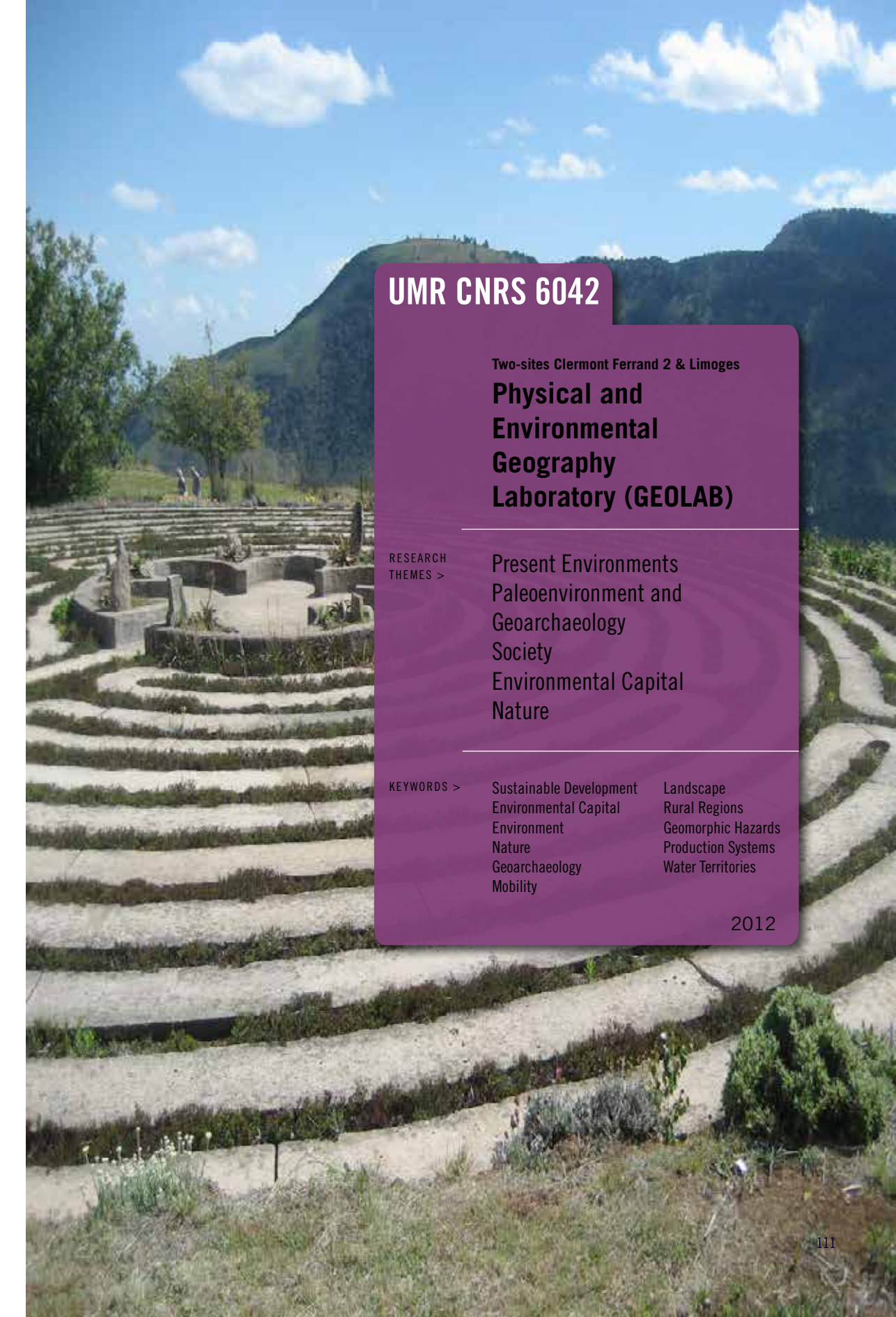


SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

Articles: 19 international and 8 in peer-reviewed journals
Number of works: 23
Book chapters: 20
Conference presentations: 28 national and 21 international
Others: 1

Major publications and/or patents over the last 5 years

- Fabien Archambault, "On a tiré sur Togliatti !" La difficile interprétation de l'attentat du 14 juillet 1948", "La Révolution française" [online], "L'attentat, objet d'histoire", online since 22 March 2012. URL: <http://lrf.revues.org/index466.html>
- Alexandra Beauchamp, "L'administration des profertes du bras royal catalan ou les conditions de son soutien à Pierre le Cérémonieux (1350-1357)", in F. Foronda (dir.), "Avant le contrat social. Le contrat politique dans l'Occident médiéval, XIIIe-XVe siècle", Paris, Publications de la Sorbonne, 2011, p. 481-505.
- Susanna Caviglia, "Charles-Joseph Natoire (1700-1777)", Paris (éditions Arthena) 2012.
- Vincent Cousseau, "La famille invisible. Illégitimité des naissances et construction des liens familiaux en Martinique mi XVIIe s. – déb. XIXe s.)", Annales de Démographie Historique, No. 2, 2011, p.41-67.
- Sylvio De Franceschi, "Raison d'État et raison d'Église. La France et l'Interdit vénitien (1606-1607) : aspects diplomatiques et doctrinaux", Paris (Honoré Champion) 2009 (Bibliothèque d'histoire moderne et contemporaine, 31).
- Philippe Depreux, Stéphane Lebecq, Michel Perrin & Olivier Szerwiniack (dir.), "Raban Maur et son temps", Turnhout (Brepols) 2010 (Haut Moyen Âge, 9).
- Paul D'Hollander and Claude Langlois (dir.), "Foules catholiques et régulation romaine. Les couronnements des vierges de pèlerinage à l'époque contemporaine (XIXe et XXe siècles)", Limoges (Pulim) 2011.
- Clotilde Druelle-Korn (dir.) "Les Corps Intermédiaires économiques, entre l'Etat et le Marché", Limoges (Pulim), 2011.
- Anne Massoni, "La collégiale Saint-Germain l'Auxerrois de Paris au XVe siècle", Limoges (Pulim) 2009 (Laureate of the Lantier Prize from the Académie des Inscriptions et Belles-Lettres, 2009)
- Jacques Péricard, "La province ecclésiastique au Moyen Âge. Divergences entre législation et réalité politique", in Eric Gojosso and Arnaud Vergne (dir.), "La Province. Circonscrire et administrer le territoire de la République romaine à nos jours", Poitiers, 2010, p. 47-72.



UMR CNRS 6042

Two-sites Clermont Ferrand 2 & Limoges

**Physical and
Environmental
Geography
Laboratory (GEOLAB)**

RESEARCH
THEMES >

Present Environments
Paleoenvironment and
Geoarchaeology
Society
Environmental Capital
Nature

KEYWORDS >

Sustainable Development
Environmental Capital
Environment
Nature
Geoarchaeology
Mobility

Landscape
Rural Regions
Geomorphic Hazards
Production Systems
Water Territories

2012

GEOLAB

Physical and Environmental Geography Laboratory

EQUIPMENT / TECHNICAL RESOURCES

Motor-driven core drill
Trimble GPS
Nikon episcopic microscopy
(SMZ800 binocular, microscope,
AZ100 macroscope) and Leica
diascopic microscopy
Laser scanner (high-resolution
topography)
Weather station
Geographical Information Systems
(Map Info., ArcGIS, ER mapper)
Database Management
System (Access, Oracle, Filemaker)
Remote sensing (Win ANS, ER mapper)
Statistical processing (XLStat,
Statistica, Grapher)
3D processing and reproduction
(various
3D tools, Surfer, VSN)



The Geolab Laboratory is a two-sites Joint Research Unit (UMR) linking the universities of Clermont-Ferrand 2 and Limoges with the CNRS and the INRAP (French National Institute for Preventive Archaeological Research). It comprises geographers, economists and archaeologists who study interactions between societies and the environment.

The environment is approached in two complementary ways:

- through the study of ecosystem management (resources, services provided to societies, risks, etc.);
- as if it was a social and political production, indispensable for societal and territorial reconstructions at a time when sustainable development is the watchword.

Research is organized around three thematic teams:

- “Current geoenvironmental dynamics”

This team is involved in two areas:

- Geomorphological dynamics related to matter processes and transfer
- The role of living organisms in geomorphological dynamics

- “Paleoenvironment and Geoarchaeology”

This team focuses on how societies in the past managed environmental resources, in particular, through agroforestry systems, territorial practices and landscape dynamics in medium-height mountain areas

- “Environmental capital”

This team’s research is based on three areas:

- Social construction and environmental mobilisation ;
- Environmental amenities and mobility;
- Environment and health risks.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 17
EPST and EPIC researchers: 1
Other researchers: 8
HDR (accredited to direct research): 5
Doctoral students (2011-2012): 20
Engineers, technicians: 7
Administrative agents: 1
Dissertations defended (2008-2011): 7
Current national projects: 3 ANR (French National Research Agency)

ECONOMIC ADDED VALUE

(2008-2011)

Conferences, seminars organized: 4 national and 4 international

PARTNERSHIPS

Active National University Partnerships:

Universities of Bordeaux 3, Grenoble, Lyon 2, Paris 1 and Paris 10, Poitiers, Rennes, Toulouse, ULCO, Pau, Angers, Clermont-Ferrand, Saint Etienne

Current International University Partnerships:

South Africa: University of Fort Hare;
Argentina: National University of Cuyo in Mendoza;
Spain: Universities of Barcelona SERP-UB, Las Palmas in the Canaries and ICAC in Tarragona;
Indonesia: Gadjah Mada University;
Portugal: Universities of Lisbon and Minho;
Sweden: University of Stockholm;
United Kingdom: Universities of Leicester and Loughborough

Research Groups (GDR):

Wood Research Group

Research Federations:

FREDD (Environment and Sustainable Development Research Federation, FR3097)
GEIST (FR 3503)

Physical and Environmental Geography Laboratory (GEOLAB)

<http://www.flsh.unilim.fr/geolab>

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Parent Institute

Institute of Science of Man
and Society (SHS)

Doctoral School

ED526: Societies and Organizations

sorg.ed.univ-poitiers.fr/



SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

Website publication: hal.archives-ouvertes.fr/GEOLAB

Articles: 17 international and 20 in peer-reviewed
journals

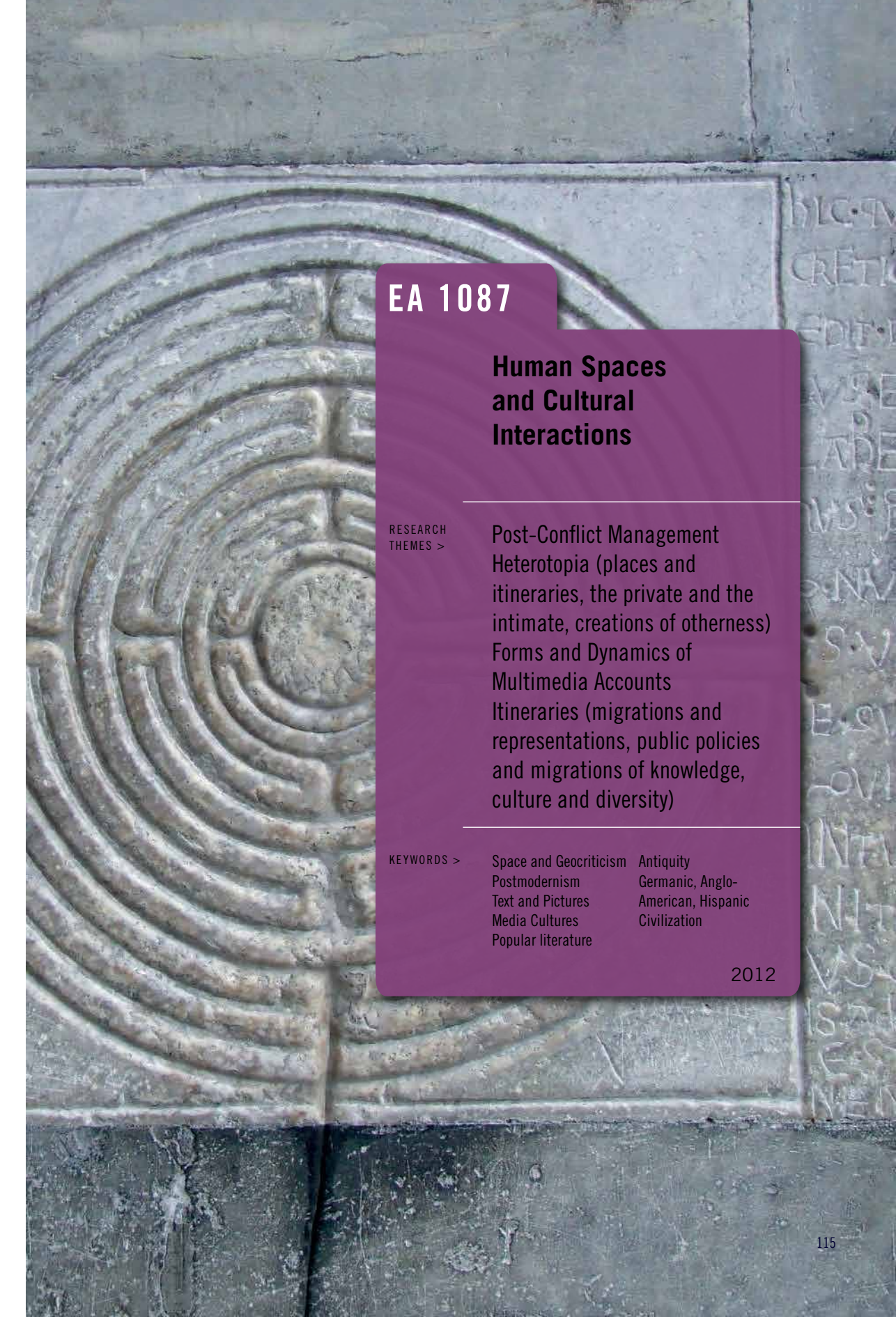
Book chapters: 53

Conference presentations: 78

Others: 29

Major publications and/or patents over the last 5 years

- Allée Ph., Paradis S., Boumédiène F., Rouaud R., 2010 - "L'exploitation médiévale du plomb argentifère sur le mont Lozère : archéologie spatiale d'un territoire proto-industriel montagnard". *Archéosciences*, 34, 177-186.
- Bal Marie-Claude, Albert Pelachs, Ramon Perez-Obiol, Ramon Julia, Raquel Cunill. 2011 - "Fire history and human activities during the last 3,300 cal yr BP in Spain's Central Pyrenees: The case of the Estany de Burg".
- Palaeogeography, Palaeoclimatology, Palaeoecology 300: 179–190. Beaurain C., Brulot S., 2011, "L'écologie industrielle comme processus de développement territorial : une lecture par la proximité", *Revue d'Economie Régionale et Urbaine*, No. 2, p. 313-340.
- Bernardie-Tahir N., 2011. "L'usage de l'île", Paris, Ed. Petra, Coll. "Des îles", 510 p.
- Garnier-Reymbaut E., Boumediene F., 2011. "L'action du Conseil Régional du Limousin face aux mobilités spatiales. Les TER : une réponse à la polarisation de Limoges". in Giroud M., Mainet H. and Edouard J.-C. (dir.), "Les mobilités spatiales dans les villes intermédiaires. Territoires, pratiques, régulations", CERAMAC international conference proceedings — EA 997, Clermont-Ferrand, November 2010, Clermont-Ferrand: Presses Universitaires Blaise Pascal, pp. 333-357.
- Guyot, Sylvain, 2011, "The Eco-Frontier Paradigm: Rethinking the Links between Space, Nature and Politics". *Geopolitics*, Volume 16, Number 3, pp. 675-706.
- Maleval V. - "Le lac de Saint-Pardoux, évolution du littoral et sédimentation lacustre". *Presse Universitaire Blaise Pascal*, coll. *Nature et Société*, No. 5, 169 p., 2010.
- Richard F., "La gentrification des "espaces naturels" en Angleterre : après le front écologique, l'occupation ?" *L'Espace Politique* [online], 9 | 2009-3, online since 20 January 2010, Viewed 26 February 2010. URL: <http://espacepolitique.revues.org/index1478.html>.
- Rouvellac Eric, Dellier Julien, Guyot Sylvain, 2012, "Entre terroir et territoire. La renaissance du vignoble sud-africain". *L'Espace géographique*, t. 40, No. 4, 337-351.



EA 1087

Human Spaces and Cultural Interactions

**RESEARCH
THEMES >**

Post-Conflict Management
Heterotopia (places and
itineraries, the private and the
intimate, creations of otherness)
Forms and Dynamics of
Multimedia Accounts
Itineraries (migrations and
representations, public policies
and migrations of knowledge,
culture and diversity)

KEYWORDS >

Space and Geocriticism	Antiquity
Postmodernism	Germanic, Anglo-
Text and Pictures	American, Hispanic
Media Cultures	Civilization
Popular literature	

2012

EHIC

Human Spaces and Cultural Interactions

TECHNICAL RESOURCES

Specialized documentary collection



The EA 1087 EHIC project focuses on four areas.

The first area is dedicated to studying post-conflict management (post-conflict landscapes and heritage, links between record and fiction, the role of minority literature in post-conflict management). As part of an institutional partnership with other teams from the Human and Social Sciences Research Institute in Limoges, the EHIC plays a key role in the interdisciplinary “Conflict and Post-Conflict” programme.

The second area of focus, referred to as “Heterotopia”, involves the spatiality research field, which has been one of the EHIC’s paramount concerns since the unit was established. Here, all forms of the literary locus otherness are envisaged from the real to the imaginary, from the symbolic to the rhetoric. The issues of writing of these places are examined through three complementary themes: places and itineraries, the private and the intimate, creations of otherness.

The third area is organized around another subject that perpetuates the team’s tradition: forms and dynamics and multimedia accounts. Importance is given, firstly, to the formal issues of the transmedial dissemination of mass consumption fictions and genres referred to as popular, where their narrative “media-genie” is adjusted to “mediativity” that is both restrictive and support-productive and, secondly, to the eminent value of societal and historic application of these corpora, which admittedly confirm mythical transhistorical permanence but also reveal profound changes that affect individual and collective identities on an anthropological level.

Finally, a fourth area provides the opportunity to develop the study of “itineraries” from a civilizationist perspective and is divided into three topics: migrations, itineraries and representations; public policies and migrations of knowledge; culture and diversity.

Both EHIC sites have also established a Research Federation: “Federation for the Study of Contemporary Civilizations” (in partnership with the civilizationists from the Universities of Poitiers, La Rochelle and Tours).



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 41 (on the two sites)

Other researchers: On average: 1 post-doctoral student/two years and guest researchers: 1/two years

HDR (accredited to direct research): 14

Doctoral students (2011-2012): 60

Dissertations defended (2008-2011): 25

Current European projects: 1

ECONOMIC ADDED VALUE

Conferences, seminars organized: 2 national and 13 international

HONOURS

Romain Garnier, Emile-Benvéniste Award, 2010

PARTNERSHIPS

Current National University Partnerships:

An ANR (French National Research Agency) is currently being established

Current International University Partnerships:

Currently being developed following the completion of two European projects

Partnerships with International Organizations and Institutions:

Project currently being implemented: Political advertising (University of Vienna (Austria), University of Kent (England), Academy of Sciences, Budapest, Higher School of Fine Arts, Budapest (Hungary), Comenius University, Bratislava (Slovakia))

Project currently being implemented: Mass consumption fictions (University of Leeds (England), Queen's College Belfast (Northern Ireland), Catholic University of Louvain (Belgium), University of Lleida (Spain), University of Bologna (Italy), University of Debrecen (Hungary), University of Ioannina (Greece), University of Gdansk (Poland), Institute of World Literature Moscow (Russia), Teluq/Open University, Canada)

Other Active Partnerships:

China: Xi'an

Central Europe: Budapest, Cluj

Italy: Naples Eastern University, Bologna, Pescara, Sapienza University Rome, Cagliari

Spain: Valencia

Germany: Bremen, Free University Berlin, Erlangen, Bayreuth, Erfurt

Great Britain: Durham

USA: UNC Charlotte, UNC Greensboro, Texas Tech University, Louisiana State University

Africa: Gambia, Cocody Abidjan

Interdisciplinary Programmes:

SHS RI Limoges / MSHS Poitiers programme, backed by the EA 1087 EHIC "Post-Conflict Management" programme, comprising 3 Limousin teams: OMIJ, FRED, CeReS

Research Federations:

"Federation for the Study of Contemporary Civilizations" (in partnership with the civilizationists from the Universities of Poitiers, La Rochelle and Tours + the EHIC Clermont-Ferrand).

Human Spaces and Cultural Interactions

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Parent Institute

Institute of Science of Man
and Society (SHS)

Doctoral School

ED 525 Humanities, Thought, Arts
and History:
"Civilization and Literature from
Antiquity
to the Present Day"

lpah.ed.univ-poitiers.fr/



SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

Website publication: hal-unilim.archives-ouvertes.fr/

Articles: 26 in peer-reviewed journals

Book chapters : 13

Chapters in works: 15

Conference presentations: 62

Others: 19 invited lectures and 44 other publications

Major publications and/or patents over the last 5 years

- ARTIAGA, Loïc, "Des torrents de papier. Catholicisme et lectures populaires au XIXe siècle", Limoges, Pulim, 2007.
- CUNIN, Muriel, "Shakespeare et l'architecture, Nouvelles inventions pour bien bâtir et bien jouer", Honoré Champion, 2008.
- GARNIER, Romain, "Sur le vocalisme radical du verbe latin", Innsbruck, 2010, 519 p.
- KOVACSHAZY, Cécile, "Littérature romani : construction ou réalité ?", Etudes tsiganes, No. 37, 2009 (edition).
- KUHNLE, Till, Till R. Kuhnle /Carmen Oszi / Saskia Wiedner (dir.) : "Orient lointain - proche Orient. La présence d'Israël dans la littérature francophone", Tübingen : Narr (Edition Lendemanns) 2011.
- LANGLET, Irène, "La science-fiction. Lecture et poétique d'un genre littéraire", Armand Colin, coll. U, 2006, 300 p.
- LE BERRE, Aline, "Pouvoir de l'illusion. "Moi lyrique" et theatrum mundi dans la poésie baroque allemande et chez J. C. Günther", Pulim, 2012.
- MIGOZZI, Jacques, "Roman populaire et idéologie : bouquet final de notes en forme de points d'interrogation" in Roman populaire et idéologie, Jacques Migozzi and Loïc Artiaga dir., Belphegor, Volume 9, No. 2, January/February 2010: <http://etc.dal.ca/belphegor/>
- PRADELLE, Laurence, Leonardo Bruni Aretino. "Histoire, éloquence et poésie à Florence au début du Quattrocento", Honoré Champion, 2008, 982 p.
- WESTPHAL, Bertrand, "La Géocritique. Réel, fiction, espace", Paris, Éditions de Minuit, coll. "Paradoxe", 2007, 304 p. (translated in Italian and in English (Geocriticism: Real and Fictional Spaces)).
- WESTPHAL, Bertrand, "Austro-fictions : Une géographie de l'intime", Publications de l'Université de Rouen et du Havre, éditeur, coll. "Austriaca", 2010, 190 p.
- WESTPHAL, Bertrand, "Le Monde plausible. Espace, lieu, carte", Paris, Éditions de Minuit, coll. "Paradoxe", 2011, 256 p. (currently being translated in English).



EA 3177

Observatory of Institutional and Juridical Mutations (OMIJ)

RESEARCH THEMES >

The Quality of Law and Norm, its
Sanction
Administration and Quality of
Justice
International Criminal Law and
International and Transitional
Criminal Justice
European Law of Human Rights
The Sources of Law
Law and Social Representation
Environmental Law
Law and Economics of Sport

KEYWORDS >

Public Law	Comparative Law
Private Law and Criminal	European Law
Sciences	International Law
Procedural Law and	History of Law and
Procedures	of Institutions
Civil Liberties and Human	Historical
Rights	Anthropology of Law
Labour Law	Justice
Local Authorities	Law and Economics
Criminal Law and Criminal	of Sport
Procedure	Environmental Law

2012

OMIJ

Observatory of Institutional and Juridical Mutations

SERVICES PROVIDED

Center for the Law
and Economics of Sport:
expertise assignments and training

COJITE (International Transitional
Justice Observation Centre):
expertise assignments

TECHNICAL RESOURCES

Specialized documentary collection



The Laboratory comprises three teams, the OMIJ (Observatory of Institutional and Juridical Mutations), the CRIDEAU (Interdisciplinary Research Centre for Environmental, Urban Planning and Development Law) and the CDES (Centre for the Law and Economics of Sport), the latter two are thematic teams. The lab wished to group the activities of the teams together around a joint work programme, whilst continuing to comply with the research particularities of each thematic team.

As such, the research programme deals with justice and the protection of fundamental rights, and focuses on four specific scientific programmes:

- changes in French law as a result of the influence of human rights: strengthening of procedural guarantees, ECHR contribution to ensuring the efficacy of fundamental rights, limits of traditional judicial responses: conflict management, anthropological approach and alternative means for solving conflicts;
- the administration of legal systems in Europe, judge better by administrating better: administration of justice and assessment of legal systems in Europe, the economic performance of legal systems in Europe;
- justice, activities of general interest and protection of social rights: the change in activities of general interest, development factor for social rights, protection of the rights of agents vis-à-vis the change in assignments of general interest;
- justice and protection of life vis à vis risks (protection of populations faced with the diversification of risks, justice and protection of animals).

This research programme has been assessed by the AERES (French Evaluation Agency for Research and Higher Education) and approved by the French Ministry for Higher Education and Research. The teams, however, pursue more extensive research; the OMIJ works on justice, including transitional justice; the CRIDEAU works on environmental law and on sustainable development, focusing on the aspect of public participation in decision-making and the CDES studies the legal and economic aspects of sports activities and focuses on issues relating to the status and image of sports people and the economic analysis of professional sport.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 35
 Other researchers: 1
 HDR (accredited to direct research): 22
 Doctoral students (2011/2012): 68
 Engineers, technicians: 1
 Dissertations defended (2008/2011): 27
 Current national projects: 2 ANR (French National Research Agency)
 (1 completed in June 2012, 1 ongoing),
 tenders with the French mission de
 droit et justice (Law and Justice
 Research Mission) (2 ongoing)

ECONOMIC ADDED VALUE

(2008-2011)

National conferences, seminars
 organized: 4
 International conferences, seminars
 organized: 7

HONOURS

1 Junior member of the IUF (2005-2010)

PARTNERSHIPS

Active National University Partnerships:

Active partnerships with the Universities of Poitiers and Paris I
 within the framework of the ANR MAJICE project

Current International University Partnerships:

Development of the EUROPA network with the cooperation of
 17 European states.

Partnership with European universities within the framework of the COJIT
 project on international criminal justice and with international criminal
 courts.

Partnership with the National University of the Coast, Santa Fe (Argentina)
 within the "ECOS" programme framework (research on non-regression in
 environmental law, an observatory is currently being developed with other
 South American, Asian and European partners).

Partnership with South American universities (Paraguay and Uruguay) on
 a training component (delocalization of a Masters 2 in Law and Economics
 of Sport) and on a research component (comparative analysis of the
 organization of sports)

Partnerships with National Organizations and Institutions:

Partnership with various sports bodies within the framework of research in
 the sports field (CNOSF (French National Olympic and Sports Committee),
 national sports federations and sports leagues)

Partnerships with International Organizations and Institutions:

Participation in the activities of the International Association of Sports
 Economists

Scientific Interest Groups (GIS):

Sensitive rural territories in the Massif Central

Research Groups (GDR):

Scientific and Technical Law Research Group

GIP GRIDAUH (GR) (Research Group on Institutions, Urban Planning and
 Development and Habitat Law)

Research Federation:

MS SHS (Sports Management – Institute of Science of Man and Society)
 Poitiers

Observatory of Institutional and Juridical Mutations (OMIJ)

unilim.fr/omij

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Parent Institute

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Doctoral School

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Law and Political Science

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SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2012)

Website publication: hal-unilim.archives-ouvertes.fr/OMIJ/

International articles: 145

Conference presentations: 70

Others: 15 works and 90 chapters in works

Major publications and/or patents over the last 5 years OMIJ team

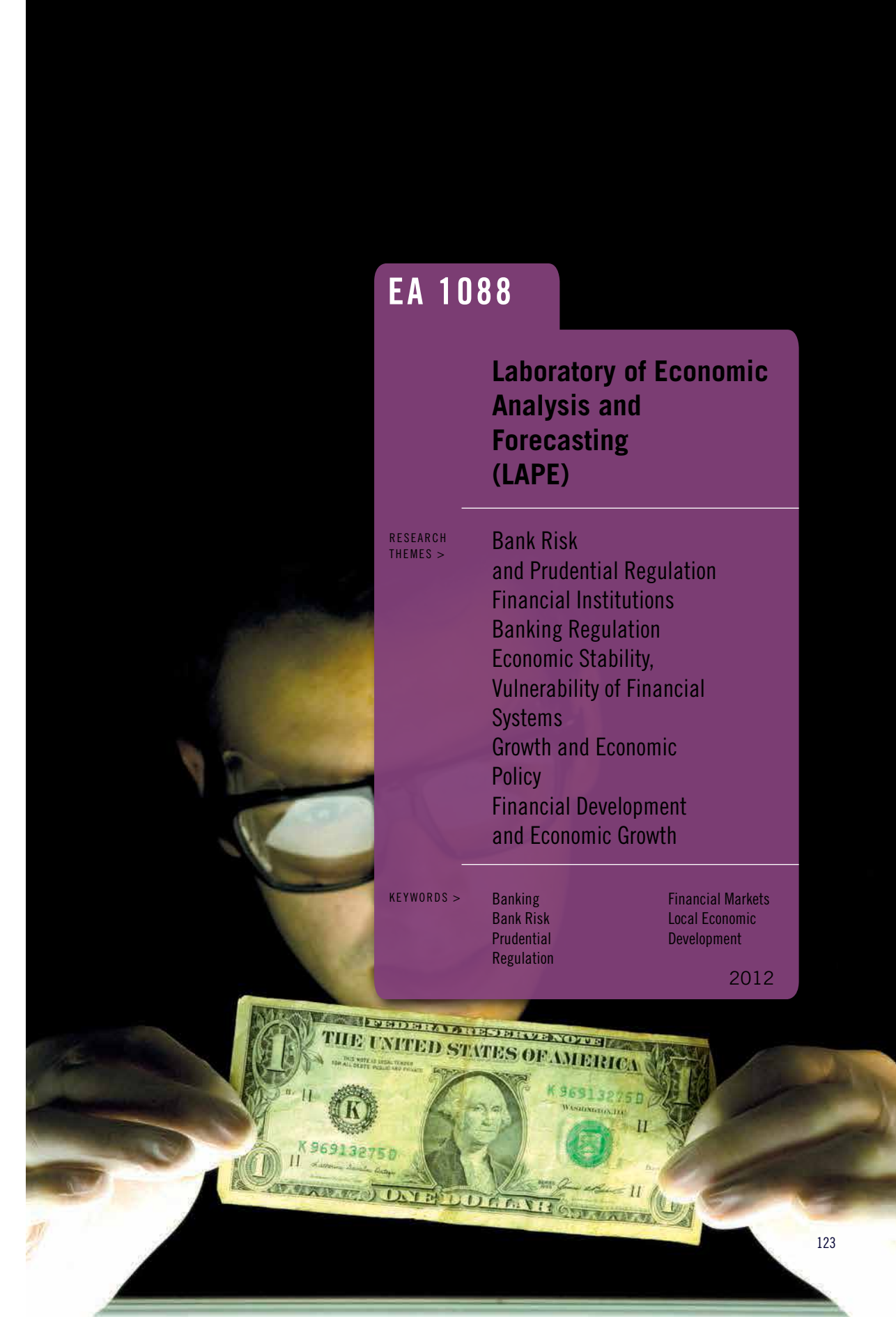
- "Revue Européenne de l'Action Publique (REAP)", No. 1, EUROPA network, 2009
- "Technique et droits humains", Limoges and Poitiers 2010 conference proceedings, RERDH (European Network for Human Rights Research), Montchrestien
- "L'offense: du "torrent de boue" à l'offense du chef de l'Etat", Cahiers de l'Institut d'Anthropologie Juridique, PULIM, 2010
- "Le justiciable et la protection de ses droits fondamentaux : la question prioritaire de constitutionnalité", Pauliat, Négron, Berthier, PULIM, 2011
- Revue semestrielle de droit animalier, No. 7, 2012
- Programme MAJICE, developed by the ANR (2008-2012)

Pour l'équipe CDES

- Code du Sport, 7th ed., 2012 with CDRom
- "Evènements sportifs : impacts économique et social", Gouguet, Barbet, de Boeck, Brussels 2010,
- Revue JURISPORT, Revue Juridique et Economique du Sport (RJES), Dalloz

Pour l'équipe CRIDEAU

- "Les catastrophes écologiques et le droit : échecs du droit, appels au droit", Lavieille, Betaille, Prieur, Bruylant, 2012
- Revue Juridique de l'Environnement
- Revue Européenne de Droit de l'Environnement



EA 1088

Laboratory of Economic Analysis and Forecasting (LAPE)

RESEARCH
THEMES >

Bank Risk
and Prudential Regulation
Financial Institutions
Banking Regulation
Economic Stability,
Vulnerability of Financial
Systems
Growth and Economic
Policy
Financial Development
and Economic Growth

KEYWORDS >

Banking
Bank Risk
Prudential
Regulation

Financial Markets
Local Economic
Development

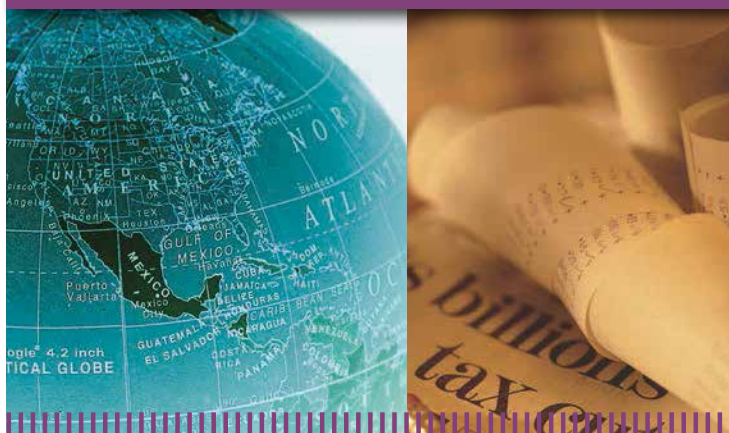
2012

Laboratory of Economic Analysis and Forecasting

Studies, training

Services (banking and finance)

Specialized documentary collection,
databases



“Capital structures, banking strategies and risk: challenges for supervision” and “balance sheet constraints and banking risk: lessons for regulation”.

These two themes must play a role in the development of methods and tools used by banking and monetary authorities to help prevent bankruptcies and crises; as such, they contribute to the security and stability of the financial system and also raise the issue of the impact exerted by new prudential rules on the performance of economies.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 14

Other researchers: 2 post-doctoral students and 10 researchers

HDR (accredited to direct research): 6

Doctoral students (2011-2012): 13

Administrative agents: 1

Dissertations defended (2008-2011): 9

Other projects: Research agreement with JPLC Credit Risk.

PHC Orchid programme (Taiwan).

“Ownership Structure and Bank Risk”

BQR Support for International Research Networks (University of Limoges), along with Rensselaer New York, New York

University, University of Bangor (UK), Copenhagen Business School, University of Groningen (The Netherlands).

“Ownership Concentration, Commissioner Power and Risk Management in Indonesian Banking”, DIKTI-SCAC French Embassy “Overseas Research Cooperation and International Publication” Programme.

DIKTI-SCAC French Embassy “Overseas Research Collaboration with University or Industry” Programme.

Research agreement with JPLC Credit Risk.

“Conglomerats financiers et crises systémiques” (Financial Conglomerates and Systemic Crises), Limousin Poitou-Charentes PRES research project.

PARTNERSHIPS

Current National University Partnerships:

University of Poitiers, University of Strasbourg, University of Paris I Panthéon-Sorbonne, University of Bordeaux IV-Montesquieu.

Current International University Partnerships:

University of Birmingham (United Kingdom), Bangor University (United Kingdom), Copenhagen Business School (Denmark), University of Southern California (USA), New York University (USA), Rensselaer, New York (USA), Fordham University (USA), University of Colorado (USA); University of Kansas (USA), Chapman University (USA), University of the Philippines (Philippines), National Chengchi University (Taiwan), Nanhua University (Taiwan), Sebelas Maret University (Indonesia) and Guadja Mada University (Indonesia).

National Industrial Partnerships:

“Banking vulnerability: liquidity creation, capitalization and balance sheet structure”, research agreement with JPLC Credit Risk, November 2008/ November 2010. “Modelling the performance of assets and optimizing risks in times of stress”, research agreement with JPLC Credit Risk, January 2011/December 2013.

Partnerships with National Organizations and Institutions:

The European Money and Finance Forum (SUERF).

Research Groups (GDR):

European Research Group (GDRE) on “Money, Banking and Finance”

Laboratory of Economic Analysis and Forecasting (LAPE)

www.unilim.fr/lape

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Doctoral School

ED 526 Societies and Organizations

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SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2012)

Website publication: www.unilim.fr/lape/research/article/publications

Articles: 40 international and 40 in peer-reviewed journals

Number of books : 1

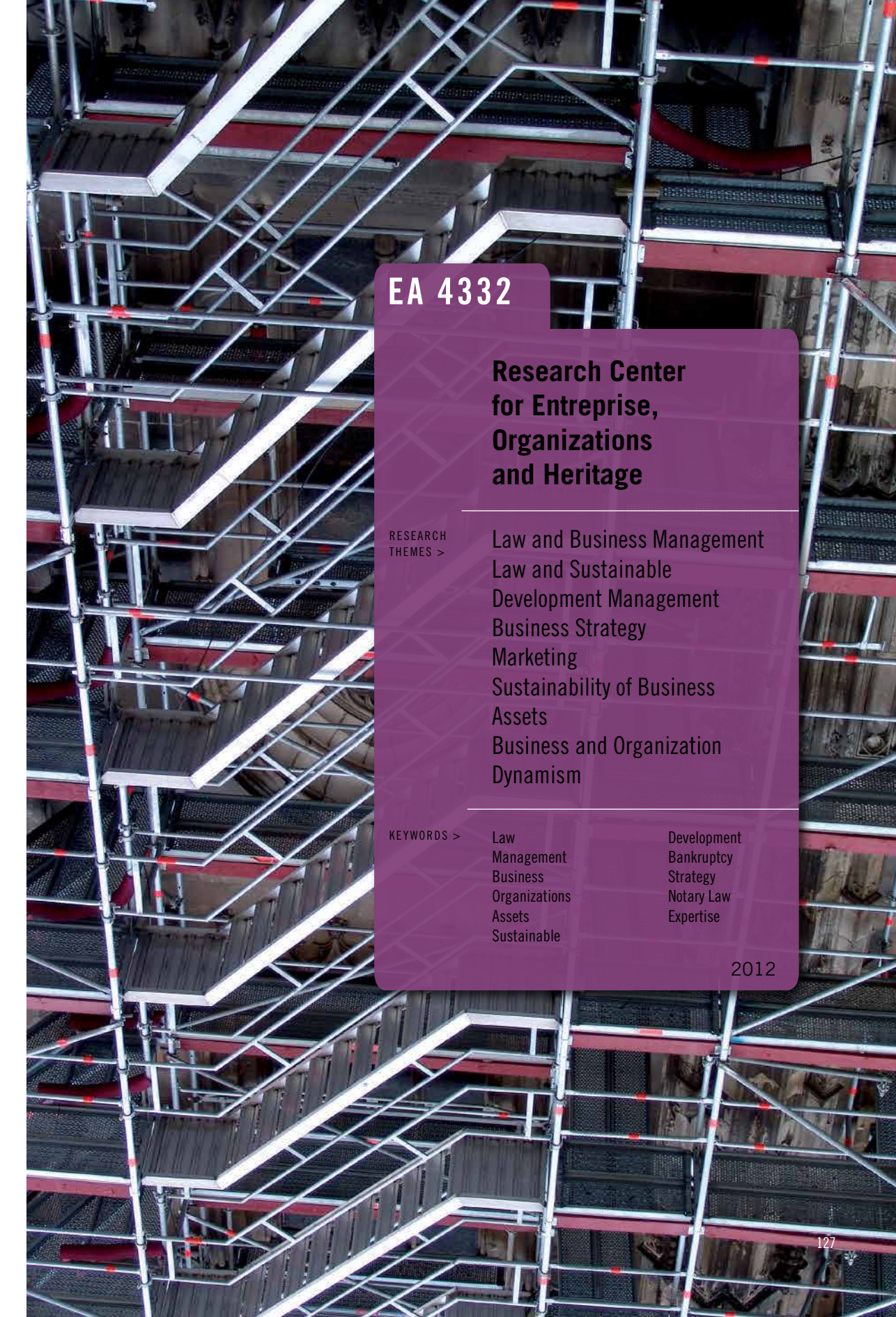
Book chapters : 5

Conference presentations: 111

Others: 1 work editing and 19 general public presentations

Major publications and/or patents over the last 5 years

- Lepetit L., Nys E., Rous P., and Tarazi A., 2008, "Bank income structure and risk: An empirical analysis of European banks", *Journal of Banking and Finance*, vol. 32 (8).
- Lepetit L., Nys E., Rous P. and Tarazi A., 2008, "The expansion of services in European banking: implications for loan pricing and interest margins", *Journal of Banking and Finance*, vol. 32 (11).
- Bautista C., Rous P., and Tarazi A., 2009, "The determinants of bank stock return's co-movements in East Asia", *Economics Bulletin*, vol. 29 (3).
- Distinguin I. and Tarazi A., 2010, "Are early market indicators of financial deterioration accurate for Too Big To Fail banks? Evidence from East Asia", *Economics Bulletin*, vol. 30 (2).
- Barry, T., Lepetit L., and Tarazi A., 2011, "Ownership structure and risk in publicly held and privately owned Banks", *Journal of Banking and Finance*, vol. 35(5).
- Darreau P. and Pigalle F., 2011, "Ponzi game in OLG model with endogenous growth and productive government spending", *Economics Bulletin*, vol. 31, No. 3.
- Distinguin I., Kouassi T., and Tarazi A., 2012, "Interbank Deposits and Market Discipline: Evidence from Central and Eastern Europe", *Journal of Comparative Economics*, forthcoming.
- Abedifar P., Molyneux P., and Tarazi A., 2012, "Risk in Islamic Banking", *Review of Finance*, forthcoming.
- Lepetit L., Strobel F., and Dickinson D., 2012, "Does uncertainty matter for loan charge-offs?", *Journal of International Financial Markets and Institutions and Money*, vol. 22 (2).
- Meslier-Crouzille C., Nys E., and Sauviat A. 2012, "Contribution of Rural Banks to Regional Economic Development: Evidence from the Philippines", *Regional Studies*, vol. 46(6).
- Rugemintwari C., Sauviat A., Tarazi A., 2012, "Bâle 3 et la réhabilitation du ratio de levier des banques : Pourquoi et comment ? »", *Revue Économique* volume 63(4), pp. 809-820.



EA 4332

Research Center for Enterprise, Organizations and Heritage

RESEARCH THEMES >

Law and Business Management
Law and Sustainable
Development Management
Business Strategy
Marketing
Sustainability of Business
Assets
Business and Organization
Dynamism

KEYWORDS >

Law
Management
Business
Organizations
Assets
Sustainable

Development
Bankruptcy
Strategy
Notary Law
Expertise

2012

CREOP

**Research Center
for Enterprise,
Organizations
and Heritage**

SERVICES PROVIDED

Studies, training

TECHNICAL RESOURCES

Specialized documentary collection



The CREOP is a transdisciplinary research centre created to allow business managers and jurists from the University of Limoges to carry out joint research on the theme of business and, more broadly, organizations and assets. Assets refers to that of economic players.

Research focuses on two areas:

The dynamism of businesses and organizations:

- Governance
- Management of human resources and labour law
- Industrial property
- Distribution law and changes in marketing
- Competition law and strategic competitive management
- Health law and management
- Environmental law and business strategy

The sustainability of private business assets:

- Fighting in-business vulnerabilities that may result from events such as the death, the retirement or the divorce of the entrepreneur.
- Fighting external business vulnerabilities, which primarily concerns attempts to prevent difficulties and receivership.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 17

Other researchers: 9

HDR (accredited to direct research): 8

Doctoral students (2011-2012): 19

Dissertations defended (2088-2011): 9

Others: Partnership with Mauritius on auditing the local Civil Code and auditing training for the legal professions.

ECONOMIC ADDED VALUE

Conferences, seminars organized: 4

PARTNERSHIPS

Active National University Partnerships:

Univeristy of Poitiers training was partially attached to the CREOP in 2009

Current International University Partnerships:

Professors from Romania (Cluj-Napoca) and from Cameroon (Yaounde II) invited to Limoges. Plans are currently underway to invite a Spanish professor.

National Industrial Partnerships:

Research agreement with an insurance company

Research Federation:

Gaston Berger Federation (FR 4221)1)

Research Center for Enterprise, Organizations and Heritage (CREOP)

www.creop.unilim.fr

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Parent Institute
Institute of Science of Man
and Society (SHS)

Doctoral School
ED 526: Societies and Organizations

sorg.ed.univ-poitiers.fr/



SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

Website publication: hal-unilim.archives-ouvertes.fr/CREOP

Articles: 12 international and 68 in peer-reviewed journals

Number of works: 11

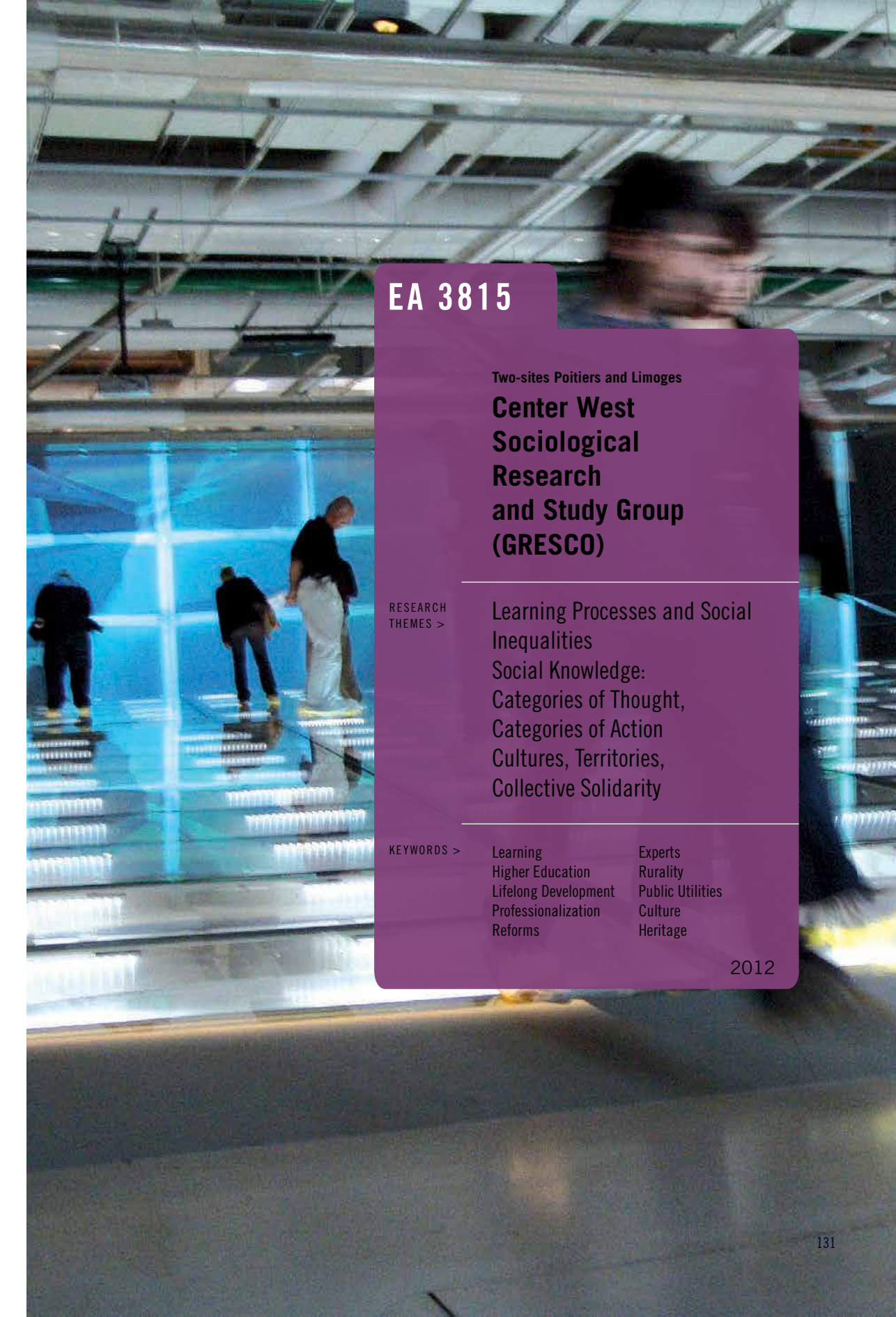
Book chapters: 36

Conference presentations: 21

Others: 43

Major publications and/or patents over the last 5 years

- Becuwe Audrey, with Maque Isabelle, Prim-Allaz Isabelle, Garnier Alice, 2012, "Profiting from diversity in the Banking Sector", in MOSS Gloria, "Lessons on Profiting from Diversity", Palgrave Macmillan, 27 pages.
- Chamoulaud-Trapiers Annie: V° "Usufruit", Répertoire civil Dalloz, 2012 (394,000 characters).
- Dumas Romain, work titled: "Intelligence économique d'entreprise", Ed. Lefebvre 2011 (287 pages).
- Gouteron Joël : "L'intégration d'une mesure de l'attachement à la marque dans les études de satisfaction", La Revue des Sciences de Gestion (Direction & Gestion des entreprises), No .252, November-December 2011, pages 109 to 117.
- Lagarde Vincent with Macombe C., (2012), "Designing the social life cycle of products from the systematic competitive model", The International Journal of Life Cycle Assessment, 02 June 2012, 13 pages excluding appendices (Impact Factor 2011: 2.362).
- Leobon Thierry : "Cession sous seing privé d'un bail notarié : le sort du titre exécutoire", JCP E 2012 p. 1447.
- Mathé Jean-Charles : "Sphères d'influence et croissance conjointe : le cas des quatre mousquetaires de l'hygiène", La Revue des Sciences de Gestion (Direction & Gestion des entreprises), No. 252, November-December 2011, pages 27 to 35.
- Pasquet P., Liarte S : "La société coopérative et participative (SCOP) : outil de gestion pour l'entrepreneur social ou nouvelle hypocrisie managériale ?", revue RIMHE (Revue Interdisciplinaire sur le Management et l'Humanisme), 2012, No. 3, pp 3 to 16.
- Vareille Bernard : V° "Communauté: liquidation et partage", Répertoire civil Dalloz, 2011 (85 pages).
- Yildirim Gulsen : V° "Séparation de biens", Répertoire civil Dalloz, 2012, (65 pages).



EA 3815

Two-sites Poitiers and Limoges

**Center West
Sociological
Research
and Study Group
(GRESO)**

RESEARCH
THEMES >

Learning Processes and Social
Inequalities
Social Knowledge:
Categories of Thought,
Categories of Action
Cultures, Territories,
Collective Solidarity

KEYWORDS >

Learning
Higher Education
Lifelong Development
Professionalization
Reforms

Experts
Rurality
Public Utilities
Culture
Heritage

2012

GRESKO

**Center West
Sociological
Research
and Study
Group**

SERVICES PROVIDED

Studies, sociological surveys (quantitative/qualitative), training

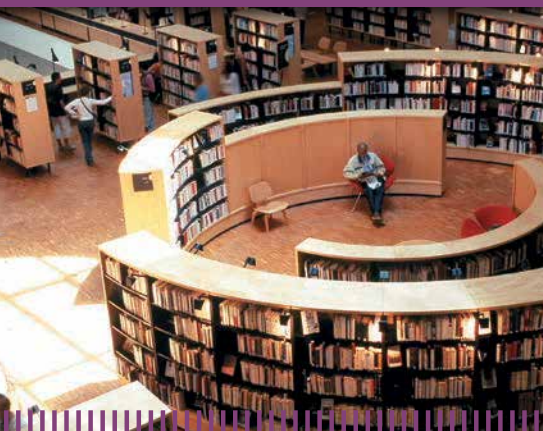
RESSOURCES TECHNIQUES

Documentary collection in Social and Political Science research



The GRESKO focuses on 3 research areas:

- “Development and certifications: sociology of learning”. Here we take an interest in learning processes, mechanisms and systems within structures (schools, training centres, businesses, etc.), which validate and certify learning and, on a wider level, within traditional socialization spheres (families, districts, community groups, businesses, jobs, etc.); logically-speaking, this area comprises the analysis of development paths that the phases of any learning impose on individuals and groups that the individual is involved in.
- “Professionalization, expertise and reforms: sociology of categories and classifications”. The study of categories and classifications is a fundamental approach of sociology and is distinctly in line with the Durkheimian orientation (categories and classifications as institutions). It reflects on naturalized categories by questioning the conditions of their invention and their institutionalization on the one hand and, on the other hand, by reflecting on cognitive and political representation work and its effects of constituting social groups and social issues.
- “Cultures, territories and inequalities: sociology of social spaces”. The core issue of this area can be found at the point where cultures, territories and inequalities meet. The idea of culture is addressed here in its polysemy: it refers just as much to issues on cultural practices, appropriation and identification as to the analysis of cultural policies. The idea of territory is also envisaged here in a wider sense. Territory is in particular viewed in terms of demographic modifications, which affect its social composition, its activities, its development and its representations.



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 11

HDR (accredited to direct research): 3

Doctoral students (2011-2012): 14

Dissertations defended (2008-2011): 2

ECONOMIC ADDED VALUE

(2008-2011)

Conferences, seminars organized:

2 national

and 2 international

PARTNERSHIPS

Active National University Partnerships:

University of Poitiers (GRESO, EA 3815)

Nantes Sociology Centre, University of Nantes (CENS)

European Sociology and Political Science Centre, University of Paris I
(CESSP)

Center West Sociological Research and Study Group (GRESO)

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Doctoral School
ED 526 Societies and Organizations

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SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

Website publication: hal-unilim.archives-ouvertes.fr/

Articles: 20 in peer-reviewed journals

Number of works: 10

Book chapters: 14

Conference presentations: 20

Others: 23

Major publications and/or patents over the last 5 years

- Choukri Ben Ayed., "Le nouvel ordre éducatif local. Mixité, disparités, luttes locales", Paris, Presses universitaires de France, 2009
- Choukri Ben Ayed., "L'école démocratique. Un renoncement politique ?", Paris, Armand Colin, 2010.
- Philippe Brunel et alii, "On the dynamic process of change in contextual (or general) motivation toward exercise and physical activity: The Contributing Role of Situational (or State) Motivation". *International Journal of Sport and Exercise Psychologist*, No. 31, 2009
- Sylvain Laurens and Frédéric Neyrat (dir.), "Enquêter de quel droit ? Menaces sur l'enquête en sciences sociales", Bellecombe en Bauges, éditions du Croquant, 2010
- S. Laurens, "Une politisation feutrée. Les hauts fonctionnaires et l'immigration en France (1962-1981)", Paris, Belin, coll. Socio-histoire, 2009.
- Yvon Lamy et Francis Marchan, "Familles françaises et limousines en recomposition : de la morphologie à l'éthique", *Archives en limousin*, 2009-1, No. 33
- Frédéric Neyrat (dir.), "La validation des acquis de l'expérience. La reconnaissance d'un nouveau droit", Editions du Croquant, 2007
- Marie-Pierre Pouly, "La promotion d'un savoir utile dans l'ordre scolaire français de la Troisième République : le cas des langues étrangères", *Cahiers de la recherche sur l'éducation et les savoirs*, No. 6, 2007
- Marie-Pierre Pouly, "Proust ethnographe et policier symbolique. Diffusion de l'anglais et maintien des écarts linguistiques", *Actes de la recherche en sciences sociales*, June 2011
- Catherine VILKAS, "Des pairs aux experts : l'émergence d'un "nouveau management" de la recherche scientifique", *Cahiers Internationaux de Sociologie*, vol. CXXVI, 2009



EA 6311

Francophonie, Education and Diversity (FRED)

**RESEARCH
THEMES >**

Education French-Speaking Areas
Information and Communication
Technologies (ICT)
Spanish-American Civilization
Cultural Diversity
Interculturality
Migrant Cultures
Gender Relationships
Building Identities
Life Stories
Didactics

KEYWORDS >

Diversity
Education
Training
Didactics
ICT
Interculturality

Francophone Countries
Civilizations
Latin America
Gender
Reflexivity

2012

FRED

Francophonie, Education and Diversity

SERVICES PROVIDED

Advice, expertise, training

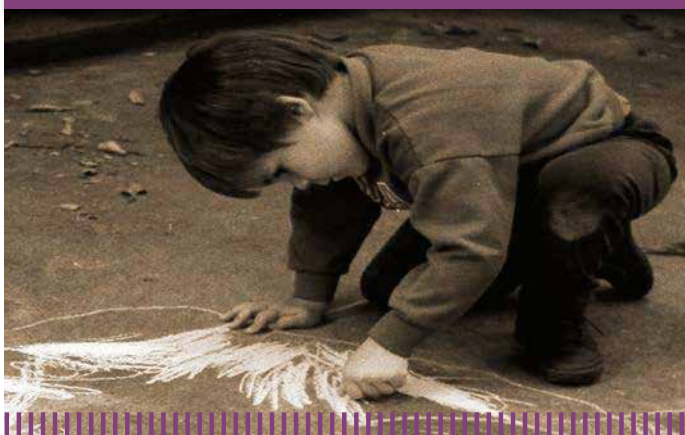
FIELDS OF APPLICATION

Education, training, diversity

TECHNICAL RESOURCES

Specialized documentary collection.

Online resources.



The Francophonie, Education and Diversity, EA 6311 (FRED) is organized around a common issue - diversity. This approach develops a link between specialists of Francophone knowledge, educational science and civilizationists as well as synergy between the themes addressed: material and imaginary reality, representation and “ideal”, migrant cultures, French-speaking and non French-speaking areas, building identity through space, history, environment, gender relationships, social implications, cultural diversity, digital spaces and the analysis of education and training systems in developed and developing countries.

The multilingualism and the multidisciplinary aspect of the team promote synergy between researchers and the development of international networks.

The FRED's partnership with foreign universities, in particular African universities, in the fields of Francophone countries and educational science, the creation of a researcher network in Latin America, the FRED's performances in the field of ICT, in didactical research, and the fact that its courses are professionalizing, enhance its appeal for doctoral students.

The team runs an international review backed by a scientific committee: Dire (Diversités – Recherches et terrains) <http://epublications.unilim.fr/revues/dire>



KEY FIGURES

(at 1st January 2012)

Teacher-researchers: 18

HDR (accredited to direct research): 4

Doctoral students (2011-2012): 51

Dissertations defended (2011-2012): 12

ECONOMIC ADDED VALUE

Conferences, seminars organized: 2

PARTNERSHIPS

Active National University Partnerships:

Member of the Limousin Poitou Charentes PRES,
Federation for the Study of Contemporary Civilizations "Politics, Cultures and Identities in Contemporary Civilizations"
(MIMMOC – POITIERS, EHIC – LIMOGES - GRAAT –TOURS)

Current International University Partnerships:

Algeria: University of Mostaganem

Argentina: Lanus University, Buenos Aires

Brazil: Dom Bosco Catholic University, Campo Grande, Mato Grosso do Sul

Burkina Faso: Zie Engineering School, Ouagadougou, University of Ouagadougou

Haiti: CREFI, Notre Dame of Haiti University, Port au Prince

Mexico: Chiapas Intercultural University (UNICH), Centro de Investigación en Alimentación y Desarrollo (CIAD), Hermosillo, Sonora, Sonora Technical Institute (ITSON), Ciudad Obregón, Sonora

Venezuela: Centro de Estudios de la Mujer (CEM) (Women's Study Centre), Central University of Venezuela, Caracas

Czech Republic: University of Hradec Kralove, University of Brno

Agence Universitaire de la Francophonie (AUF) agreement Online review frantice.net (www.frantice.net)

Scientific Interest Groups (GIS):

Institut des Amériques

Research Groups (GDR):

Latin America, Europe, the Caribbean Network (ALEC) "Gender Relationships and Social Practices"

Francophonie, Education and Diversity (FRED)

www.flsh.unilim.fr/fred

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Institute of Science of
Man and Society (SHS)

Doctoral School

ED525: Humanities, Thought, Arts and
History "Civilization and Literature
from Antiquity to the Present Day"

lph.ed.univ-poitiers.fr

SCIENTIFIC PRODUCTION OF RESEARCH TEAM (2008-2011)

Website publication: hal-unilim.archives-ouvertes.fr/FRED

Articles: 55 international and 52 in peer-reviewed
journals

Book chapters: 20

Conference presentations: 60

Major publications and/or patents over the last 5 years

- P. Bessaoud Alonso (2012). "Paroles d'adolescents ordinaires âges et relations de genre", in "Genre et parcours de vie. Enfance, adolescence et vieillissement" (Monique Legrand, dir.), Presses Universitaire de Nancy
- J. Béziat (2012). "A distance d'un objet proche. Stéréotypes et réflexivité en se formant aux et par les TICE". Recherches et Educations, No. 6 "Les non-usages de TIC : modélisations, explications, remédiations".
- M. Beniamino (2010). "Francophonie et interdisciplinarité : éléments d'une réflexion épistémologique", Interstudia. Revue du centre interdisciplinaire d'étude des formes discursives contemporaines, No. 7, p. 99-106.
- C. Filteau (2011). "Renaud Longchamps et la loi de la gravité dans Légendes et Sommaton sur l'histoire". In Voix et Images, Montréal, Université du Québec à Montréal, No. 107.
- D. Gay-Sylvestre (2011). "La cause des femmes cubaines" in Cuestiones de género. De la igualdad y la diferencia, Revista de la Universidad de León, "Las mujeres, la guerra y la paz", No. 6, June 2011, pp. 205-227, 326 p.
- Guillaumin C. (2012) "La situation professionnelle : moment critique dans l'action, Interface de la formation en alternance le cas particulier de la formation en soins infirmiers". Phronesis, vol. 1, No. 1. URL: <http://www.erudit.org/apropos/utilisation.html>, pp. p. 21-39.
- H. Sauzéon, M. Déjos, P. Lestage, P. A. Pala, B. N'Kaoua. "Developmental differences in explicit and implicit conceptual memory tests: a processing view account". Child Neuropsychology, April 2011, iFirst, 1-27, DOI:10.1080/09297049.2011.557652.
- J.F. Marchat (2012). "Paul Faucher, éducateur du sensible. Atelier et école du Père Castor", Chemins de formation (16), Nantes, Université de Nantes, 111-127.
- R. Marti Solano (2010) "Proverbs in the press: from 'sentence-like units' to 'word-like units'" in R. Soares & O. Lauhakangas (eds.) Proceedings of the 3rd Interdisciplinary Colloquium on Proverbs, Tavira: International Association of Paremiology, 310-320.
- M. Moyon (2011) "When the zelliges enter the class... A study in symmetry", in Djebbar, A. (dir.) "The discoveries in Islamic Countries", Paris, Le Pommier, 2009, p. 111-126. English version [Moyon, 2009].

The background of the page features a stylized illustration of a hand in shades of purple and blue. The hand is positioned with fingers spread, and its palm and fingers are overlaid with glowing yellow and white circuit-like lines, suggesting a digital or technological theme. A large, semi-transparent yellow rectangle is placed over the center of the hand, serving as a backdrop for the text.

The Partnership Foundation

The Foundation promotes the University of Limoges among businesses and partners from the socio-economic world, as well as among private individuals. Considered as a genuine partnership tool, it aims to make people aware of and appreciate:

- The relevance of the courses given and the development of student reception and support facilities to attract young people from all walks of life
- The expertise of its graduates that enables them to enter professional life rapidly
- The innovation and research undertaken by its laboratories providing its industrial and public partners with priority access to groundbreaking technology
- The wealth of its scientific and cultural heritage that confirms its position as a key economic, cultural and educational player in the region

>>>

The Partnership Foundation of the University of Limoges

can be distinguished from other university foundations, firstly, by the strong presence of local authorities that support it and, secondly, by the large number of founder-members involved:

- Local authorities: Limousin Regional Council, Corrèze and La Creuse departments, the cities of Limoges, Brive, Guéret and Egletons;
- Businesses: EDF, GDF-SUEZ, EIFFAGE, SOTHYS INTERNATIONAL, CERADROP, PE@RL, ID-BIO, B CELL DESIGN;
- Banks: Banque Tarneaud, Crédit Agricole du Centre Ouest, Banque Populaire Centre Atlantique, Crédit coopératif;
- Establishments and associations: the University Hospital of Limoges, the Caisse des Dépôts, the CCIR, the Jacques Chirac Foundation, the ADER-LPC.

The Foundation's role is to support and contribute to the international reach of the University of Limoges whilst perpetuating its societal role through private and public donations.



COMMON RESEARCH SERVICES

These facilities are joint technical bodies that group together heavy equipment and implement specific expertise and skills that are made available to the teams.



SerMiEI Electron Microscopy Department

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Cryogenics Facility

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Common Animal Facility

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The SerMiEI provides support to research by offering high-performance investigative resources as well as human skills for undertaking analysis work in a myriad of scientific fields, ranging from ceramic materials, to geology, biology and medicine. This facility focuses on three main aims:

- A scientific exchange network around scientific microscopy issues. It acts in synergy with partners from various scientific units of the university.

- Training:

- o of students in second and third cycle studies, as part of their university curriculum,
- o of laboratory researchers through workshops that it organizes.

- Services provided to industrial groups of the region.

The facility's equipment consists of cutting-edge, high-performance machines dedicated to research and more conventional equipment intended for covering routine analysis requirements and industrial services. The facility has 7 electron microscopes.

The Cryogenics Facility provides the various university laboratories and departments with liquid nitrogen. Since it was created, the quantity of nitrogen sold has risen significantly; it has increased from 4,000 to 14,000 litres per year for around thirty users.

In 2013, the University of Limoges will acquire a totally automatic liquefier, which will produce 5 litres of nitrogen per hour, i.e. an annual production of 36,000 litres.

The facility ensures liquid nitrogen production and distribution to the various users all year round.

The university's accredited animal facility is a valuable tool for research teams as it accommodates laboratory animals (rats, mice, rabbits, guinea pigs and gerbils) in a totally controlled and contained environment. The highest levels of standards have been complied with for accommodating transgenic animals, immunodeficient animals and infected animals in perfectly secure and ethical conditions for the animals as well as for the experimenters and the environment. Thanks to an agreement between the university and the university hospital (CHU), staff from both establishments looks after the animals that are useful to research as well as to clinical diagnosis. The team of animal keepers includes a hospital keeper, and 3 university keepers. The transgenic platform (contact: zeliha.oruc@unilim.fr) is managed by an engineer who is in charge of microinjections, reimplantations, monitoring chimeras as well as decontamination of animal lines.

SCRABL: Limoges Joint Facility for Biomolecule Research and Analysis

Pierre Marquet

Director

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Head of Proteomic Analysis: Karine Vuillier-Devillers

Tel: +33 (0)5 55 45 76 78

Head of Nuclear

Magnetic Resonance (NMR): Yves Champavier

Tel: +33 (0)5 55 45 59 25 / 59 62

Head of Mass Spectrometry: Emilie Pinault

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SCRABL provides highly-comprehensive biomolecule analysis facilities. A wide range of instruments and techniques is available for analysing small-scale molecules and proteins, from the moment they are separated (HPLC, two-dimensional electrophoresis) up to their physico-chemical analysis (mass spectrometry, NMR):

- The proteomics and mass spectrometry platforms are currently developing their complementarities to propose an integrated protein analysis offer that combines separation, immunomarking and high and low-resolution mass spectrometry techniques.

- A pertinent and coordinated characterization offer, combined with NMR and mass spectrometry is currently being formalized so that teams may have the tools and techniques on-hand that are required for characterizing their small-scale molecules (of synthesis, of extraction from natural habitats and produced by metabolism).

This joint facility is currently located on two sites (the Faculty of Science and Techniques and the Faculty of Medicine and Pharmacology), where each site has its own specific equipment.

CIM Cytometry, Imaging and Mathematics

Jean Feuillard

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Chantal Jayat-Vignoles

Co-Director:

Faculté de Médecine

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The CIM platform combines a set of technologies for cell analysis and sorting: cytometry (rapid analysis and sorting) and flow imaging (contact: catherine.martin@unilim.fr), confocal laser scanning microscopy (contact: claire.carrion@unilim.fr). It develops mathematical tools and software related to cytometry (contact: abdel.marfak@unilim.fr). Services provided: development of protocols, study of cell antigens, nucleic acids and cell functions, mainly in the fields of cell biology, biotechnology, immunology, hematology, pharmacology, microbiology and materials (confocal microscopy).

PULIM Limoges University Press

Jacqueline Hoareau-Dodinau

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The purpose of the PULIM joint university facility is to edit and disseminate works of academic nature that are the fruit of research carried out by or in the University of Limoges, that satisfy the expectations of a given public or that are likely to stimulate a public. The PULIM is an across-the-board university facility that covers all economical, legal, literary, scientific, technological and medical disciplines as well as human sciences. The PULIM also responds to students' pedagogical requirements. Its catalogue is available online at <http://www.pulim.unilim.fr>

TECHNOLOGY TRANSFER CENTERS

The University of Limoges and AVRUL work hand-in-hand with local technology transfer centres which aim, in particular, to promote the technological development of businesses:

CTTC Ceramics Technology Transfer Center

CISTEME Center for Systems Engineering, in Telecommunications, in Electromagnetism and in Electronics

BIOCRITT Limousin Regional Center for Innovation and Technology Transfer

CITRA Center for Engineering in Treatments and Coatings of Advanced Surfaces



3 TECHNOLOGY PLATFORMS AT THE SERVICE OF BUSINESSES

The Limousin has three certified technology platforms in the fields of:

**Building-Rehabilitation,
Wood-Construction
and Public Works**

It pools together expertise and skills (equipment and human resources): high schools, university, research centres, businesses, etc. that provide technological services to businesses and promote technology transfer.

PRINCIPAL RESEARCH TOPICS

Tests on materials and structures
Thermal Studies
(modelling and experimentation)
Artificial and natural aging

KEYWORDS

Wood, Mechanical Testing,
Materials, Wooden Structures,
Durability, Digital Modelling,
Heat and Mass Transfer,
Aging

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Director:

Nicolas SAUVAT
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Engineer:

Jérôme DOPEUX
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Technology Platform WOOD-CONSTRUCTION

The Limousin Wood-Construction Technology Platform currently intervenes in trials, studies, industrial manufacturing, development of industrial processes and training:

- Testing on materials and structures;
- Thermal studies of wood constructions (modelling and experimentation);
- Studies on the artificial and natural aging of wood surfacing (sidings, etc.);
- Study, manufacturing and implementation of wood construction systems;
- Industrial manufacturing, industrial processes (CAD, CAM, CAPM, etc.);
- Marketing, strategy, sales and legal status of wood construction businesses.

Industrial applications:

Tests on glulam beams

Conducting thermal studies by modelling and experimentation, on wood construction systems: Fuste (logs), wood concrete, NATURI system, wood blocks

Studies on the artificial and natural aging of outdoor wooden surfacing (sidings)

Tests of bracing on wood frame panels

Technico-economic studies on wood-frame construction systems

Study of dimensional variations of doors subject to tropical climatic conditions

Acoustic study of stratified surfacing

Study of the resistance of glue joints after thermal oiling (longitudinal traction, shearing)

Studies on the valorization of wood chips in the form of light blocks: composition, resistance tests

Equipment / Technical resources:

Double climate-controlled enclosure for 2.5x2.5 m² walls

Image analysis measurements

Cooled IR camera

300 kN universal compression machine coupled with a climate-controlled enclosure (tests in variable environments)

Climate-controlled enclosures (0.8 and 13 m³)

Testing frames for structures (walls and beams):

Steering on 2 axes, 20, 100 and 500 kN jacks

Artificial ageing enclosures, and measuring instruments

(spectrocolorimeter, stereo microscope, gloss meter, thickness measurement gauge).

PRINCIPAL RESEARCH TOPICS

Building structures and layouts: shell, wood, metallic structures, building envelope, stone-cutting, characterization of building materials, layouts and finishings. Heating/Air conditioning, Thermal insulation, Lighting, Safety, Home automation.

Techniques developed:

- Building envelope system
- Composite construction materials, based on recycled materials or biomass, ecomaterials,
- remediation of buildings with regard to radon contamination
- Home automation
- Tertiary heating management
- Renewable energy: (solar hot water, geothermal)
- Photovoltaic systems with integrated storage
- Valorization and distribution of low-temperature heating using heat pumps
- Enhanced-performance lighting components and systems
- Networks and power supply control and command

KEYWORDS

Geothermal Energy, Heat Pump, Radon, Energy, Building, Home Automation, Eco-materials, Remote Management System

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Technology Platform

BUILDING-REHABILITATION

The Building Rehabilitation Technology Platform participates in the development of the local economic fabric in the field of building and more particularly in rehabilitation. It provides its expertise in training, information, organization and research to companies, through its partner organizations. By establishing a network of professionals, teachers and researchers, it will encourage technological and organizational exchanges.

Industrial applications:

Construction

Energy

Materials

Equipment / Technical resources:

Implementation workshops, test laboratories, pedagogical materials and premises, documentary collection in the relevant fields.

- RT2005 dedicated software (BBS Slama, Pleiades)

- technical management systems (EIB, GTB)

- Hager, Legrand home automation systems

PRINCIPAL RESEARCH TOPICS

- Roadway diagnosis and repair and detection and geopositioning of underground pipelines
- Protection of individuals and material maintenance

KEYWORDS

Public Works, Roadway
Diagnosis, Network Detection,
Worksite Surplus, PW Material
Maintenance, Worksite Safety,
DT (Work Project Declaration)
DICT (Declaration of Intent to
Begin Work), Tech Days, Network
Geopositioning

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www.region-limousin.fr/pft_btp

Technology Platform LIMOUSIN PUBLIC WORKS

This Technological Platform promotes technology transfer and develops innovation in the Public Works sector in the Limousin region:

- by providing regional businesses of the sector and local communities with the resources of training and research establishments: materials, human resources, documentation, various types of information, etc.,
- by developing partnerships with businesses, laboratories and specialized technical centres to help strengthen the public works vocational training hub.

Industrial Applications

FWD Interventions: Deflection measurement, Mechanical characteristics of roadbeds, Residual lifespan and reinforcement solutions

RADAR ROADWAY Interventions: Thickness of roadbed layers, Complement to core sampling for roadbed composition

MTS tests: Core sample testing, Formulation control

RADAR and/or RD400 Intervention: Detection of all types of piping, Marking in camber

Related Services: Patching plans, 3D facilities

Laboratory testing: Soil classification, Treatment formulation, Validation through laboratory testing

In-situ testing: Control: Panda, Plaque, dynaplaque, etc. Commissioning testing

Recycling project for worksite surplus: Aims: Propose alternatives to dumping, Soil classification, Treatment proposals

Self-compacting embankment project: Aims: Recycle rubble on site, without compacting, Organoleptic classification of soils, Grout formulation, Decision-making tree for treatment choice

Equipment / Materiel:

ROADBED DIAGNOSIS AND REPAIR

Falling weight deflectometer, Equipment for testing coated materials
Antenna for roadbed auscultation

IN-SITU AND LABORATORY TESTING AND CONTROL

And software:

- Diagnosis: FWDIN, ELMOD
- Dimensioning: ALIZE

DETECTION OF UNDERGROUND PIPELINES

Radar with 400 MHz antenna (0 - 2.5 m)
900 MHz antenna (0 - 1 m)
RD4000 – Active networks

WORKSITE SURPLUS RECYCLING

PANDA light penetrometer
Light compacting material
CBR Press – Proctor Compactor

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Institute for Processes Applied to Materials

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CISTEME	www.cisteme.net
CITRA	www.citra-limousin.com
CCI Haute-Vienne	www.limoges.cci.fr
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Ester Technopole	www.ester-technopole.org
3IL	www.3il.fr
Incubateur département de l'AVRUL	www.aile.fr
INRA	www.inra.fr
INRIA	www.inria.fr
INSERM	www.inserm.fr
INSTN	www-instn.cea.fr
Limousin Expansion	www.limousin-expansion.fr
Ministère de l'enseignement supérieur et de la Recherche	www.enseignementsup-recherche.gouv.fr
OSEO	www.oseo.fr
PEC	www.cerameurop.com
Pôle agro alimentaire Brive	www.cci.correze.net/cci-pole-agroalimentaire_55_82.html
Pôle Bois de Tulle	www.cci.correze.net/cci-pole-bois_55_84.html
Pôle Cancer bio santé	www.cancerbiosante.fr
Pôle d'Excellence Rurale Domotique et Santé de Guéret	www.odyssee2023.fr
Pôle agro alimentaire Brive	www.cci.correze.net/cci-pole-agroalimentaire_55_82.html
Pôle VIAMECA	www.viameca.fr/ccicf/viaacc.nsf
Pôle Viandes et Produits Carnés	www.innovviandes.org
Pôle Sciences et systèmes de l'énergie électrique	www.s2e2.fr
PRES Limousin, Poitou Charentes	www.pres-lpc.fr
Région Limousin	www.cr-limousin.fr

ABBREVIATIONS

ADEME	Agence de l'Environnement et de la Maîtrise de l'Energie (French Environment and Energy Management Agency)
ANR	Agence Nationale de la Recherche (French National Research Agency)
ANRT	Association Nationale de la Recherche Technique (French Technical Research Association)
ARIST	Agence Régionale d'Information Stratégique et Technologique (Regional Strategic and Technological Information Agency)
AVRUL	Agence pour la Valorisation de la Recherche Universitaire du Limousin (Agency for the Promotion of University Research in the Limousin)
CEA	Commissariat à l'Energie Atomique (French Atomic Energy and Alternative Energy Commission)
CCI	Chambre de Commerce et d'Industrie (Chamber of Commerce and Industry)
CHU	Centre Hospitalier Universitaire (University Hospital)
CISTEME	Centre d'Ingénierie des Systèmes en Télécommunications, en Electromagnétisme et en Electronique (Centre for Systems Engineering in Telecommunications, Electromagnetism and Electronics)
CITRA	Centre d'Ingénierie en Traitements et Revêtements de surface Avancés (Centre for Engineering in Treatments and Coatings of Advanced Surfaces)
CNES	Centre National d'Etudes Spatiales (National Centre for Space Studies)
CNFP	Centre National de la Fonction Publique Territoriale (National Centre for Regional Public Administration)
CNRS	Centre National de la Recherche Scientifique (National Centre for Scientific Research)
CRCI	Chambre Régionale de Commerce et d'Industrie (Regional Chamber of Commerce and Industry)
CRITT	Centre Régional d'Innovation et de Transfert en Technologies Médicales (Regional Centre for Innovation and Medical Technology Transfer)
CTTC	Centre de Transfert de Technologies Céramiques (Centre for Ceramics Technology Transfer)
DGA	Délégation Générale pour l'Armement (Directorate General for Armaments)
DIRECCTE	Direction Régionale des Entreprises, de la Concurrence, de la Consommation, du Travail et de l'Emploi (Regional Directorate for Business, Competition, Consumption, Labour and Employment)
DRRT	Délégation Régionale à la Recherche et à la Technologie (Regional Delegation on Research and Technology)
EA	Equipe d'Accueil (Host Research Team)
ELOPSYS	Pôle de compétitivité des hautes technologies (High-technology Competitiveness Cluster)
ENSIL	Ecole Nationale Supérieure d'Ingénieurs de Limoges (National School for Higher Engineering Studies of Limoges)
ENSCI	Ecole Nationale Supérieure de Céramique Industrielle (National School for Higher Industrial Ceramics Studies)
ENSMA	Ecole Nationale Supérieure de Mécanique et d'Aérotechnique (National School for Higher Mechanics and Aerotechnology Studies)
HDS	Habilitation à Diriger des Recherches (Accredited to Direct Research)
IAE	Institut d'Administration des Entreprises (Institute of Business Administration)
INRA	Institut National de la Recherche Agronomique (National Agronomic Research Institute)
INRIA	Institut National de la Recherche en Informatique et en Automatique (National Computer Science and Automation Research Institute)
INSERM	Institut National de la Santé et de la Recherche Médicale (National Institute of Health and Medical Research)
INSTN	Institut National des Sciences et Techniques Nucléaires (National Institute of Nuclear Science and Techniques)
IPAG	Institut de Préparation à l'Administration Générale (Institute for General Administration Preparation)
IUFM	Institut Universitaire de Formation des Maîtres (University Institute of Teacher Training)
IUT	Institut Universitaire de Technologie (University Institute of Technology)
PEC	Pôle Européen de la Céramique (European Ceramics Cluster)
PRES	Pôle de Recherche et d'Enseignement Supérieur (Further Education and Research Centre)
SATT	Société d'Accélération du Transfert de Technologie (Companies for Boosting Technology Transfer)
STIC	Sciences et Technologies de l'Information et de la Communication (Information and Communication Sciences and Technologies)
UMR	Unité Mixte de Recherche (Joint Research Unit)

The first part of the paper discusses the importance of understanding the cultural context of the research. It highlights the need for researchers to be aware of their own biases and the potential for cultural differences to influence the results of the study. The second part of the paper describes the methodology used in the study, including the selection of participants and the data collection process. The third part of the paper presents the results of the study, which show that there are significant differences in the way that people from different cultures perceive and experience the world. The final part of the paper discusses the implications of the findings for future research and for the development of cross-cultural communication strategies.