Pr Benoit BUSSER
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Researcher ID : N-1841-2013
OrcID : 2-9425-1577

PERSONAL DETAILS

Date and Place of Birth	15/06/1981, Strasbourg (France)
Nationality	French
Languages	French (mother tongue), English (fluent)

PROFESSIONAL POSITIONS

since 2023: Professeur des Universités - Praticien Hospitalier (PU-PH) ; 2nd Class
Institut Universitaire de France (IUF), Junior Member
Full Professor (Biochemistry and Cancer Sciences), School of Pharmacy, Grenoble-Alpes Univ.
Senior Medical Biochemist - Department of Laboratory Medicine , Grenoble-Alpes University Hospital
Scientist - Institute for Advanced Biosciences, UGA / Inserm U1209 / CNRS UMR 5309 research center

DIPLOMA

2017 **HDR (eq. Accredit. to Supervise Research),** Claude Bernard University, Lyon, France
2006- 2009 **PhD** in Cell Biology, University Joseph Fourier, Grenoble, France
"Identification and characterization of the role of Amphiregulin in non-small cell lung cancer resistance to gefitinib"
2008 **PharmD** (professional doctor degree in pharmacy), specialty in *Cancer Research*
Univ. Grenoble, France.
2005- 2006 **Master 2 Degree (Master of Science - MSc)**, specialty in *Cell. and Integrative Biology*
Univ. Grenoble, France.
"Deciphering cellular mechanisms leading to apoptosis-resistance in lung cancers"
2005 **Master 1 Degree (Trainee)**, specialty in *Biological and Medical Sciences*
Subspecialty: "normal and cancer cells"

EDUCATION - ACADEMIC BACKGROUND

Postgraduate:
2023- present **Full Professor**, (PU-PH) Univ. Grenoble-Alpes and Grenoble University Hospital, France
2016- 2017 **Research Mobility**, Team SpectroBio (dir. P. Dugourd), Institut Lumière Matière, Lyon
2012- 2023 **Associate Professor** (Tenure), Univ. Grenoble and Grenoble-Alpes Univ. Hospital, France
2009- 2012 **Assistant Professor**, Univ. Grenoble and Grenoble-Alpes Univ. Hospital, France
Internship & Residency:
2009 **Grenoble University Hospital, Rhône-Alpes, France**
Pharmacy Senior Resident, Clinical Biochemistry Laboratory, 6 months.

Activities: Protein Electrophoresis (serum, urine), Enzymes and Proteins Laboratory

2006- 2009 **Grenoble University Hospital, Rhône-Alpes, France**
Pharmacy Resident, Clinical Biochemistry Laboratory, 24 months.
Activities: DNA sequencing (solid tumors) and blood biomarkers, Cancer Clinical Lab.

2005 **Grenoble University Hospital, Rhône-Alpes, France**
Pharmacy Resident, Biological Investigation Center, 6 months.
Activities: Lung cancer secretome analysis, Clinical Proteomics Laboratory

2004- 2005 **Grenoble University Hospital, Rhône-Alpes, France**
Pharmacy Junior Resident, central cytotoxic preparation unit, 6 months.
Activities: Personalized chemotherapy preparations and validation

2004 **French National** competitive entrance exam for Medical Residency (Rank 310/1245)
2003- 2004 **Internship** in Medical Oncology unit (6 mo) and Geriatry (3 mo), Strasbourg, France

Undergraduate Pharmacy studies:
2004 **Master of Pharmacy** (**MSc** - 5th year), Univ. Strasbourg, France
Specialty in "Design and structure of molecules of therapeutic interest"
2003 Master of Pharmacy (4th year), Univ. Strasbourg, France
Specialty in "Antiparasitic Drugs"
2002 Bachelor of Science in Pharmacy (**BSc**), Univ. Strasbourg, France
1998 High School diploma, spec. maths, option European English, Strasbourg, France

UNIVERSITY APPOINTMENT -

Full Professor of Biochemistry and Cancer Sciences, 2nd Class
National University Council (CNU): Pharmacy - section 82, specialty : Biochemistry
Grenoble Alpes University (UGA) - School of Pharmacy
Faculty member in the Teaching Department: Basic and Clinical Biological Sciences

Teaching duty : > 200 h/year
Teaching responsibilities :

2017- 2021 Referent teacher for the “Professional Bachelor of Science in Biotechnologies” (BSc) university degree
(Responsable pédagogique de la Licence 3 Professionnelle Bio-industries - Biotechnologies)

Since 2012 Referent teacher for several university courses
(Responsable d’Unités d’Enseignement)
Cell Biology (L2 Biotech), Protein Engineering (practical session-Master1 Biotech), Serum Glucose Quantitation (practical session-Pharma L3), Basics in Cell Biology and Biochemistry (L3 pro)

Teaching Topics: cell and cancer biology, general and clinical biochemistry, biotechnologies,...
Audiences: Pharmacy students, Master students, Hospital medical residents, Paramedical students...

HOSPITAL APPOINTMENT -

Senior Clinical Biochemist, Department of Laboratory Medicine ; Grenoble Alpes University Hospital

Since 2022 **Head, Point-of-Care testing**
Quality Assurance Manager for POC Testing
Information Technology Coordinator for POC Testing

Since 2020 **Head, Point of care testing,** Biochemistry and blood gases unit

Since 2017 **Senior Clinical Biochemist**, medical molecular genetics laboratory, oncology laboratory

2013 - 2016 **Head,** Clinical Cancer and Biotherapies laboratory

2009 - 2012 **Junior Clinical Biochemist**, serum and urine protein electrophoresis laboratory

Keywords : Point-of-Care testing (POCT), General clinical biochemistry, circulating tumor markers, circulating tumor DNA (ctDNA), immunoassays, solid tumors, DNA sequencing and molecular biology (next generation sequencing / NGS, pyrosequencing, droplet digital PCR / ddPCR), management, quality, translational research,

GENERAL RESPONSIBILITIES -

Since 2025 **Deputy Director, "***Chemistry Biology Health*" research division, Univ. Grenoble Alpes

Since 2024 **Director of the Research Facility "Bio-LIBS"** in Grenoble (tissue elemental imaging)

Since 2024 Member of the steering committee of the scientific society "LIBS-France"

Since 2024 Board Member labex "Grenoble Initiative For Medical Devices", Univ. Grenoble Alpes

Since 2024 Representative of the President of the Univ. Grenoble Alpes, serving on the Competent Body for General Orientations (CBGO) of the Nursing Training Institute (IFSI) at the Aubenas Hospital Center (CH d'Aubenas), which accommodates 150 students

Since 2022 Member of "Bureau du pôle de Biologie et de Pathologie", Grenoble Univ. Hospital

Since 2021 **Board member, l'Alliance des Technologies de la Santé Grenobloises (ATSG)**

Since 2018 **Comité de Direction (Inst. for Advanced Biosciences)** (steering committee - elected)

2018 - 2020 Member of "Bureau du pôle de Biologie et de Pathologie", Grenoble Univ. Hospital

Since 2017 Member of the "digital PCR" taskforce from the French Clinical Biology Society (SFBC)

2016 - 2020 **Commission Médicale d'Etablissement du CHU Grenoble Alpes** (elected member)

2016 - 2019 Conseil d'administration + conseil scientifique de la structure de gestion du dépistage des cancers de l'Isère (elected member)

Since 2015 **Co-founder** and **president of the "Association Biologie et Cancer"**

2007 - 2009 Conseil de pôle de Biologie, Grenoble University Hospital (elected member)

2006 - 2008 **Conseil d'UFR de Pharmacie, Univ. Grenoble** (elected member)

2007 - 2009 Secrétaire, puis Vice président de l'Association des Internes en Pharmacie Spécialisée de la Région Rhônes-Alpes (ASPIRAL)

2005 - 2006 Secrétaire puis trésorier de l'Assoc. des Internes en Pharmacie et en Biologie de Grenoble (AIPBG)

AWARDS / FELLOWSHIPS -

2021 -2026 Junior member of the **Institut Universitaire de France (IUF)**

2019 -2026 **PEDR** [*prime d'encadrement doctoral et de recherche*] – **National award of scientific excellence**
Issuer: Grenoble Alpes University (UGA)

2019 **Poster Award** – European Molecular Imaging Meeting (EMIM)
Issuer: European Society of Molecular imaging (ESMI), EMIM-2019, Glasgow, UK
Title: *In situ* multi-elemental imaging of periprosthetic tissues with laser spectrometry

2015 **Young Investigator Award** – European Molecular Imaging Meeting (EMIM) [Rank: 1st/125]
Issuer: European Society of Molecular imaging (ESMI), EMIM-2015, Tübingen, GER
Title: Elemental imaging by Laser spectrometry: new perspectives for medical applications

The EMIM Young Investigator Award 2015 is assigned to a young scientist for her/his extraordinary and innovative research presented in the scope of the European Molecular Imaging Meeting (EMIM). Complementary information here

2015 **Award for the best scientific presentation** - Journées Poussières Minérales et Santé (Lyon)
Issuer: Laboratoire d'analyse minéralogique du Centre Hospitalier St Joseph St Luc
Title: Imagerie élémentaire par spectroscopie optique : une nouvelle approche pour localiser et quantifier éléments métalliques et nanoparticules dans les tissus biologique

2015 -2019 **PEDR** [*prime d'encadrement doctoral et de recherche*] – **National award of scientific excellence**
Issuer: Grenoble Alpes University (UGA)

2011 **Award for the best scientific presentation - "Cancer" Category**
Issuer: French Pneumology Society (SPLF) - Respiratory Research Meeting (7th J2R), Toulouse
Title: L'amphiréguline, un nouveau biomarqueur des tumeurs pulmonaires.

2009 **"Diagnostic Innovations" Prize**
Issuer: French Clinical Chemistry Society - (SFBC), International Biology Meeting (JIB), Paris
Title: L'amphiréguline : un nouveau biomarqueur de la résistance aux inhibiteurs de tyrosine kinase dans le cancer du poumon.

2007 **"Jacques Rocipon" Prize** - Best Scientific project
Issuer: AAIPHG - Association des Anciens Internes en Pharmacie de hôpitaux de Grenoble
Title: "Imagerie non invasive du petit animal par bioluminescence".

2007 **"Basic research" Award** - French Cancer Society / Eurocancer
Issuer: French Cancer Society (SFC - société Française du Cancer)
Title: Amphiregulin induces resistance to gefitinib via BAX sequestration by Ku70.
Plenary Session. XXVIIe Forum of Cancer Research, Eurocancer, Paris.

2006 **"Alexandre Joël" Prize** - Best presentation, "Master Student" Category
Issuer: French Association for Cancer Research (ARC), Journées Jeunes Chercheurs, Paris.
Title: L'Amphiréguline: un facteur de résistance au gefitinib dans la lignée H358 de Cancer Bronchique Non à Petites Cellules.

2005 **"Young Investigator" Fellowship**
Issuer: French Association for Cancer Research (ARC), category Master of Science (Master 2)

2004 **"Hospital pharmacy" Fellowship,** Hospital Privado de Córdoba, Argentina (3 months)

RESEARCH -

Scientist in the team "Cancer targets and Experimental therapeutics" directed by JL Coll.
Institute for Advanced Biosciences, UGA, INSERM U1209, CNRS UMR5309, Grenoble, FR (IAB website)

Keywords and Topics of interest

Tissue Elemental Imaging, Cancer cell signaling, Resistance to treatments, Nanoparticles, Metals

General Statistics

Total: **49 peer-reviewed publications**, 1st author (n=10), (co)last (n=14), corresponding author (n=17). In 75% of my publications (n=49), I held significant authorship positions as either the 1st, 2nd, 3rd, penultimate, or last author

- 33 Original Articles
- 12 General Reviews
- 4 Editorials/letters/clinical cases
- 6 Books or Book Chapters
- H-index : *26* (*Google scholar*)
- *25* papers **with >30 citations**
- Total number of citations : >2650 (*Google scholar*)
- SIGAPS Score : 673
- **19** Keynote / Lecture invitations in Conferences or Meetings
- **26** Oral presentations in Conferences or Meetings (after abstract selection)
- **27** Invited lectures from Universities/Labs/Companies
- **>100** Written communications in Conferences (posters)

Clinical Trials

2024 **READS** (studying the role of metals in sarcoidosis)
Co-investigator

2019 **MEDICO-LIBS** (*ClinicalTrials.gov Identifier: **NCT03901196***)
Coordinator, and PI of this French multicenter study (retrospective & prospective)
Multi-elemental Imaging of Lung Tissues With LIBS (Laser-induced Breakdown Spectroscopy)

Editorial activities

2018-2023 **Editorial board member** Biomedical Spectroscopy & Imaging, iOS Press

External Expert for funding agencies (Grant Reviewer)

- External expert for the call "2025 PhD application" from the **British "Breast cancer Now"** cancer charity organisation
- External expert for the call "2024 Agence Nationale de la Recherche (**ANR**) - Région La Réunion dans le cadre du programme FEDER-FSE+ 2021-2027"

- External expert for the french ANR program (5 evaluations in 2024)
- External expert for the call “2024 Regular Fondecyt National Projects Competition” from the National Research and Development Agency (ANID) of the Ministry of Science, Technology, Knowledge and Innovation of **Chile**
- Member of the scientific advisory board for the cancer charity “Espoir contre le cancer Isère” (since 2022)
- Fondation du Souffle (2017,2018),
- Clinical Investigation Centre (CHU St Etienne, 2018)

External Expert for Private Companies

Member of the Scientific Advisory Board of Ablatom SAS

External jury member for PhD or Research Supervision Diploma (HDR)

Dec 2024	**Elisa Chazeau**	PhD Thesis	“Développement de sondes fluorescentes azaBODIPYs multifonctionnelles pour l’imagerie in vivo”. **Univ. Bourgogne Franche-Comté. France.** *External examiner & president of the jury*
June 2022	**Latifa Sarra Kazi Tani**	PhD Thesis	“Biogeochemical approach and selenium status during thyroid cancer in the western Algerian population” **Faculty of Nature and Life Sciences, Earth and Universe Sciences, Univ. Tlemcen**. **ALGERIA.** *External examiner*

Researcher Selection committees

2024 Internal jury member, Selection of an Assoc. Prof of Biotechnology (Univ. Grenoble Alpes)
2023 External jury member, Selection of an Assoc. Prof of Biotechnology (Univ. Paris Saclay)

Scientific Meetings’ Animation

2024 Poster Chair & Abstract reviewer, cat. “Multimodal & Multiplexed Approaches”, EMIM 2024
2023 Abstract reviewer, category “Understanding Tumour Biology”, EMIM 2020
2020 Poster Chair & Abstract reviewer, category “Understanding Tumour Biology”, EMIM 2020
2019 SubChair for the category on “Understanding Tumour Biology”, EMIM 2019
2018 “Understanding Tumor Biology” session chair, European Molecular Imaging Meeting
Since 2016 Main organizer of the annual “Grenoble Cancer Meeting” (**5** editions, informations here)
2015 Abstract reviewer, category “Cancer”, European Molecular Imaging Meeting
2012 Member of the Jury for the Young Researchers Awards, Jeunes Chercheurs ARC

Reviewing (see my Web of Science profile for up-to-date reviewing activities)

Reviewer for Chemical Society Reviews, Advanced Science, Advanced Materials, Coordination Chemistry Reviews, Small Methods, JAMA dermatology, Clinical Cancer Research, Oncogene, Scientific Reports, EMBO Molecular Medicine, Theranostics, Cancer Biomarkers, Acta Dermato-Venereologica, Experimental and Molecular Pathology, Journal of Cancer, Biological procedures online, BioMed Research International, Cancer Biology & Medicine, BMC Cancer, Analytical and Bioanalytical Chemistry, J. Biophotonics, Plasma Science and Technology, Spectrochimica Acta Part B: Atomic

Spectroscopy (SAB), Journal of Analytical Atomic Spectrometry (JAAS), Micron, Frontiers in Oncology, IEEE Transactions on Instrumentation & Measurement,

GRANTS, RESEARCH CONTRACTS, and FUNDING -

2026	Principal Applicant : B. Busser (coordinator) LIBS Elemental Imaging of Metallic Carcinogens in Lung Biopsies: Development of Tissue-Matched Calibrators (K-LIBratorS) Funding source: **Canceropole CLARA** Program Name: Oncostarter - Projets multidisciplinaires	**€ 40'000**
2025-2029	Principal Applicant : B. Busser (coordinator) Co-applicants: J. Charles and L. Sancey Chaire de recherche multidisciplinaire "Métaux et Santé" Funding source: **Fondation UGA** Program Name: Chaire de Recherche - Projets multidisciplinaires	**€ 1'200'000**
2024	Principal Applicant : S. Bohic Co-applicant: B. Busser Pixel Funding source: **France Life Imaging (FLI)** Program Name: Appel À Échanges D'expertise 2024 du Réseau Thématique «Instrumentation et Innovations technologiques»	**€ 22'000**
2024-2026	Principal Applicants : B. Busser & A. Boumendjel Développement de conjugués anticorps-molécules à activité ferroptotique (PhD Project) Funding source: CBH Graduate School (Univ. Grenoble Alpes)	**€ 150'000**
2023	Principal Applicant : B. Busser Elemental imaging of tissues with LIBS Funding source: Association "Espoir isère contre le cancer"	**€ 5'000**
2023-2024	Principal Applicant : B. Busser Investissement en Équipement Innovant : 1er instrument LIBS Biomédical au monde Funding source: Univ. Grenoble Alpes (UGA), ANR, DRARi, FEDER	**€ 882'000**
2023-2024	Principal Applicant : A. Deniaud Co-applicant: B. Busser CopCancer : Etude des liens entre Cuivre et Cancer Funding source: **Labex GRAL (UGA)** Program Name: Pre-maturation	**€ 59'000**
2022-2024	Principal Applicant : B. Busser Etude des altérations du métabolisme du Cuivre dans les tumeurs broncho-pulmonaires et ses implications dans la résistance aux thérapies Funding source: Grouped French Companies Against Cancer (**Groupement des Entreprises Françaises dans la Lutte contre le**	**€ 10'000**

	Cancer - Gefluc)	
2022-2024	Principal Applicant : L. Sancey Co-applicants: B. Busser, C. Goze Développement de sondes optiques NIR-II pour l'aide à la chirurgie dans les cancers des voies aérodigestives supérieures Funding source: **La Ligue Nationale contre la cancer** Program Name: AO 2021 Pluri Équipes	**€ 20'000**
2022-2027	Principal Applicant : B. Busser Funding source: **Institut Universitaire de France (IUF)** Program Name: Junior Member	**€ 75'000**
2020-2024	Principal Applicant : V. Motto-Ros Co-applicants: B. Busser, J. Hermann, L. Duponchel, V. Bonneterre Medical Diagnosis by Artificial Intelligence applied to LIBS Elemental Microscopy (dIAg-EM) Funding source: **Agence Nationale de la Recherche (ANR)** Program Name: AAPG - PRC - 2020 *(n°ANR-20-CE17-0021)*	**€ 443'000**
2019-2020	Principal Applicant : B. Busser EURO-LIBS Funding source: **Agence Nationale de la Recherche (ANR)** Program Name: MRSEI - 2019 *(n°ANR-19-MRS2-0010)*	**€ 30'000**
2018-2019	Principal Applicant : L. Sancey Co-applicants: B. Busser, R. Auzély-Velty, C. Goze, F. Denat Théra-BODIPY Funding source: **FRANCE LIFE IMAGING -** Amorces de collaborations Program Name: WP1 - FLI "agents d'imagerie moléculaire"	**€ 30'000**
2018-2019	Principal Applicant : L. Sancey Co-applicants: R. Auzély-Velty, C. Goze, U. Köster, B. Busser BoRE-10 VEctorisé dans les cellules Tumorales pour la thérapie par capture de neutrons Funding source: **CNRS** - Missions pour l'interdisciplinarité Program Name: Défi ISOTOP - 2018	**€ 57'000**
2017-2020	Principal Applicant : B. Busser Co-applicants: V. Motto-Ros, L. Sancey, F. Pelascini, V. Bonneterre Multi-elemental analysis of lung diseases by laser spectroscopy (MEDI-LIBS) Funding source: **Agence Nationale de la Recherche (ANR)** Program Name: AAPG - PRC - 2017 *(n°ANR-17-CE18-0028-01)*	**€ 450'000**
2017	Principal Applicant : A. Hurbin Co-applicants: B. Busser, V. Frachet Utilisation de nouvelles molécules pour contrer la résistance à l'apoptose dans les cancers du poumon Funding source: **La LIGUE – comité de l'Isère**	**€ 20'000**

	Program Name: Projet Mono Equipe (PME)	
2015-2018	Principal Applicant : M. Morris Co-applicants: S. Lantuejoul, M. Amblard, A. Hurbin, B. Busser Foldamer-based targeting of CDK4/Cyclin D kinase and therapeutic application to lung cancer Funding source: **INCa – DGOS** Program Name: Programme de recherche translationnelle en Cancérologie (PRT-K 2014)	**€ 550'000**
2015-2018	Principal Applicant : L. Sancey Co-applicants: B. Busser, V. Motto-Ros, J. Charles Laser Ablation Spectroscopy for Tumor characterization (LAST) Funding source: **Plan Cancer et INSERM** Program Name: Physique, Mathématiques, Sciences de l'ingénieur et Cancer	**€ 290'000**
2014-2016	Principal Applicant : A. Hurbin Co-applicants: B. Busser Utilisation de dérivés pyrrolo-pyrimidine pour contrecarrer la résistance à l'apoptose et aux thérapies ciblées dans les cancers du poumon Funding source: **Fondation de France** Program Name: Rech. fondamentale et translationnelle sur le cancer	**€ 50'000**
2014-2015	Principal Applicant : B. Busser Étude de la résistance du cancer du poumon aux thérapies ciblées et implication des mucines Funding source: **Grenoble-Alpes Univ.** Program Name: AGIR 2014	**€ 15'000**
2011	Principal Applicant : B. Busser Etude de la résistance des Cancers Bronchiques Non à Petites Cellules au gefitinib : Confirmation du rôle primordial des Mucines Funding source: **Grenoble-Alpes Univ.** (UFR de Médecine/Pharmacie) Program Name: Vivier de la recherche médicale	**€ 3'000**
2006	Principal Applicant: B. Busser Etude de la résistance des Cancers Bronchiques Non à Petites Cellules au gefitinib (Iressa®) : Confirmation du rôle fondamental de l'amphiréguline Funding source: **Grenoble-Alpes Univ.** (UFR de Médecine/Pharmacie) Program Name: Vivier de la recherche médicale	**€ 3'000**

MAIN COLLABORATIONS (in alphabetical order) -

Dr Beauvineau Claire and **Dr Mahuteau-Betzer** Florence. "Chemistry, Modeling and imaging" unit, Institut Curie, Paris, FR. *Screening chemical libraries, apoptosis resistance.*
Pr Cadranel Jacques and **Pr Wislez** Marie, Service de pneumologie, AP-HP Hôpital Tenon, Paris, FR. *Gefitinib resistance in lung cancers*

Pr Campbell Pat, UCLA Department of Orthopaedic Surgery, Los Angeles, CA, USA. *LIBS imaging for periprosthetic tissues.*
Pr Charlet Laurent, Institut des Sciences de la Terre (ISTerre), Univ. Grenoble Alpes
Pr Davey Gail, Brighton and Sussex Medical School, UK. *LIBS for podoconiosis*
Dr Diaz Jose Fernando and **Dr Prado** Fernando Josa. Centro de Investigaciones Biológicas, Consejo Superior de Investigaciones Científicas, Madrid, SPAIN. *Tubulin inhibitors*
Dr Imberty Anne, Centre de recherche sur les Macromolécules (CERMAV), UPR5301, CNRS, Grenoble, FR. *Recombinant lectins and their applications for cancer*
Pr Jabin Ivan, Univ. Libre de Bruxelles (BELGIUM). *Chemistry*
Dr Khochbin Saadi, Institute for Advanced Biosciences, Grenoble, FR. *Ku70 acetylation*
Pr Melikechi, Noureddine. Dean of Kennedy College of Sciences, Lowell University of Massachusetts (UMass) USA. *LIBS imaging.*
Dr Motto-Ros Vincent & **Dr Dugourd** Philippe, Institut Lumière Matière, UMR CNRS/UCBL 5306, Université Lyon 1, FR. *Tissue multi-elemental imaging with Laser Spectroscopy (LIBS)*
Pr Moynier Frédéric Institut de Physique du Globe de Paris. *Copper signalling*
Dr Ozturk Mehmet, Dokuz Eylul University, Advanced Biomedical Research Center, Izmir, TURKEY, *Hepatocarcinoma and small molecules (inhibitors)*
Pr de la Hoz Rafael E. Environmental Medicine & Public Health department, Mount Sinai Hospital, New York, USA. *World Trade Center-related lung idiopathic diseases. LIBS imaging.*
Dr Valkenier Hennie, Univ. Libre de Bruxelles (BELGIUM). *Chemistry*

TALKS - CONFERENCES (*speaker in italics*)

20 Keynote / Lecture invitations in Conferences or Meetings, **27** Oral presentations in Conferences or Meetings (after abstract selection), and **28** Invited lectures from Universities/Labs/Companies

Keynote / Lecture invitations in conferences/meetings/summer schools

Du métal dans les poumons ? Le surprenant voyage biomédical de l'imagerie LIBS en Pneumologie !

21 LIBS Elemental Imaging: A Cutting-Edge Technique for Tracking Metal Nanoparticle Exposure and Biodistribution in Tissues.
B. Busser, SFNano annual meeting 2025, 25th November 2025. **Lyon**. **Plenary lecture. Planned**

20 Elemental tissue profiling in lung diseases using clinical LIBS microscopy.
B. Busser, International Symposium in Metallomics(ISM-10) October 26-31 2025, **Paris**. **Parallel session. Planned**

19 Biomedical applications of LIBS elemental imaging
B. Busser, Series of Talks 2024 - Campfires of the BNCT International Community , 25 July 2024. ***Virtual Event.***

18 Quand les poumons révèlent leurs secrets : L'aventure de l'imagerie LIBS en territoire biomédical
B. Busser, SPECTR'ATOM 2024, 4-7 June 2024. **Pau**. **Plenary lecture**

17 Imaging the mineral metallic exposure of the lungs from patients with ILDs : first results from the ongoing French multicenter MEDICO-LIBS trial. [*Imagerie élémentaire de l'exposition minéralo-métallique au cours des PID (Etude MEDICO-LIBS)*]
B. Busser, Meeting of the regional Interstitial Lung Diseases group (**PID Alpes**). 12 January 2024. **Grenoble**.

16 Clinical applications of multi-elemental imaging with laser-induced breakdown spectrometry (LIBS). *B. Busser*, ***Colloquium Spectroscopicum Internationale**, 30 May-3 June 2022, Convention Centre, **Gijón (SPAIN)**.* **Parallel session**

15 LIBS elemental imaging : the next player for exploring chemical exposure in human tissues
B. Busser, Regional Environment and Health Workshop. 15-17 June 2021. **Clermont-Ferrand**. ***Virtual Event.***

14 LIBS elemental imaging is entering the clinic as a new diagnostic tool.
B. Busser, International Workshop on LIBS. 1-2 December 2020. **Szeged (HUNGARY)**. ***Virtual Event.***

13 Reasons to believe in laser spectroscopy (LIBS) for pulmonary diseases.
B. Busser, Meeting of the regional Interstitial Lung Diseases group (**PID Alpes**). 10 January 2020. **Grenoble**.

12 In situ Imaging of metal Nanoparticles in tissues with Laser Spectroscopy (LIBS).
B. Busser, Annual Seminar of the Interdisciplinary Group for nanotoxicology studies (**GIENS**). 13-15 November 2019. **St Quentin en Yvelines**. **Plenary lecture**

11 From bench to bedside: LIBS imaging is entering the clinic as a new diagnostic tool for respiratory diseases
B. Busser & V. Motto-Ros, SciX annual international conference of the Federation of Analytical Chemistry & Spectroscopy Societies (FACSS) (**SciX 2019**). 13-18 October 2019. Palm Springs, **California CA** (**USA**). **Parallel session**

10 Imaging exogenous elements in biological tissues with Laser Spectroscopy (LIBS): from mice to humans.
B. Busser, 7th Georgian Bay International Conference on Bioinorganic Chemistry (**CanBIC-7**). 21-25 May 2019. Parry Sound, **Ontario** (**CANADA**). **Parallel session.**

9 Looking for aetiologies and mineral exposome in patients with idiopathic lung diseases: insights from combining electron microscopy with LIBS. **Plenary session**
[Recherche de l'étiologie et de l'exposome minéral chez des patients atteints de pathologies pulmonaires idiopathiques : avancées récentes de la combinaison Microscopie Électronique et LIBS.]
B. Busser & M. Catinon, 3rd "Health and Dust" national meeting, 17 November 2018. Lyon

8 Imaging metals in tissues : latest developments of laser spectrometry [Imagerie élémentaire des métaux dans les tissus par spectrométrie laser : nouvelles applications en médecine]
B. Busser, National Meeting of the French Society for the Research on Toxic and Essential Elements (SFERETE), 11-12 October 2018. **Lyon**. **Plenary session**

7 Elemental analysis of human specimens with Laser-Induced Breakdown Spectrometry : first steps towards applications in medical diagnosis.
B. Busser, 1st International Medical Geology Association (IMGA) workshop. 29-30 March 2018. **Annecy**. **Plenary session**

6 LIBS elemental imaging: toward a revolution in medical diagnosis ?
B. Busser, **Winter Conference on Plasma Spectrochemistry**. January 2018. Amelia Island, **Florida** (**USA**) **Plenary session**

5 A novel technology for studying the elemental composition of tissues: LIBS (Laser Induced Breakdown Spectrometry).
B. Busser, Meeting "**Particles and Health**". 26-28 June 2017. **Lyon**. **Plenary session**

4 Tissue Elemental Imaging with LIBS (Laser-Induced Breakdown Spectroscopy): recent advances and medical applications.

B. Busser, International Colloquium: Granulomatosis, sarcoidosis, Mineralogical analysis and inorganic particles hypersensibility. 5-7 december 2016. Lyon. **Plenary session**

3 Elemental imaging by Laser spectrometry: new perspectives for medical applications.
B. Busser, L. Sancey, N. Pinel, J. Charles, V. Motto-Ros. *European Molecular Imaging Meeting (**EMIM**). 10th annual meeting of the European Society for Molecular Imaging (ESMI). 18-20 March 2015. **Tuebingen (GERMANY).*** **Plenary Lecture for finalists of the Young Investigator Award**

2 L'Amphiregulin induces gefitinib resistance in Non-Small Cell Lung Cancers through Ku70-mediated BAX inhibition.
*B. Busser, Journées de la recherche respiratoire (J2R). Octobre 2008, **Grenoble**.*
Plenary session

1 Amphiregulin induces resistance to gefitinib via BAX sequestration by Ku70
*B. Busser, 27th Forum of Cancer Research, **Eurocancer**. June 2007, **Paris**.*
Plenary session. Award "Basic Research" from the French Cancer Society (SFC)

Oral presentation in Scientific Conferences or Meetings (*after abstract selection*)

27 Elemental imaging and quantification for biological tissues: expanding medical capabilities with LIBS
E. Dupont, L. Sancey, V. Motto-Ros, V. Bonneterre, B. Busser
*20th annual European Winter Conference on Plasma Spectrochemistry (EWCPS), 2-7 March 2025. Berlin (**GERMANY**).*

26 Laser-Induced Breakdown Spectroscopy (LIBS) for quantitative elemental mapping of inhaled titanium in animal and human lung tissues: Methodological Advances and Clinical Implications
V. Gardette, L. Sancey, V. Bonneterre, C. Dujardin, V. Motto-Ros, ***B. Busser***
*European Molecular Imaging Meeting (**EMIM**). 19th annual meeting of the European Society for Molecular Imaging (ESMI). 12 – 15 March 2024, Porto, (**PORTUGAL**).*

25 LIBS imaging for medical applications: overview and case studies
V. Gardette, B. Busser, L. Sancey , V. Bonneterre, C. Dujardin, L. Duponchel, V. Motto-Ros
*12th Euro-Mediterranean Symposium on Laser-induced Breakdown Spectroscopy (**EMSLIBS**). 4 – 7 September 2023, Porto, (**PORTUGAL**).*

24 In situ multi-elemental imaging with LIBS for periprosthetic tissue characterization
B. Busser, V. Gardette, L. Sancey, P. Campbell, V. Motto-Ros.
*Annual international conference of the Federation of Analytical Chemistry & Spectroscopy Societies (FACSS) (**SciX 2022**). 2-7 October 2022. Cincinnati, **Ohio** (**USA**).* **Parallel session**

23 NIR aza-BODIPY: a new vector for boron neutron capture therapy (BNCT)
A. Godard, G. Kalot, B. Busser, J. Pliquett, KD. Wegner, U. Köster, U. Resch-Genger, J-L Coll, F. Denat, E. Bodio, C. Goze, L. Sancey. *European Molecular Imaging Meeting (**EMIM**). 16th annual meeting of the European Society for Molecular Imaging (ESMI). 24-27 August 2021, **Göttingen** (**GERMANY**).*

22 Elemental imaging with Laser spectroscopy is entering the clinic as a new diagnostic tool
B. Busser, M. Leprince, J. Charles, JL. Coll, V. Bonneterre, V. Motto-Ros, L. Sancey.
*European Molecular Imaging Meeting (**EMIM**). 15th annual meeting of the European Society for Molecular Imaging (ESMI). 25-28 August 2020. **Virtual Event.***

21 In situ visualization of Boron element in biological tissues: latest advances with LIBS imaging
B. Busser, G. Kalot, JL. Coll, V. Motto-Ros, L. Sancey. *Technical Meeting on Advances in Boron Neutron Capture Therapy - International Atomic Energy Agency (IAEA). 27-30 July2020.* ***Virtual Event.***

20 Studying the preclinical ex-vivo distribution of metal nanoparticles: label-free direct elemental quantitative imaging with LA-ICP-MS
Y. Yao, L. Sancey, F. Arnaud-Godet, JL. Coll, P. Télouk, *B. Busser*. Annual national meeting of the French Society for Nanomedicine (***SFNano***), *10-12 December 2019,* ***Dijon****.*

19 Mutational Imprints of Cobalt Exposure: A Genome-Scale Multi-system Approach
PN. Melki, C. Renard, E. Mariussen, E. Rundén Pran, EM. Longhin, M. Dusinska, L. Sancey, B. Busser, RA. Herbert, M. Korenjak and *J. Zavadil*. Environmental Mutagenesis and Genomics Society 50th Annual Meeting (***EMGS***), *19-23 September, 2019 -* ***Washington DC****,* ***(USA)****.*

18 In situ, quantitative, elemental imaging of lung tissues
M. Leprince, B. Busser, F. Pelascini, V. Bonneterre, L. Sancey and V. Motto-Ros. 10th Euro-Mediterranean Symposium on Laser-Induced Breakdown Spectroscopy (***EMSLIBS***), *8-13 September 2019,* ***Brno (CZECH REPUBLIC)****.*

17 Biological evaluation of innovative nano-compounds for boron neutron capture therapy (BNCT)
L. Sancey, V. Cosensa, B. Busser, R. Poirot, G. Kalot, S. Coninx, U. Köster, J.L. Coll, R. Auzély-Velty. National meeting of the French Society for Nanomedicine (***SFNano***), *3-5 December 2018,* ***Montpellier****.*

16 Targeting the CDK4/CyclinD interface with a stapled peptide in non-small cell lung cancer.
A. Hurbin, C. Bouclier, G. Laconde, M. Simon, M. Pellerano, C. Prevel, B. Legrand, J. Vollaire, N. LeStang, B. Busser, S. Lantuejoul, V. Josserand, J.L. Coll, M. Amblard, M. Morris. National meeting of the French Society for Nanomedicine (***SFNano***), *3-5 December 2018,* ***Montpellier****.*

15 In situ metal imaging with laser spectrometry: A new and promising technology with biological and medical applications. *B. Busser*, M. Leprince, F. Pelascini, J. Charles, JL. Coll, V. Bonneterre, V. Motto-Ros, L. Sancey. 14th biannual European Biological Inorganic Chemistry Conference (***EuroBIC*** *14), 26-30 August 2018,* ***Birmingham (UK)****.* **Parallel session**

14 Biomedical applications of multi-elemental imaging with laser-induced breakdown spectrometry (LIBS). *B. Busser*, M. Leprince, S. Moncayo, F. Pelascini, JL. Coll, V. Motto-Ros, L. Sancey. ***OptDiag****, 23-24 May 2018, Institut Langevin,* ***Paris****.* **Plenary session**

13 In situ multi-elemental imaging of human specimens with laser spectrometry: a future gold standard for medical diagnosis ?
B. Busser, M. Leprince, S. Moncayo, F. Pelascini, J. Charles, JL. Coll, V. Bonneterre, V. Motto-Ros, L. Sancey. *European Molecular Imaging Meeting (****EMIM****). 12th annual meeting of the European Society for Molecular Imaging (ESMI). 20-23 March 2018.* ***San Sebastián (SPAIN)****.* **Parallel session**

12 LIBS imaging for supporting medical diagnoses
S. Moncayo, B. Busser, M. Catinon, F. Trichard, M. Sabatier-Vincent, F. Pelascini, D. Devismes, N. Pinel, M. Vincent, V. Bonneterre, J. Charles, L. Sancey and V. Motto-Ros. *9th Euro-Mediterranean Symposium on LIBS (****EMSLIBS****). 11-16 June 2017.* ***Pisa (Italy)***

11 Elemental imaging by laser spectrometry: technological advances for biological and medical

applications.
B. Busser, S. Moncayo, F. Trichard, F. Pelascini, V. Bonneterre, N. Pinel, JL. Coll, J. Charles, V. Motto-Ros, L. Sancey.*14th International Symposium on Applied Bioinorganic Chemistry (**ISABC** 14), 7-10 June 2017, Toulouse.* **Parallel session**

10 3D Elemental Imaging of Nanoparticles in biological tissue by Laser-Induced Breakdown Spectroscopy
B. Busser, Gimenez Y, Trichard F, Kulesza A, Benoit JM, Panczer G, Dugourd P, Tillement O, Pelascini F, Sancey L, Motto-Ros V. *European Molecular Imaging Meeting (**EMIM**). 11th annual meeting of the European Society for Molecular Imaging (ESMI). 8-10 March 2016. **Utrecht (NETHERLANDS)**.* **Parallel session**

9 Elemental imaging by Laser spectroscopy: new perspectives for biological and medical applications
L. Sancey, B. Busser, F. Trichard, F. Pelascini, N. Pinel, S. Roux, J-L. Coll, O. Tillement, J. Charles, V. Motto-Ros. European Nanomedicine Meeting. *7-9 December 2016*. **Grenoble**

8 Identification d'un dérivé pyrrolo-pyrimidine pour contourner la résistance à l'apoptose des cancers pulmonaires non-à-petites cellules
P. Gilson, F. Mahuteau, C. Beauvineau, JL Coll, A. Hurbin, B. Busser. Journées de la Recherche Médicale (**JRM**). 3 June 2016. **Grenoble.**

7 Elemental imaging by Laser spectrometry: new perspectives for medical applications.
B. Busser, L. Sancey, N. Pinel, J. Charles, V. Motto-Ros. *European Molecular Imaging Meeting (**EMIM**). 10th annual meeting of the European Society for Molecular Imaging (ESMI). 18-20 March 2015. **Tuebingen (GERMANY).*** **Parallel Session**

6 Laser-Induced Breakdown Spectrometry for Elemental Imaging of Biological Tissues.
L. Sancey, B. Busser, F. Pelascini, Y. Gimenez, G. Panczer, P. Dugourd, *V. Motto-Ros*. ***European Winter Conference on Plasma Spectrochemistry**. 22-26 February 2015. **Münster (GERMANY)***

5 Efficacité prolongée du vemurafenib comme traitement d'une histiocytose langerhansienne pure cutanée mutée BRAF.
J. Charles, JC. Beani, I. Templier, G. Fiandrino, L. Bondier, MT. Leccia, B. Busser, ***Journées Dermatologiques de Paris**, December 2014, **Paris**.*

4 Laser spectrometry for 2D elemental mapping of biological tissues.
L. Sancey, B. Busser, F. Pelascini, G. Panczer, O. Tillement, J. Yu, *V. Motto-Ros.* **SciX** - The Great SCIentific eXchange. ***National Meeting of Society for Applied Spectroscopy** (SAS) & North American Society for Laser-Induced Breakdown Spectroscopy. 28 Sept-3 Oct 2014, Reno (**NEVADA, USA**)*

3 Laser-Induced Breakdown Spectrometry for Elemental Imaging of Biological Tissues.
V. Motto-Ros, L. Sancey, B. Busser, G. Panczer, O. Tillement, J. Yu. *8th Annual International Conference on Laser Induced Breakdown Spectroscopy, September 2014. Beijing (**CHINA**)*

2 Cancer microenvironment and growth factors. The example of amphiregulin.
*Busser B., **11th Topic days from the Albert Bonniot Institute**. October 2011, Grenoble.*
Flash Talk

1 Amphiregulin induces resistance to gefitinib via BAX sequestration by Ku70
*Busser B., **27th Forum of Cancer Research, Eurocancer, Paris**. June 2007, Paris.*

Research in Oncology - Parallel Session
"Basic research" Award - from the French Cancer Society / Eurocancer

Invited Lectures for Universities / Laboratories / Companies

30 chez Salim

29 Etude des altérations du métabolisme du Cuivre dans les tumeurs broncho-pulmonaires et ses implications dans la résistance aux thérapies.
Lecture for the GEFLUC-Grenoble (French Business Associations for the Fight Against Cancer). 17 June2025. **Domaine de Chepy, Grenoble**.

28 Multi elemental imaging with LIBS microscopy.
Lecture for the Biotechnology club. 21 February 2025. **Institute for Advanced Biosciences_Grenoble**.
Invited by Emeline Lambert.

27 Visualiser le contenu élémentaire pulmonaire : Diagnostic par imagerie LIBS.
Lecture for the Kick-off meeting of the ERC starting-grant project KOLOR SPCCT Imaging 21 June 2024. **Lyon**.
Invited by Dr Salim Si-Mohamed (UCBL, HCL)

26 Imaging of Tissues with LIBS. *B. Busser, Lecture for the team "Molecular Systems and nanoMaterials for Energy and Health (SyMMES), from CEA Grenoble.* 27 February 2023.
Invited by Dr Jean Breton

25 Tissue Elemental microscopy with LIBS: fast and robust chemical imaging of the skin (and other organs)
B. Busser, Lecture for the R&D department of L'Oréal. 24 November 2022. **Remote Presentation**.
Invited by Dr Thomas Bornschloegl

24 A revolutionary microscope for medical diagnosis: a world-premiere ?
B. Busser, Lecture for the Rotary Club of Grenoble. 28 October 2022. **Grenoble**.
Invited by Dr J. Bessière and M. Peyrière

23 LIBS elemental imaging : a powerful tool for geology, but also for biology and medecine !
B. Busser, Lecture for the Kick-off meeting of the ERC synergy-grant project MEET (Monitoring Earth Evolution through Time), 28 October 2022. **Grenoble**.
Invited by Dr Fabrice Brunet and Prof. Alexander Sobolev

22 Imaging metals in biological tissues: the advantage of LIBS
B. Busser, Lecture for the annual meeting of the Grenoble Institute of Metals in Biology (IMBG), 15 November 2021. **Grenoble**.
Invited by Dr Stephane Menage

21 LIBS elemental imaging for doctors to investigate unknown exposures for idiopathic lung diseases.
B. Busser, Lecture for the Rare Pulmonary Diseases study group, Louis Pradel University Hospital, Lyon, France 12 October 2021. **Lyon**. ***Virtual Event.***
Invited by Prof. Vincent Cottin

20 Bringing AI to improve human laser spectroscopy-based diagnostics.
B. Busser, Lecture for the MIAI-meeting of the Multidisciplinary Institute in Artificial Intelligence (MIAI), Grenoble Alpes Univ., 14 January 2021. ***Grenoble****.* ***Virtual Event.***
Invited by Prof. Eric Gaussier

19 Cold cases : LIBS elemental imaging demonstrates the occupational exposure of idiopathic lung diseases.
*B. Busser & V. Bonneterre, Lecture for the monthly "Multidisciplinary Research Seminars" of Grenoble Alpes Univ. Hospital (****CHUGA****). 19 November 2020.* ***Grenoble****.*

18 Laser spectroscopy: a new technology for the diagnosis of lung diseases related to metal particles inhalation. *[La spectroscopie laser, une nouvelle technologie pour le diagnostic des pathologie pulmonaires liées à l'inhalation de particules métalliques]*
B. Busser, Research seminar for the Institute of Biology and Pathology, Grenoble. 5 october 2020. ***Grenoble****.*
Invited by Prof. Pierre Ray

17 LIBS elemental imaging as a tool to investigate unknown exposures for idiopathic lung diseases.
B. Busser, Lecture for the Lung inflammation and fibrogenesis Group - Inserm UMR 1152 - Bichat / Paris AP-HP University Hospital. 12 October 2020. **Paris**.
Invited by Prof. Bruno Crestani

16 Elemental imaging for Idiopathic respiratory diseases : are we ready ?
B. Busser, Lecture for the Pulmonology Department - Grenoble University Hospital. 25 June 2020. **Grenoble**.
Invited by Prof. Christophe Pison & Dr Sébastien Quetant

15 Idiopathic ? Occupational ? Environmental ? In situ elemental imaging reveals exposure to nanomaterials and metal particulates in the lung of mice and patients.
B. Busser, Lecture for the Pneumology Group - Katholieke Universiteit Leuven - University Hospital. 27 September 2019. **Leuven (BELGIUM)**.
Invited by Prof. Ben Nemery

14 Inputs of recent tissue analysis technologies to characterize lung exposure
[Apport des techniques récentes d'analyse tissulaire dans la caractérisation de l'exposome pulmonaire]
B. Busser, Lecture for the Chest Department - Avicenne University Hospital. 5 September 2019. **Bobigny - Paris**.
Invited by Prof. Hilario Nunes

13 Visualizing metal exposure in tissues with LIBS: an innovative tool for in-situ multi-elemental imaging.
*B. Busser, Lecture for the Technical/Scientific seminar of the International Agency for Research on Cancer (****IARC****). 27 November 2018.* ***Lyon****.*
Invited by Dr Jiri Zavadil

12 Tissue multi-elemental imaging with LIBS: a revolution for medical diagnosis ?
*B. Busser, Scientific seminar - BIG/****CEA*** *laboratory. 19 January 2018. Grenoble*

11 Les biopsies liquides et l'ADN tumoral circulant : du sang neuf pour les cancérologues.
B. Busser, 2nd Rencontres Grenobloises de Cancérologie. 30 June 2017. Grenoble

10 Identification d'un dérivé pyrrolo-pyrimidine pour contourner la résistance à l'apoptose des cancers pulmonaires non-à-petites cellules.
P. Gilson, F. Mahuteau, C. Beauvineau, JL. Coll, A. Hurbin, B. Busser. *Journées de la Recherche Médicale (****JRM****). 3 June 2016. Grenoble*

9 Circuit des investigations biologiques dans les cancers solides : Présent et futur.
B. Busser, Conférence d'actualité organisée au CHU de Grenoble par l'Association des Anciens Internes en Pharmacie des Hôpitaux de Grenoble sur le thème des thérapies ciblées. 18 Septembre 2015. Grenoble

8 Analyse multi-élémentaire des tissus biologiques par spectroscopie laser.
B. Busser, Lecture for the annual "Scientific day", Faculty of Pharmacy of Grenoble. 25 june 2015. Grenoble.

7 Nouvelles stratégies thérapeutiques dans les cancers du poumon.
*B. Busser, **Journée Scientifique du pôle Chimie-Biologie-Santé de l'Université Grenoble-Alpes**. 22 May 2015. Grenoble*

6 La digital PCR en Oncologie. Actualités et perspectives.
*B. Busser, **Symposium sur les nouvelles technologies de Biologie Moléculaire**. Institut A. Bonniot. 2 april 2015. **Grenoble***

5 Intérêts et limites de la médecine de précision en Oncologie.
*B. Busser, **30èmes Journées Pédagogiques et Scientifiques de l'AE2BM (Association des enseignants de Biochimie et de Biologie Moléculaire des facultés de Pharmacie)**. Université Claude Bernard de Lyon. 11 & 12 Sept 2014. **Lyon***

4 Remplacement du test Hémoccult par un test immunologique dans le dépistage organisé : quels changements pour le programme ?
*B. Busser, **Réunion annuelle de des gastro-entérologues de l'Isère** 2014. Programme départemental du Dépistage organisé du cancer colorectal. Office De Lutte contre le Cancer (ODLC). June 2014. **Grenoble***

3 Intérêts et limites des marqueurs compagnons en Oncologie.
*B. Busser, 4èmes Journées Scientifiques du Médicament «nouvelles stratégies thérapeutiques». **CNRS/Université Grenoble**. June 2014*

2 La biologie moléculaire au service de la dermatologie. Présent et futur.
*B. Busser, Colloque scientifique Inter3C 2013 « **Les Incontournables en Cancérologie**». October 2013. Chambéry.*

1 Identification et caractérisation d'un nouveau mécanisme de résistance au gefitinib dans le cancer du poumon non-à petites cellules : Rôle de l'amphiréguline.
*B. Busser, Après-midi de la recherche. **UFR de Pharmacie**-Université Grenoble Alpes. January 2010, Grenoble.*

PUBLICATIONS -

Peer-reviewed articles

(GR-General Review, OA-original article, CR-case report, ED-Editorial, L-Letter)

* equal contribution, @ corresponding author,

51 L Soluble VE-cadherin as a biomarker of response to immunotherapy by anti-PD1 in metastatic melanoma

C. Broche, K. Um, I. Vilgrain, S. Mouret, M-T. Leccia, A. Seigneurin, L. Bouillet, M. Enquebecq, A. Salomon, C. Aspord, B. Busser, P. Porret,A. Belbezier, L. Chaperot, J. Charles

British Journal of Cancer**, 2025, **XXX

DOI : https://doi.org/10.1038/s41416-025-03026-0

50 GR In vivo vectorization and delivery systems for gene therapies and RNA-based therapeutics in oncology

J. Schock Vaiani, M. Broekgaarden, J-L. Coll, L. Sancey and B. Busser@

***Nanoscale**, 2025, **17**, 5501 - 5525*

DOI : https://doi.org/10.1039/D4NR05371K

49 OA Engineering Radiocatalytic Nanoliposomes with Hydrophobic Gold Nanoclusters for Radiotherapy Enhancement

N. M. Carigga Gutierrez, T. Le Clainche, A-L. Bulin, S. Leo, M. Kadri, A. Gamal Ali Abdelhamid, N. Pujol-Solé, G. Obaid, M-A Hograindleur, V. Gardette, B. Busser, V. Motto-Ros, V. Josserand, M. Henry, L. Sancey, A. Hurbin, H. Elleaume, E. Kandiah, X. Le Guével, J-L. Coll, M. Broekgaarden

***Advanced Materials** 2024; 2404605*

DOI : https://doi.org/10.1002/adma.202404605

48 OA WazaGaY: A innovative Aza-BODIPY-Derived Near-Infrared Fluorescent Probe for Enhanced Tumor Imaging

M. Bendellaa, C. Cave, A. Godard, F. Dalonneau, A. Sckinger, C. Goze, O. Maury, P. Le Gendre, E. Bodio, B. Busser@, L. Sancey

***Journal of Medicinal Chemistry,** 2024; 67(18), 16635-16648*

DOI : https://doi.org/10.1021/acs.jmedchem.4c01435

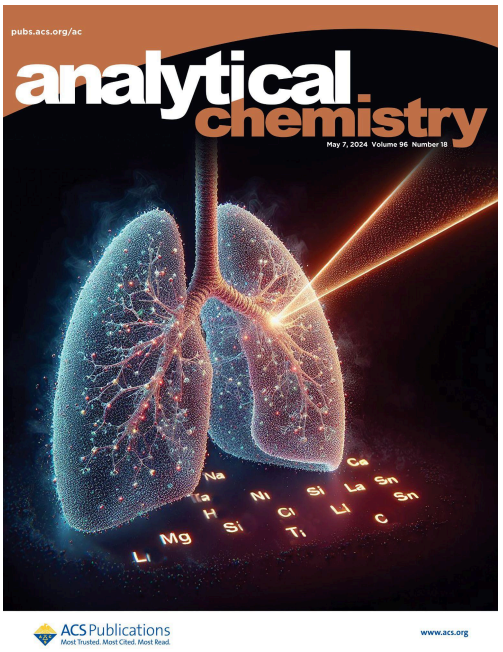
47 OA Enhancing diagnostic capabilities for occupational lung diseases using LIBS imaging on biopsy tissue

V. Ferreira, V. Gardette, B. Busser, L. Sancey, S. Ronsmans, V. Bonneterre, V. Motto-Ros, L. Duponchel

***Analytical Chemistry** 2024; 96(18), 7038-7046*

DOI : https://doi.org/10.1021/acs.analchem.4c00237

“The graphical abstract was selected as the cover image for the issue”



46 Quantifying titanium exposure in lung tissues: a novel LIBS elemental imaging-based
OA analytical framework for biomedical applications
V. Gardette, L. Sancey, M. Leprince, L. Gaté, F. Cosnier, C. Seidel, S. Valentino, F. Pelascini, J.-L. Coll, M. Péoc'h, V. Scolan, F. Paysant, V. Bonneterre, C. Dujardin, B. Busser@, V. Motto-Ros
Small Science, *2024; 2300307* **OPEN ACCESS**
DOI : https://10.1002/smsc.202300307

45 Comparison of the in vitro and in vivo behavior of a series of NIR-II emitting aza-BODIPYs
OA containing different water-solubilizing groups and their Trastuzumab Antibody Conjugates
E. Chazeau, C. Fabre, M. Privat, A. Godard, C. Racoeur, E. Bodio, B. Busser, K.D. Wegner, L. Sancey, C. Paul, C. Goze
Journal of Medicinal Chemistry, *2024; 67, 5, 3679–3691.*
DOI : https://doi.org/10.1021/acs.jmedchem.3c02139

44 Roles of zinc in cancers: From altered metabolism to therapeutic applications
GR M. Bendellaa, P. Lelièvre, JL. Coll, L. Sancey, A. Deniaud, B. Busser@
International Journal of Cancer, *2024;154:7–20.*
DOI : http://doi.org/10.1002/ijc.34679 **OPEN ACCESS**

43 NIR-II aza-BODIPY dyes bioconjugated to monoclonal antibody trastuzumab for selective
OA imaging of HER2-positive ovarian cancer
A. Godard, G. Kalot, M. Privat, M. Bendellaa, B. Busser, KD. Wegner, F. Denat, X. Le Guével, JL. Coll, E. Bodio, C. Goze, L. Sancey
Journal of Medicinal Chemistry *2023; 66 (7), 5185-5195*
DOI : https://10.1021/acs.jmedchem.3c00100

42 Laser-induced breakdown spectroscopy imaging for material and biomedical applications:
GR recent advances and future perspectives
V. Gardette, V. Motto-Ros, C. Alvarez-Llamas, L. Sancey, L. Duponchel, and B. Busser@
Analytical Chemistry *2023; 95 (1) 49-69*
DOI : https://doi.org/10.1021/acs.analchem.2c04910
"invited review" for the annual special Issue "Fundamental and Applied Reviews in Analytical Chemistry 2023"

41 OA Al(III) and Ga(III) bisphenolate azadipyrromethene-based “N2O2” complexes as efficient NIR-fluorophores
A. Godard, L. Abad Galán, J. Rouillon, S. Al-Shehimy, W. Tajani, C. Cave, R Malacea -Kabbara, Y. Rousselin, P. Le Gendre, A. Fihey, M. Bendellaa, B. Busser, L. Sancey, B. Le Guennic, C. Bucher, O. Maury, C. Goze, E. Bodio
Inorganic Chemistry *2023; 62, 13, 5067–5080*
DOI : https://doi.org/10.1021/acs.inorgchem.2c03918

40 OA Lipoprotein interactions with water-soluble NIR-II emitting aza-BODIPYs boost the fluorescence signal and favor selective tumor targeting.
G. Kalot; A. Godard; B. Busser, M. Bendellaa, F. Dalonneau, C. Paul, X. Le Guével, V. Josserand, JL. Coll, F. Denat, E. Bodio, C. Goze, T. Gautier, L. Sancey
Biomaterials Science, *2022; 10, 6315-6325.*
DOI : https://doi.org/10.1039/D2BM01271E

39 OA Succinimido–Ferrocidiphenol Complexed with Cyclodextrins Inhibits Glioblastoma Tumor Growth In Vitro and In Vivo without Noticeable Adverse Toxicity
F. Najlaoui, B. Busser, GS. Taïwe, P. Pigeon, N. Sturm., D. Giovannini, N. Marrakchi, A. Rhouma, G. Jaouen, S. Gibaud, M.I De Waard
Molecules *2022; 27(14), 4651*
DOI : https://doi.org/10.3390/molecules27144651

38 OA Visualizing the cerebral distribution of chemical elements: a challenge met with LIBS elemental imaging
B. Busser@, AL. Bulin, V. Gardette, H. Elleaume, F. Pelascini, A. Bouron, V. Motto-Ros, L. Sancey
Journal of Neuroscience Methods *2022; 379: 109676*
DOI : https://doi.org/10.1016/j.jneumeth.2022.109676

37 OA Near-infrared emitting fluorescent homobimetallic gold (I) complexes displaying promising in vitro and in vivo therapeutic properties
R. Lescure, M. Privat, J. Pliquett, A. Massot, O. Baffroy, B. Busser, PS. Bellaye, B. Collin, F. Denat, A. Bettaïeb, L. Sancey, C. Paul, C. Goze, E. Bodio
European Journal of Medicinal Chemistry *2021; 220: 113483,*
DOI : https://doi.org/10.1016/j.ejmech.2021.113483

36 GR Iron Dysregulation in Human Cancer: Altered Metabolism, Biomarkers for Diagnosis, Prognosis, Monitoring and Rationale for Therapy.
P. Lelièvre, L. Sancey, JL. Coll, A. Deniaud, B. Busser@
Cancers, *2020; 12: 3524*
DOI : https://doi.org/10.3390/cancers12123524

35 GR The Multifaceted Roles of Copper in Cancer: a Trace Metal Element with Dysregulated Metabolism, but also a Target or a Bullet for Therapy.
P. Lelièvre, L. Sancey, JL. Coll, A. Deniaud, B. Busser@
Cancers, *2020; 12: 3594*
DOI : https://doi.org/10.3390/cancers12123594

34 OA Radiation dose-enhancement is a potent radiotherapeutic effect of rare-earth composite nanoscintillators in preclinical models of glioblastoma.
AL. Bulin, M. Broekgaarden, F. Chaput, V. Baisamy, J. Garrevoet, B. Busser, D. Brueckner, A. Youssef, JL. Ravanat, C. Dujardin, V. Motto-Ros, F. Lerouge, S. Bohic, L. Sancey and H. Elleaume. ***Advanced Science,*** *2020; 2001675: 1-18*
DOI : https://doi.org/10.1002/advs.202001675

33 OA Aza-BODIPY: A New Vector for Enhanced Theranostic Boron Neutron Capture Therapy Applications.
G. Kalot; A. Godard; B. Busser, J. Pliquett; M. Broekgaarden; V. Motto-Ros; K.D. Wegner; U. Resch-Genger; U. Köster; F. Denat; JL. Coll; E. Bodio; C. Goze; L. Sancey ***Cells,*** *2020; 9, 1953.*
DOI : https://doi.org/10.3390/cells9091953

32 OA Water-Soluble Aza-BODIPYs: biocompatible organic dyes for high contrast in vivo NIR-II imaging.
A. Godard; G. Kalot; J. Pliquett; B. Busser; X. Le Guével; KD. Wegner; U. Resch-Genger; Y. Rousselin; JL. Coll; F. Denat; E. Bodio; C. Goze; L. Sancey. ***Bioconjugate Chemistry,*** *2020; 15;31(4):1088-1092.*
DOI : https://doi.org/*10.1021/acs.bioconjchem.0c00175*

31 OA Stapled peptide targeting the CDK4/Cyclin D interface synergizes with Abemaciclib in non-small cell lung cancers
C. Bouclier, M. Simon, G. Laconde, M. Pellerano, S. Diot, S. Lantuejoul, B. Busser, L. Vanwonterghem, J. Vollaire, V. Josserand, B. Legrand, JL. Coll, M. Amblard, A. Hurbin & MC. Morris. ***Theranostics,*** *2020; 10(5): 2008-2028*
DOI : https://doi.org/10.7150/thno.40971 **OPEN ACCESS**

30 GR Development of molecular analyses by digital PCR for clinical practice: positioning, current applications and perspectives [*article in French*]
JA. Denis, A. Perrier, J. Nectoux, PJ. Lamy, AS. Alary, N. Sarafan-Vasseur, D. Henaff, B. Busser, R. Appay, P. Pedini, P. Romanet, V. Taly, F. Fina, ***Ann Biol Clin (Paris),*** *2019 Dec 1;77(6):619-637*
DOI : https://doi.org/10.1684/abc.2019.1502

29 GR Elemental imaging using laser-induced breakdown spectroscopy: latest medical applications [*article in French*]
M. Leprince, L. Sancey, JL. Coll, V. Motto-Ros, B. Busser@. ***Med Sci (Paris),*** *2019, 35: 682-8*
DOI : https://doi.org/10.1051/medsci/2019132 **OPEN ACCESS**
"invited contribution"

28 OA Gold Nanoclusters as a contrast agent for image-guided surgery of Head and Neck tumors
C. Colombé, X. Le Guével, A. Martin-Serrano, M. Henry, E. Porret,C. Comby-Zerbino, R. Antoine, I. Atallah, B. Busser, JL. Coll, CA. Righini, L. Sancey. ***Nanomedicine: NBM,*** *2019, May 17;20:102011*
DOI : https://doi.org/10.1016/j.nano.2019.04.014

27 OA The pyrrolopyrimidine colchicine-binding site agent PP-13 reduces the metastatic dissemination of invasive cancer cells in vitro and in vivo
P. Gilson, M. Couvet, L. Vanwonterghem, M. Henry, J. Vollaire, V. Baulin, M. Werner, A. Orlowska, V. Josserand, F. Mahuteau-Betzer, L. Lafanechère, JL Coll, B. Busser@, A. Hurbin. ***Biochemical Pharmacology,*** *2019, February,160:1-13*
DOI : https://doi.org/10.1016/j.bcp.2018.12.004

26 GR Laser-Induced Breakdown Spectroscopy for Human and Animal Health: a review
N. Melikechi, R. Gaudiuso, Z.A. Abdel-Salam, M.A. Harith, V. Palleschi, V. Motto-Ros, and B. Busser. ***Spectrochimica Acta Part B.,*** *2019, 152: 123-148*
DOI : https://doi.org/10.1016/j.sab.2018.11.006
"invited Review"

25 Development of digital PCR molecular tests for clinical practice: principles, practical

GR implementation and recommendations [*article in French*]
JA. Denis, J. Nectoux, PJ. Lamy, C. Rouillac Le Sciellour, H. Guermouche, AS. Alary, O. Kosmider, N. Sarafan-Vasseur, C. Jovelet, B. Busser, P. Nizard, V. Taly, F. Fina. ***Ann Biol Clin (Paris),*** *2018, 76(5):505-523*
DOI : https://doi.org/10.1684/abc.2018.1372

24 OA Anticancer properties of lipid and poly(ε-caprolactone) nanocapsules loaded with ferrocenyl-tamoxifen derivatives
F. Najlaoui, P. Pigeon, S. Aroui, M. Pezet, L. Sancey, N. Marrakchi, A. Rhouma, G. Jaouen, M. De Waard, B. Busser, S. Gibaud. ***J Pharm Pharmacol,*** *2018, 70 (11), 1474-1484*
DOI : https://doi.org/10.1111/jphp.12998

23 OA Nuclear translocation of IGF1R by intracellular amphiregulin contributes to the resistance of lung tumour cells to EGFR-TKI
M. Guérard, T. Robin, P. Perron, AS. Hatat, L. David-Boudet, L. Vanwonterghem, B. Busser, JL. Coll, S. Lantuejoul, B. Eymin, A. Hurbin, S. Gazzeri. ***Cancer Lett.,*** *2018, 28(420):146-155*
DOI : https://doi.org/10.1016/j.canlet.2018.01.080

22 GR Elemental imaging using laser-induced breakdown spectroscopy: A new and promising approach for biological and medical applications
B. Busser@, S. Moncayo, JL. Coll, L. Sancey, V. Motto-Ros. ***Coord. Chem. Rev.,*** *2018, 358:70-79*
DOI : https://doi.org/10.1016/j.ccr.2017.12.006
invited contribution for the themed issue "ISABC 2017"

21 OA Characterization of foreign materials in paraffin-embedded pathological specimens using in-situ multi-elemental imaging with laser spectroscopy
B. Busser@, S. Moncayo, F. Trichard, V. Bonneterre, N. Pinel, F. Pelascini, P. Dugourd, JL. Coll, M.D'Incan, J. Charles, V. Motto-Ros, L. Sancey. ***Modern Pathol.,*** *2018, 31, 378–384.*
DOI : https://doi.org/10.1038/modpathol.2017.152
Highlighted in **"Inside the USCAP journals"** (https://doi.org/10.1038/modpathol.2018.26)

20 OA Identification of pyrrolopyrimidine derivative PP-13 as a novel microtubule-destabilizing agent with promising anticancer properties
P. Gilson, F. Josa-Prado, C. Beauvineau, D. Naud-Martin, L. Vanwonterghem, F. Mahuteau- Betzer, A. Moreno, P. Falson, L. Lafanechere, V. Frachet, JL. Coll, JF. Díaz, A. Hurbin, B. Busser. ***Sci. Rep.,*** *2017, 7:10209.*
DOI : https://doi.org/10.1038/s41598-017-09491-9 **OPEN ACCESS**

19 OA Multi-elemental imaging of paraffin-embedded human samples by laser-induced breakdown spectroscopy
S. Moncayo, F. Trichard, B. Busser, M. Sabatier-Vincent, F. Pelascini, N. Pinel, I. Templier, J. Charles, L. Sancey, V. Motto-Ros. ***Spectrochimica Acta Part B***, *2017, 133; 40-44.*
DOI : https://doi.org/10.1016/j.sab.2017.04.013

18 OA Efficacy of AKT inhibitor ARQ 092 compared with sorafenib in a cirrhotic rat model with hepatocellular carcinoma
G. Roth, Z. Macek Jilkova, A. Zeybek Kuyucu, K. Kurma, ST. Ahmad Pour, G. Abbadessa, Y. Yu, B. Busser, P. Marche, V. Leroy, T. Decaens. ***Mol Cancer Ther***, 2017*, 16(10); 2157–65.*
DOI : https://doi.org/10.1158/1535-7163.MCT-16-0602-T

17 GR Plasma circulating tumor DNA levels for the monitoring of melanoma patients: landscape of available technologies and clinical applications
B. Busser@, J. Lupo, L. Sancey, S. Mouret, P. Faure, J. Plumas, L. Chaperot, MT. Leccia, JL. Coll, A. Hurbin, P. Hainaut, J. Charles. ***BioMed Research International***, 2017*, Article ID 5986129, 8 pages.*
DOI : https://doi.org/10.1155/2017/5986129 **OPEN ACCESS**

16 OA Synergistic activity of vorinostat combined with gefitinib but not with sorafenib in mutant KRAS human non-small cell lung cancers and hepatocarcinoma
V. Jeannot, B. Busser, L. Vanwonterghem, S. Michallet, S. Ferroudj, M. Cokol, JL. Coll, M. Ozturk, A. Hurbin. ***OncoTargets and Therapy***, 2016*, 9;9:6843-6855.*
DOI : https://doi.org/10.2147/ott.s117743 **OPEN ACCESS**

15 OA 3D Imaging of Nanoparticle Distribution in Biological Tissue by Laser-Induced Breakdown Spectroscopy
Y. Gimenez, B. Busser, F. Trichard, A. Kulesza, J. M. Laurent, V. Zaun, F. Lux, J. M. Benoit, G. Panczer, P. Dugourd, O. Tillement, F. Pelascini, L. Sancey, V. Motto-Ros. ***Sci. Rep.***, 2016*, 6:29936.*
DOI : https://doi.org/10.1038/srep29936 **OPEN ACCESS**

14 OA A Recombinant Fungal Lectin for Labeling Truncated N-Glycans on Human Cancer Cells
A. Audfray*, M. Beldjoudi*, A. Breiman*, A. Hurbin, I. Boos, C. Unverzagt, M. Bourras, S. Lantuejoul, JL. Coll, A. Varrot, J. Le Pendu@, B. Busser@, A. Imberty A@. ***Plos One***, 2015*, 10(6): e0128190*.
DOI : https://doi.org/10.1371/journal.pone.0128190 **OPEN ACCESS**

13 OA Laser spectrometry for elemental imaging of biological tissues
L. Sancey, V. Motto-Ros, B. Busser, S. Kotb, JM. Benoit, A. Piednoir, F. Lux, O. Tillement, G. Panczer, J. Yu. ***Sci. Rep.***, 2014*, 4:6065*.
DOI : https://doi.org/10.1038/srep06065 **OPEN ACCESS**

12 GR Mechanisms of resistance to anti-BRAF treatments
J. Charles, C. Martel, F. de Fraipont, MT. Leccia, C. Robert, B. Busser@. ***Ann Dermatol Venereol***, 2014*, 141(11):671-681*.
DOI : https://doi.org/10.1016/j.annder.2014.06.021

11 CR Major response to vemurafenib in patient with severe cutaneous Langerhans cell histiocytosis harboring BRAF V600E mutation
J. Charles, JC. Beani, G. Fiandrino, B. Busser. ***Journal of the American Academy of Dermatology***, 2014*, 71(3):e97–e99*.
DOI : https://doi.org/10.1016/j.jaad.2014.03.038

10 OA The PI3K/AKT pathway promotes gefitinib resistance in wild-type EGFR lung adenocarcinoma by a deacetylase-dependent mechanism
V. Jeannot, B. Busser, E. Brambilla, M. Wislez, B. Robin, J. Cadranel, JL. Coll, A. Hurbin. ***Int. J. Cancer***, 2014*, 134(11):2560-71*.
DOI : https://doi.org/10.1002/ijc.28594

9 CR Identification of a novel complex BRAF mutation associated with major clinical response to vemurafenib in a metastatic melanoma patient
B. Busser@, MT. Leccia, G. Gras-Combe, I. Bricault, I. Templier, A. Claeys, MJ. Richard, F. De Fraipont, J. Charles. ***JAMA Dermatol.***, 2013, 149(12):1403-1406.
DOI : https://doi.org/10.1001/jamadermatol.2013.8198

Published Online in the “Current Highlights” category (october 2013)

8 OA Adequacy of Computed tomography (CT)-guided transthoracic needle core biopsy for histomolecular diagnosis of pulmonary adenocarcinoma
G. Ferretti, B. Busser, A. Jankowski, F. De Fraipont, M. Prieur, A. Mc Leer Florin, L. Mescam-Mancini, D. Moro-Sibilot, and S. Lantuejoul. ***Lung Cancer***, 2013*, 82(1):69-75*.
DOI : https://doi.org/10.1016/j.lungcan.2013.07.010

7 OA Comparison of COBAS 4800 KRAS, TaqMan PCR and High Resolution Melting PCR assays for the detection of KRAS somatic mutations in formalin-fixed paraffin embedded colorectal carcinomas
A. Harlé, B. Busser, M. Rouyer, V. Harter, P. Genin, A. Leroux, JL. Merlin. ***Virchows Archiv***, 2013*, 462(3):329-35*.
DOI : https://doi.org/10.1007/s00428-013-1380-x

6 OA Insulin-like Growth Factor-1 Receptor inhibition overcomes gefitinib resistance in mucinous lung adenocarcinoma
A. Hurbin, M. Wislez, B. Busser, M. Antoine, C. Tenaud, N. Rabbe, S. Dufort, F. De Fraipont, D. Moro-Sibilot, J. Cadranel, JL. Coll, and E. Brambilla. ***J. Pathol.***, 2011*, 225(1): 83-95*
DOI : https://doi.org/10.1002/path.2897

5 GR The multiple roles of amphiregulin in human cancer
B. Busser@, L. Sancey, E. Brambilla, JL. Coll, and A. Hurbin. ***BBA reviews on cancer***, 2011*, 1816(2): 119-131*.
DOI : https://doi.org/10.1016/j.bbcan.2011.05.003

4 CR Unusual increased beta-globulins in an elderly patient
B. Busser@, S. Millet, CE. Bulabois, P. Faure, and JC. Renversez. ***Clin. Chem.***, 2011*, 57(7): 948-51*
DOI : https://doi.org/10.1373/clinchem.2010.150425 **OPEN ACCESS**

3 OA Amphiregulin Promotes Resistance to Gefitinib in NonSmall Cell Lung Cancer Cells by Regulating Ku70 Acetylation
B. Busser, L. Sancey, V. Josserand, C. Niang, S. Khochbin, MC. Favrot, J-L. Coll., and A. Hurbin. ***Mol. Ther.***, 2010*, 18(3): 536-543*
DOI : https://doi.org/10.1038/mt.2009.227 **OPEN ACCESS**

2 OA Amphiregulin promotes BAX inhibition and resistance to gefitinib in Non-Small Cell Lung Cancers.
B. Busser, L. Sancey, V. Josserand, C. Niang, MC. Favrot, J-L. Coll., and A. Hurbin. ***Mol. Ther.***, 2010*, 18(3): 528-535*.
DOI : https://doi.org/10.1038/mt.2009.226 **OPEN ACCESS**

1 ED The increasing role of amphiregulin in non-small cell lung cancer.
B. Busser, J-L. Coll, and A. Hurbin. ***Pathol. Biol.***, 2009*, 57 (7-8): 511-12*.
DOI : https://doi.org/10.1016/j.patbio.2008.10.002
Invited contribution relating to the "Diagnostic Innovations" 2009 Prize received from the French Clinical Chemistry Society - (SFBC)

Books & Book Chapters

6 **Advances in Boron Neutron Capture Therapy** (Book)
IAEA - International Atomic Energy Agency - Collective writing,
(Editor: Vienna : International Atomic Energy Agency*, Austria*)
Date published: 2023, 416 pages ¦ 164 figures.
ISBN: 978–92–0–132723–9
DOI : https://www.iaea.org/publications/15339/advances-in-boron-neutron-capture-therapy
Free online version Here

5 **LIBS imaging for biomedical samples: short review and perspectives** (Chapter)
V. Motto-Ros, L. Sancey, V. Bonneterre, and B. Busser, pages 400–416
"Cancer Identification and Diagnosis Using Optical Methods"
(Editor: N. Melikechi - *University of Massachusetts Lowell, USA*)
World Scientific Publishing, February 2023, 560 p.
ISBN: 978-981-125-895-4 (hardcover)
DOI (chapter) : https://doi.org/10.1142/9789811258961_0013
DOI (book) : https://doi.org/10.1142/12907

4 **Preclinical evaluation of nanoparticle behavior in biological tissue** (Chapter)
L. Sancey, V. Motto-Ros, and B. Busser, pages 131-138
"Biological, forensic and materials science applications of LIBS"
(Editor G. Galbács)
Springer, 2022, 326 p.
ISBN: 978-3031145018
DOI (book) : https://doi.org/10.1007/978-3-031-14502-5
https://link.springer.com/chapter/10.1007/978-3-031-14502-5_5

3 **LIBS Imaging Applications** (Chapter)
V. Motto-Ros, S. Moncayo, C. Fabre, and B. Busser, pages 329-346
Laser Induced Breakdown Spectroscopy, 2nd Edition
(Editors Jagdish P. Singh & Surya N. Thakur)
Publisher Elsevier Science, 2020, 620 p.
ISBN: 978-0-12-818829-3
DOi : https://doi.org/10.1016/B978-0-12-818829-3.00014-9

2 **Molecular Biology** (Chapter)
P. Gilson and B. Busser, pages 223-233
Les biotechnologies en santé - Tome 1: Introduction aux biotechnologies en santé,
(Coords. Sandrine Bourgoin-Voillard, Walid Rachidi, Michel Sève)
Publisher Lavoisier, 2015, 318 p.
ISBN: 978-2743020859, [in French]

1 **Cancer bronchique : l'amphiréguline induit la résistance au gefitinib** (Book)
B. Busser, Editions Universitaires Européennes (EUE), December *2010*, broché 224 p.
ISBN: 978-613-1-54607-5 [in French]

Published Conference Abstracts (selection among latest ones) (full list here)

24 Mutational Imprints of Cobalt Exposure: A Genome-Scale Multi-system Approach.
PN. Melki, C. Renard, E. Mariussen, E. Rundén Pran, EM. Longhin, M. Dusinska, L. Sancey, B. Busser, RA. Herbert, M. Korenjak and J. Zavadil.
2019. Environmental and molecular mutagenesis 60, 49-49
DOI : https://doi.org/10.1002/em.22328

23 Sarcoïdoses et Fibroses Pulmonaires Idiopathiques : Les analyses minéralogiques par imagerie LIBS et MEB orientent le diagnostic étiologique
B. Busser, M. Catinon, M. Leprince, F. Pelascini, JL. Coll, L. Sancey, V. Motto-Ros, M. Vincent, V. Bonneterre
2018. Archives des Maladies Professionnelles et de l Environnement 79(3):420
DOI : https://doi.org/10.1016/j.admp.2018.03.475

22 Tracking etiology and exposure for idiopathic lung diseases: recent advances from in situ multi-elemental imaging with laser spectrometry.
B Busser, M Leprince, S Moncayo, F Pelascini, JL Coll, V Bonneterre, V Motto-Ros, L Sancey
2018. Occupational and Environmental Medicine 75(Suppl 2):A438.3-A444
DOI : https://doi.org/10.1136/oemed-2018-ICOHabstracts.1250

Written Communications in Conferences (Posters)

selection of 5 among >80 posters presented **(full list here)**

74 In situ multi-elemental imaging of periprosthetic tissues with laser spectrometry.
B. Busser, A. Al-Shihabi, L. Al-Shihabi, JL. Coll, V. Motto-Ros, L. Sancey, P. Campbell.
European Molecular Imaging Meeting (EMIM). 14th annual meeting of the European Society for Molecular Imaging (ESMI). 19-22 March 2019. Glasgow (**UK**).
Award - category "Optical Imaging and Microscopy | Technology"

73 Theranostic innovative nano-compounds for fluorescent imaging and boron neutron capture therapy (BNCT).
G. Kalot, V. Cosensa, B. Busser, R. Poirot, U. Köster, JL. Coll, C. Goze, R. Auzély-Velty, L. Sancey.
European Molecular Imaging Meeting (EMIM). 14th annual meeting of the European Society for Molecular Imaging (ESMI). 19-22 March 2019. Glasgow (**UK**).
Award - category "Imaging Cancer Therapy"

69 Laser Induced Breakdown Spectroscopy imaging for supporting medical diagnoses
M. Leprince, S Moncayo, L. Sancey, V. Bonneterre, F. Trichard, F. Pelascini, J. Charles, C. Dujardin, B. Busser, V. Motto-Ros.
14th European Workshop on Laser Ablation (EWLA 14), 16-29 June 2018. Pau.
Award - *Journal Spectrochimica Acta Part B: Atomic Spectroscopy* (SAB) *Poster Prize*

62 Laser Spectroscopy for in situ elemental imaging of lung tissue: a promising technology.
B. Busser, S. Moncayo, M. Catinon, L. Sancey, F. Thivolet, J.F. Bernaudin, M. Kambouchner, V. Bonneterre, M. Vincent, V. Motto-Ros
European, respiratory Society - ERS CONGRESS 2017 - 9-13 Septembre 2017 Milan (ITALY)

56 A new pyrrolo-pyrimidin derivative (PP13) as a potent anti-cancer agent for the treatment of resistant Non-small Cell Lung Cancers.
P Gilson, F Josa Prado, C Beauvineau, F Mahuteau, A Moreno, P Falson, L Lafanechère, V Frachet, JL Coll, JF Diaz, A Hurbin, B Busser
12e Journées de la Recherche Respiratoire (J2R), Octobre 2016, Nice.
Award - Best Communication - topic "Cancer"

Outreach and Press Releases -

APMnews et autres …

Développement du premier prototype LIBS-médical au monde ! [*article in French*]
La Région Auvergne-Rhône-Alpes et l'Europe web page, https://www.europeenauvergnerhonealpes.fr/portraits-de-beneficiaires/developpement-du-premier-prototype-libs-medical-au-monde ; June, 2024

FluoNIR-II The start-up that wants to make tumors visible. [*article in French*]
POCMedia web page, https://www.pocmedia.fr/la-start-up-fluonir-ii-veut-rendre-visibles-les-tumeurs/
January 4th, 2023

LIBS opens the doors of the clinic [*article in French*]
V. Motto-Ros, M. Leprince, L. Duponchel, L. Sancey, V. Bonneterre, C. Dujardin, F. Pelascini, B. Busser, ***Photoniques,*** *2020; 103:34-37*
"invited contribution"

LIBS Imaging Is Entering the Clinic as a New Diagnostic Tool [article]
V. Motto-Ros, L. Sancey, V. Bonneterre, B. Busser@, ***Spectroscopy,*** *2020; 35(7) 35):29-31*
"invited contribution"

LIBS-based imaging: recent advances and future directions [article]
V. Motto-Ros, V. Gardette, L. Sancey, M. Leprince, D. Genty, S. Roux, B. Busser, F. Pelascini.
Spectroscopy, *2020; 35(2): 34–40*
"invited contribution"

Web-Newsletter Hebdomadaire de l'Institut National du Cancer (INCa) "*Nota Bene Cancer*"
NBC n° 241 du 04/09/2014. Laser spectrometry for multi-elemental imaging of biological tissues_Scientific Reports, Vol. 4, 2014 (article en libre accès)
"Menée sur des échantillons de tissu rénal prélevés sur des modèles murins, cette étude française évalue la faisabilité et les performances d'une méthode de spectroscopie sur plasma induit par laser pour cartographier avec une haute résolution la présence d'éléments-traces dans les tissus biologiques"

Web-Newsletter Hebdomadaire de l'Institut National du Cancer (INCa) "*Nota Bene Cancer*"
NBC n° 202 du 15/10/2013. Identification of a novel complex braf mutation associated with major clinical response to vemurafenib in a patient with metastatic melanoma. JAMA Dermatology, sous presse, 2013 (résumé)
" Menée sur un patient atteint d'un mélanome métastatique, cette étude identifie une nouvelle mutation complexe du gène BRAF en association avec une réponse clinique majeure au vemurafenib"

Actualités scientifiques en Physique – Site Web du CNRS-INP
9 décembre 2014 - Actualité de l'institut- A la Une

Imager la répartition de nanoparticules non fluorescentes dans les tissus
Des physiciens et biologistes viennent d'adapter à la microscopie haute résolution de tissus biologiques la technique d'imagerie élémentaire, qui permet de cartographier l'abondance des éléments chimiques à l'échelle de la cellule (...)
http://www.cnrs.fr/inp/spip.php?article3265

Web-Newsletter CLARA Actus du Cancéropôle Lyon Auvergne Rhône-Alpes Octobre 2014
A LA UNE – PUBLICATIONS: Laser spectrometry for multi-elemental imaging of biological tissues
Sancey L., V. Motto-Ros, Busser B. et.al. (Inst. Lumiere Matiere)

Preprints

05 OA Copper transport across cell membranes by calix[4]arene-based cationophores leading to potent biological activity
N. Renier,G. Weyckmans Mele, P. Lelièvre, M. Boeckstaens, Lavendomme, A. Aydogan, Y. Dussein, P. Charbonnier, L. Puillet Anselme, B. Chovelon, H. Castillo-Michel, N. Tumanov, J. Wouters, L. Sancey, B. Busser, A-M. Marini, G. Veronesi, I. Jabin, A. Deniaud, H. Valkenier
ChemRxiv 2025, (not peer reviewed),
DOI : https://doi.org/10.26434/chemrxiv-2025-2z3pd
Published after peer review in Inorganic Chemistry, 2023

04 OA "N2O2" Metal-azaDIPY complexes: a new class of NIR-fluorophores.
A. Godard, L. Abad Galán, J. Rouillon, S. Al-Shehimy, W. Tajani, C. Cave, R Malacea -Kabbara, Y. Rousselin, P. Le Gendre, A. Fihey, M. Bendellaa, B. Busser, L. Sancey, B. Le Guennic, C. Bucher, O. Maury, C. Goze, E. Bodio
ChemRxiv 2022, (not peer reviewed),
DOI : https://doi.org/10.26434/chemrxiv-2022-j15lg
Published after peer review in Inorganic Chemistry, 2023

03 GR The multifaceted roles of Zinc in Cancer.
M. Bendellaa, P. Lelièvre, JL. Coll, L. Sancey, A. Deniaud, B. Busser
Preprints 2022, (not peer reviewed)
DOI : https://www.preprints.org/manuscript/202209.0282/v1
Published after peer review in International Journal of Cancer, 2023

02 GR Iron Dysregulation in Human Cancer: Altered Metabolism, Biomarkers for Diagnosis, Prognosis, Monitoring and Rationale for Therapy.
P. Lelièvre, L. Sancey, J-L. Coll, A. Deniaud, B. Busser
Preprints 2020, (not peer reviewed)
DOI : https://www.preprints.org/manuscript/202010.0447/v1
Published after peer review in Cancers, 2020

01 GR The Multifaceted Roles of Copper in Cancer: a Trace Metal Element with Dysregulated Metabolism, but also a Target or a Bullet for Therapy.
P. Lelièvre, L. Sancey, J-L. Coll, A. Deniaud, B. Busser
Preprints 2020, (not peer reviewed)
DOI : https://www.preprints.org/manuscript/202010.0353/v1
Published after peer review in Cancers, 2020

PATENTS / START-UPs

2023 **Patent** : "***Calix[4]arenes with high anticancer activity"***
B Busser, A. Deniaud, L. Sancey, P. Lelièvre, I. Jabin, H. Valkenier, N. Renier
Filed January 2023
PCT/EP2024/051810
N/réf.: PA220482WO/HKO/CCU
Agents chélateurs du cuivre pour utilisation dans le traitement de cancer et autres pathologies
Demande internationale n° PCT/EP2024/051810 du 25 janvier 2024
Titulaires : UNIVERSITE GRENOBLE ALPES, et al
Application / Priorité : EP n° 23305100.2 du 26 janvier 2023

2019 **Patent** : "***Utilization of aza-BODIPYs for imaging purposes***".
L. Sancey, C. Goze, E. Bodio, B. Busser, J. Pliquett, A. Godard, G. Kalot, V. Josserand, X. Le Guével, JL. Coll, F. Denat. **Filed August 2019**
Université Grenoble Alpes, CNRS, INSERM, Univ. de Bourgogne,
PCT/EP2020/071865 _ *WO2021023731*

2017 Co-founding member of the start-up "***Ablatom SAS***"

RESEARCH GROUP (Current members)

RESEARCH GROUP (Alumni & Former members)

Pierre Lelievre,Ghadir Kalot, Pauline Gilson, Victor Jeannot, Mona Beldjoudi, Mohamed Bendellaa

MENTORING / Research Supervision

PhD students

2024-... **Ongoing**	**Magdalena Stoykova**	PhD	Development of innovative fluorescent tracers for fluorescence guided surgery and bio-imaging (PhD Project) *Co-directed by L. Sancey (Univ. Grenoble Alpes)*
2024-... **Ongoing**	**Ronald Salas Araya**	PhD	Développement de conjugués anticorps-molécules à activité ferroptotique (PhD Project) *Co-directed by A. Boumendjel (Univ. Grenoble Alpes)*
2021-sept 2024	**Mohamed Bendellaa**	PhD	Preclinical evaluation of metal-DIPY optical and photoacoustic compounds derived from BODIPY *Co-directed by L. Sancey (CNRS & Univ. Grenoble Alpes)*
2020 - oct 2024	**Pierre Lelièvre**	PhD	Evaluation and characterization of the biological effects of calix[4]arene-type ionophores in lung cancer: anticancer activity and impact on copper homeostasis **Univ. Grenoble Alpes** *Co-directed by A. Deniaud (Univ. Grenoble Alpes)*

oct 2017- jan 2021	**Marine Leprince**	PhD	**LIBS** “from laser/tissue interactions to medical elemental imaging”. **Univ. Lyon & Univ. Grenoble Alpes** **Award** - *JAAS Poster Prize, EWLA-14 meeting, Pau, 2018* *Co-directed by V. Motto-Ros (Univ. Lyon)*
2014- oct 2017	**Pauline Gilson**	PhD	"Characterization of new microtubule-targeting agents with a pyrrolopyrimidine structure for the treatment of cancers". **Univ. Grenoble Alpes. With honours** **PhD award 2017**, from Association Biologie et Cancer **Best Poster** - Respiratory Research Meeting, Nice, 2016 **Jacques Rocipon Award**, Grenoble, 2015 **“Année Recherche” fellowship**, 2015 *Co-directed by A. Hurbin (IAB)*
oct 2012- oct 2015	**Mona-Feryale Beldjoudi**	PhD	"A Recombinant Fungal Lectin for Labeling Truncated Glycans on Human Cancer Cells". **Univ. Batna & Univ. Grenoble Alpes** *Co-directed by M. Bouras (Univ. of Batna, Algeria)*

Licence (B.Sc), Master (M.Sc.)

April 2025 July 2025	**Louna Lenvin**	Pharm. student	Innovative Lipid nanoformulations for delivering liposoluble anticancer compounds - *Codirection Marie Anne Jourdain*
Jan 2025 July 2025	**Marilynn Choueiry**	Master 2 (M.Sc 2) Biotechno	Studying the roles of metals in sarcoidosis - *Codirection A. Belbézier (CHU Grenoble Alpes)*
March 2024 Aug 2024	**Erwan Dupont**	Master 2 (M.Sc 2) Biotechno	Validation of a New LIBS Microscope Prototype for Multi-Element Imaging of Biomedical Samples
Jan 2024 July 2024	**Magdalena Stoykova**	Master 2 (M.Sc 2) Biotechno	Lipid Nanoparticles for vectorization of calix-4-arènes
Jan 2023 July 2023	**Cyril Nogier**	Master 2 (M.Sc 2) Biotechno	Anticancer effects of calix-4-arènes
Jan 2022 July 2022	**Lamia Ourak**	Master 2 (M.Sc 2) Biotechno	Resistance to KRAS inhibitors
Jan 2021 July 2021	**Mohamed Bendellaa**	Master 2 (M.Sc 2) Biotechno	Zinc and resistance to cancer treatments
Jan 2020 July 2020	**Yazid Bouzid**	Master 2 (M.Sc 2)	Monitoring of a national multicenter clinical trial : LIBS imaging for Idiopathic Lung Diseases

		Clinical Research	
Jan 2020 July 2020	**Pierre Lelièvre**	Master 2 (M.Sc 2) Biotechno	Copper and cancer
April 2019 Aug 2019	**Yijiao Yao**	Master 2 (M.Sc 2)	“Development of the elemental imaging of metal-based nanoparticles in biological tissues by LA-ICP-MS” _ *Codirection P. Télouk (ENS Lyon)*
June 2019 July 2019	**Shérine Bouhazama**	B.Sc (biotechno)	Characterization of nanocompouds of clinical interest for solid malignancies
April 2018 May 2018	**Marion Prono**	B.Sc (Pharma)	“Evaluation of toxicity of metal-based nanoparticles”
April 2015 June 2015	**Souad Adriouach**	Master 1 (M.Sc 1) Biotechno	"Characterization of molecules to overcome resistance to apoptosis and targeted therapies in lung cancers"
April 2015 June 2015	**Tristan Le clainche**	Master 1 (M.Sc 1) Biotechno	"Identification of novel anticancer agents for treating melanoma" *Codirection V. Frachet (EPHE Grenoble)*
Feb 2015 July 2015	**Nana Talvard-Balland**	Master 2 (M.Sc 2) Biotechno	"Biological activity of molecules provided from a high throughput cell-based screening to restore apoptosis in Non-small cell Lung cancer (NSCLC) cells"
Nov 2012 July 2013	**Aline Dorendorf**	Master 2 (M.Sc 2)	"Identification of the molecular effects induced by pyrrolo-pyrimidine derivatives in lung cancer therapy"
April 2012 Aug 2012	**Maëva Ruel**	Master 1 (M.Sc 1)	"Study of lung cancer resistance to gefitinib. Role of mucins"

Medical Students and Hospital Residents (Director)

2025	**Charlotte Gollety**	PharmD	place de la nanomédecine dans la lutte contre le cancer **Ongoing**
2025	**Julie Vaiani**	PharmD	Stratégies de vectorisation in vivo de thérapies géniques et thérapies à base d'ARN en cancérologie : dernières avancées et perspectives. **With honours**
2024	**Donia Saib**	PharmD	Macrophages et Mécanique Stromale dans le PDAC : Focus sur TGFBI et la Signalisation Notch – État des Lieux et Étude Expérimentale. **With honours**
2020-23	**Romane Siest (MD)**	Medical Pathology Specialty Diploma	“Multi-elemental Imaging of Lung Tissues With LIBS”. **Univ. Grenoble Alpes.** *Co-direction O. Stephanov (CHUGA)*

		Codirection	
2017	**Clara Bionda (PharmD)**	Inter-University Diploma (DIU) of Molecular Pathology	“Technical requirements for the validation of BRAF and EGFR mutations testing with digital droplet PCR, for routine investigation in clinical laboratories.” **Univ. Paris-Saclay** **With honours**
2016	**Pauline Gilson**	PharmD *Codirection*	"Evaluation of the anticancer activity of novel pyrrolo-pyrimidine derivative (PP-13) targeting microtubules in resistant non small cell lung cancers". **Univ. Grenoble Alpes** *Co-direction A. Hurbin (IAB)*
2016	**Marion Sabatier-Vincent**	MD *Codirection*	"Multi-elemental imaging of human healthy and tumor skin by LIBS :comparison to standard histology". **Univ. Grenoble Alpes** *Co-direction J. Charles (CHUGA)*
2014	**Céline Martel**	PharmD	“Mechanisms of resistance to vemurafenib”. **Univ. Grenoble Alpes**

Post-doctoral Researchers

2023-	**Aude Belbézier**	Medical Post-doc	Role of metals in Sarcoidosis *Co-direction J. Charles (Univ. Grenoble Alpes)*
2022 -2024	**Vincent Gardette**	Post-doc 2 years	LIBS imaging for Respiratory Medicine. *Co-direction V. Motto-Ros (Univ. Lyon)*
2022	**Sarra Kazi-Tani**	Post-doc	LIBS imaging for Thyroid Cancers
2020 -2021	**Ioana Marquier**	Post-doc	LIBS imaging for Orthopedic surgery (hip arthroplasty and toxicity of metal implants)
2016 -2017	**Samuel Moncayo**	Post-Doc 2 years	“Technical development and analytical validation of LIBS imaging for human paraffin-embedded tissues.” *Co-direction V. Motto-Ros (Univ. Lyon)*

Graduate student evaluation

Sept 2024	**Leonie Badot**	PharmD Thesis	“suivi du marqueur antigène HBs quantitatif chez les patients infectés par les virus de l'hépatite B et hépatite Delta et sur la comparaison de ce marqueur entre les deux méthodes Architect et Atellica” **Univ. Grenoble**. *Internal examiner*

Sept 2024	**Julien Andreani**	PharmD Thesis	“Le séquençage de nouvelle génération en microbiologie: exemples d’applications” **Univ. Grenoble**. *Internal examiner & President of the jury*
March 2024	**Mathieu Gontard**	PharmD Thesis	“Quelles évolutions des pratiques oncogénétiques a la suite de l’élargissement des indications d’analyses brca1/2 constitutionnelles à visée thérapeutique ?” **Univ. Grenoble**. *Internal examiner & President of the jury*
Oct 2023	**Charlotte Lepargneur**	PharmD Thesis	Évaluation des performances de l’examen cytologique du liquide vitré pour le diagnostic des lymphomes intraoculaires : une étude rétrospective au chu grenoble-alpes.. **Univ. Grenoble**. *Internal examiner & Member of the jury*
Oct 2022	**Isabelle Duret**	PharmD Thesis	Effet des phyto-œstrogènes sur le risque de cancer du sein, la mortalité et le risque de récidive : revue de la littérature. **Univ. Grenoble**. *Internal examiner & Member of the jury*
Nov 2021	**Camille Couvert**	PharmD Thesis	“Les voies de réparation de l'ADN comme source de marqueurs prédictifs dans le cancer de l'ovaire”. **Univ. Grenoble**. *Internal examiner & President of the jury*
Sept 2020	**Olivier Msika**	MD Thesis	"Analyse de l'ADN tumoral circulant, comme marqueur prédicitif de récidive post-transplantation hépatique pour carcinome hépatocellulaire". **Univ. Grenoble**. *Internal examiner & Member of the jury*
Nov 2018	**Lucille Capin**	PharmD Thesis	"Feuillets épithéliaux de muqueuse jugale dans le traitement du déficit en cellules souches limbiques totale et bilatéral : mise en place d’un essai clinique. **Univ. Lyon**. *External examiner & Member of the jury*
Sept 2018	**Julien Pagnier**	PharmD Thesis	"Organisation de la valorisation et du transfert de technologies dans le domaine pharmaceutique en France". **Univ. Grenoble**. *Internal examiner & Member of the jury*
April 2015	**Mehdi Brahmi**	MD Thesis	"KIT exon 10 variant (c1621 A>C) germ line characteristics as predictor of GIST Patient outcome". **Univ. Grenoble**. *Internal examiner & Member of the jury*
Nov 2013	**Paul Vilquin**	PharmD Thesis	"Les thérapies ciblées dans le cancer du sein métastatique" **Univ. Lyon**. *External examiner & Member of the jury*
June 2011	**Bruno Revol**	PharmD Thesis	"Potentiel des cellules dendritiques plasmacytoïdes dans l’immunité anti-tumorale : nature de la réponse T induite par des pDC activées par différents ligands TLR. Étude de candidats adjuvants au vaccin immunothérapeutique". **Univ. Grenoble**. *Internal examiner & Member of the jury*

Complementary Training -

2024 Laser - Level 2 (safety and security training)
2019 Good Clinical Practice (GCP)

2015 Management (Grenoble)
2013 Bio-informatics for Next Generation Sequencing (Lille)
2012 Fast reading (Grenoble)
2011 Conflict management (Grenoble)
2010 Proteomics (CNRS - Paris)
2009 Capillary electrophoresis (Paris)
2008 Small animal imaging (Oslo, Norway)
2007 Level 1 animal experimentation accreditation (Univ. Grenoble)

Professional associations (active memberships) -

Société Française de Biologie Clinique (**SFBC**), European Society for Molecular Imaging (**ESMI**), Société Française de Nanomédecine - French Society for Nanomedicine (**SFNano**), Société de Biologie Cellulaire Française (**SBCF**) ; de l'Association Biologie et Cancer (ABC), de l'Association des anciens internes en pharmacie des hôpitaux de Grenoble (AAIPHG)

Past Affiliations (past memberships) -

Groupe Francophone de Cytogénomique Oncologique (GFCO),

SPORTING ACHIEVEMENTS (selection) -

Climbing & Mountaineering

Mont-Blanc (traversée royale), Dent du Géant, Aiguille Dibona (Directe Madier), Arête Bionnassay, Arêtes de Rochefort, Dent Blanche, Traversée de la Meije, Allalinhorn

Ultra Trails

Finisher "Échappée Belledonne 2017", Grand Duc Chartreuse (3x), Grand raid 73

Caving

Cuves Sassenage (siphon terminal), Traversées de la dent de Crolles (P40-Glaz, Glaz-Annette, Glaz-Guiers, Guiers-Guiers), Gournier

Canyoning

> 50 canyons in Europe (Ecouges, Ruzand, Gorgette et Craponoz, Iragna integral, Cresciano integral, Pontirone integral, Lodrino integral, Oules de Fressinières, Gorg Blau+Sa Fosca, Froda, Cormor)

Paragliding