

Sandrine GERBER, Prof. Dr. HDR<https://orcid.org/0000-0002-6519-2782>

Birth name: LEMAIRE-AUDOIRE
 Date of birth: May 21st 1971
 Nationality: Swiss and French
 Civil status: married (1999)
 Two children (2000, 2004)

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 Biomaterials
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**PROFESSIONAL APPOINTMENTS****2007 –****Deputy Director**

Institute of Chemical Sciences and Engineering (ISIC), EPFL, Switzerland

Main missions

Manager of ISIC core facility platforms (40 FTE)
 Participation in the general and scientific administration of the institute
 Participation in the scientific administration of ISIC: preparation of the
 Support to the ISIC Director of the ISIC: advice, implementation of decisions,
 transmission of information; participation in Board and Council sessions and in
 commissions; faculty affairs.
 Planification of laboratory infrastructure for ISIC research units and platforms

2014 –**Adjunct Professor**

Group for Functionalized Biomaterials (SCI-SB-SG)
 Institute of Chemical Sciences and Engineering (ISIC), EPFL, Switzerland

Research domains

Polymeric and lipidic nanocarriers for gene delivery
 Multifunctional nanoparticles for theranostic applications
 DNA biosensors for viral screening
 Novel chemical pathways for polymer engineering

2006 – 2014**Senior Scientist**

Institute of Chemical Sciences and Engineering (ISIC), EPFL, Switzerland

2001 – 2005**First assistant** (2001-2003) and **scientific adjunct** (2003-2005)

Laboratory of Glycochemistry and Asymmetric Synthesis, ISIC, EPFL, Switzerland
 Laboratory Head: Prof. Pierre Vogel

1998 – 2001**Maitre-assistante**

Institute of Organic Chemistry, University of Lausanne, Switzerland
 Group of Prof. Pierre Vogel

1996 – 1998**Post-doctoral fellow**

Institute of Organic Chemistry, University of Lausanne, Switzerland
 Group of Prof. Pierre Vogel

EDUCATION**2003****Habilitation to direct research** (HDR)

Sorbonne University (formerly University Pierre et Marie Curie), Paris, France

1993-1996**PhD thesis**

Sorbonne University (formerly University Pierre et Marie Curie), Paris, France.
 Laboratoire de synthèse sélective organique et produits naturels, Ecole Nationale Supérieure
 de Chimie de Paris, Paris, France. Supervisor: Prof. Jean-Pierre Genêt

1993**Master degree** (formerly Diplôme d'études approfondies) in organic chemistry

Sorbonne University (formerly University Pierre et Marie Curie), Paris, France

1990-1993**Diploma of chemical engineer**, promotion 1993.

Chimie ParisTech (formerly Ecole Nationale Supérieure de Chimie de Paris), Paris, France

DISTINCTIONS and AWARDS

PhD grant from the Ministry of Research and Education, France, **1993-1996**

Prize Eugène Schueller 1997 (for PhD thesis work)

Prize Dufour 2005 (Prize Claude Dufour for prospective organic chemistry)

Werner Prize 2010 (Swiss Chemical Society)

Special mention in recognition of exceptional quality of pedagogic competencies in the teaching of basic sciences, given by the Direction of the School of Biology and Medicine (UNIL), **2013**

Excellence in Teaching Award 2018, Section of Chemistry and Chemical Engineering, EPFL

Fellow of International Association of Advanced Materials, in recognition for the contribution to "Advancement of Materials to Global Excellence"

LANGUAGES

French	Mother tongue
English	Fluent (oral and written)
Spanish	Notions

PARTICIPATION in BORDS and COMMITTEES

Since 2006	Member of the Council of the Institute of Chemical Sciences and Engineering (ISIC, EPFL)
Since 2007	Member of the Council of the School of Basic Sciences (FSB, EPFL)
Since 2014	Member of the EDCH Program Committee (EPFL, Doctoral Program)
Since 2021	Member of the EPFL School Assembly
Since 2022	President of the EPFL Workshops Interfaculty Coordination Committee
Since 2024	Member of the ILOT Operating Committee
2007-2023	Member of the Board of the Division of Fundamental Research, Swiss Chemical Society
2012-2021	Member of the Board of Directors, Swiss Chemical Society
2014-2015	Member of the Commission for the succession at the Head of the School of Biology, UNIL
2016	Member of the Search Committee for the Dean of the School of Basic Sciences, EPFL
2019-2021	Member of the Scientific Evaluation Committee in the panel "Technologies for Health" for the French National Research Agency
2020	Member of the Review Board of the DWI – Leibniz Institute for Interactive Materials, Aachen, Germany
2021, 2023	Member of the Review Panel <i>Biomaterials, biotechnology, soft matter, and biological physics and chemistry</i> for the Academy of Finland's Research Council for Natural Sciences and Engineering
2022	Chair of the Review Panel <i>Biomaterials, biotechnology, soft matter, and biological physics and chemistry</i> for the Academy of Finland's Research Council for Natural Sciences and Engineering
2022	Member of the Joint Search Committee for PATT in Computational Cancer Research and Cancer Chemical / Bio-engineering, School of Life Sciences, ISREC, EPFL.
2021-2023	Member of the Working Group on Inclusive Governance, EPFL
2022-2023	Member of the EPFL Campuses Energy Commission
2023-2024	Member of the Sounding Board of the Masterplan for the renovation of EPFL buildings and campuses densification

TEACHING ACTIVITIES

Current teaching

Course of **Organic Chemistry**, BA1, Biology and Pharmacy students, 70 hours, > 350 students

Course of **Asymmetric Synthesis and Retrosynthesis**, BA6, Chemistry students, 28 hours, 15 students

Selected past teaching

Course of **General Chemistry**, BA1, Life Sciences students, BA1, 42 hours

Course **Atoms, Ions, Molecules and Functions**, BA2, Chemistry and Forensic Sciences students, 56 hours

Practical of **Organic Chemistry**, BA3, Chemistry students, 224 hours

RESEARCH FUNDING RECORDS – LAST 10 YEARS

SNSF Research Grant CR23I2_152974	Interdisciplinary Project <i>Functionalized polymeric hydrogels for cell immobilization</i>	01.05.2024 - 28.02.2018 CHF 507'561
CTI Grant 17309.2 PFLS-LS	Innovation Project <i>Microencapsulated porcine hepatocytes for acute liver disease: development of the cell therapy product</i>	01.12.2014 - 31.05.2016 CHF 381'399
Interreg V France-Suisse NANOFIMT	Collaborative Project <i>Nanoparticules harmoniques fonctionnalisées pour l'imagerie ultra-sensible et le théranostique</i>	01.10.2015 – 30.09.2018 CHF 290'000
SNSF Research Grant 310030E-164250	Collaborative Project (France-Switzerland) <i>New standardized and functionalized microcapsules: Applications to Type 1 Diabetes Cell Therapy</i>	01.02.2016 – 31.01.2019 CHF 491'038
Insuleman Foundation	<i>Functionalization of alginate-based hydrogels to prevent fibrotic overgrowth in cell transplantation therapy</i>	01.05.2017 – 31.12.2018 CHF 62'756
Enable Program	<i>Development of alginate-based hydrogels for porcine islets microencapsulation – Scaling-up for pre-clinical investigation</i>	01.03.2017 – 31.08.2017 CHF 50'000
SNSF-Sinergia CRSII5_180257	Collaborative Project <i>Development of novel synthetic gene transfer vectors for metabolic liver therapy</i>	01.07.2018 – 31.12.2022 CHF 1'700'372
Interreg V France-Suisse OncoNanoScreen	Collaborative Project <i>Plateforme in vitro de criblage de nanothérapies ciblant le cancer du poumon</i>	01.01.2019 – 31.12.2020 CHF 193'706
Insuleman Foundation	<i>Treatment of type 1 diabetes: Cell therapy with encapsulated porcine cells in multifunctional alginate-based hydrogels</i>	01.10.2019 – 31.12.2020 CHF 60'000
Industrial Grant Beta-Cell NV	<i>Alginate derivatives for the microencapsulation of cells</i>	01.06.2019 - 01.08.2020 CHF 22'000
Innosuisse 38934.1 IP-LS	Innovation Project – DeMoViS <i>Automatic Device for Mosquitos Viral Screening via DNA-based Biosensors</i>	01.09.2020 – 31.03.2024 CHF 753'572
SNSF – NRP78 4078P0_198265	Collaborative Project <i>Development of a microfluidic platform for real-time detection of SARS-CoV-2 virus based on multifunctional silica membrane biosensors</i>	01.10.2020 – 31.03.2023 CHF 1'098'174
Industrial Grant MedXCell	<i>Monoclonal antibodies packing, immobilization and functionalisation</i>	15.01.2021 - 31.05.2022 CHF 140'000
SNSF Research Grant 200021E_205745	Collaborative Project (France-Switzerland) <i>DARE – Deep and Resolved</i>	01.01.2022 – 31.12.2025 CHF 600'845
Industrial Grant MedXCell	<i>Trehalose Derivatives for Cell Preservation Applications</i>	01.10.2022 - 30.09.2023 CHF 134'862
Industrial Research Collaboration CellCaps SA	<i>Development of hybrid hydrogels intended for pre-clinical evaluation in the context of acute liver failure and type I diabetes</i>	01.02.2023 - 31.05.2024 CHF 179'200
Industrial Research Collaboration Debiopharm	<i>Development of siRNA therapeutics for cancer treatment</i>	15.04.2023 - 14.04.2027 CHF 353'298.
Industrial Research Collaboration SICPA	<i>Formulation of DNA based markers for oil tagging applications.</i>	01.10.2023 - 30.11.2024 CHF 188'608
SNSF-Sinergia CRSII-222794	Collaborative Project <i>Multifunctional lipid nanoparticles as carriers for DNA-therapeutics: Treatment of a genetic liver disease</i>	01.01.2024 – 31.12.2027 CHF 2'293'417
Industrial Research Collaboration TIBIO	<i>Exploration of new ways for ammonia valorization based on organic chemistry and biotechnology approaches</i>	01.09.2024 - 31.08.2028 CHF 473'301
Innosuisse 118.521 IP-ENG	Innovation Project – DNA Guard <i>DNA encapsulation in polymeric-based nanomaterials for authentication and tracking</i>	01.01.2025 - 31.12.2026 CHF 296'387

SCIENTIFIC SUPERVISION

SUPERVISION of DOCTORAL STUDENTS

Florence Popowycz EPFL TH N° 2866	1999 - 2003	Synthesis of long chain aminopolyols and pyrrolidine derivatives. The discovery of new glycosidase inhibitors.
Hélène Fiaux EPFL TH N° 3793	2003 - 2007	Development of new anticancer agents based on α -mannosidase inhibition.
Gérald Coste EPFL TH N° 3800	2003 - 2007	New efficient synthetic routes toward functionalized polyketides. Application to the preparation of analogues of bioactive natural products.
Sylvain Favre EPFL TH N° 4383	2005 - 2009	New efficient synthetic strategies towards the AB and CD spiroketal fragments of spongistatins and analogues.
Pascal Miéville EPFL TH N° 5229	2009 - 2011	Chemical developments in DNP-NMR.
Françoise Borcard EPFL TH N° 5643	2009 - 2013	Chemical functionalization of bioceramics for the development of bone implants.
Christophe Bovigny EPFL TH N° 6310	2010 - 2014	New models and techniques to simulate realistic biological membranes.
Solène Passemard EPFL TH N° 6248	2010 - 2014	Functionalization of nanoparticles for targeted cancer imaging and diagnosis.
Davide Staedler EPFL TH N° 6209	2010 - 2014	Development and evaluation of new nanoprobe for cancer cell targeting and imaging.
François Noverraz EPFL TH N° 8949	2014 - 2018	Development of functionalized alginate-based hydrogels to reduce fibrosis in the transplantation of microencapsulated cells.
Jérémy Vuilleumier EPFL TH N° 7330	2015 - 2019	Functionalization of second harmonic generation nanoparticles for theranostic applications.
Raphaël De Matos EPFL TH N° 7650	2015 - 2019	Surface functionalization of metal oxide nanoparticles for targeted cancer imaging.
Luca Szabó EPFL TH N° 7778	2016 - 2020	Multifunctional hybrid alginate-based hydrogels for cell immobilization.
Laura Nicolle EPFL TH N° 9821	2018-2022	Engineering of chitosan-based derivatives for non-viral gene delivery.
Adrian Gheata EPFL TH N° 10626	2020-2024	Functionalization of harmonic nanoparticles for drug release and multimodal imaging applications.
Perrine Robin EPFL TH N° 11030	2020-2024	Surface functionalization strategies for optimal DNA conjugation on sensing surfaces for viral detection.
Alessandra Spada Ongoing	Started 2021	in Development of multifunctional harmonic based nanoconjugate for multiscale imaging and theranostic applications.
Simon Dumolard Ongoing	Started 2023	in Development of polymeric nanocarriers for siRNA therapeutics delivery.
Pauline Skigin Ongoing	Started 2024	in Development of multifunctional lipid-based nanocarriers for plasmid DNA delivery to the liver.
Mylène Soudani Ongoing	Started 2024	in Valorization of ammonia for the production of polymers and rare sugars.

SUPERVISION of POSTDOCTORAL COLLABORATORS

Ana T. Carmona	2004 – 2005	Horacio Comas Blanco	2009 – 2011
Lucia Ucnova	2012 – 2013	Vladislav Semak	2013 - 2015
Solène Passemard	2014 – 2016	Céline Journot	2019 - 2021
François Noverraz	Since 2021	Alireza Kavand	Since 2022
Anna Poryvai	Since 2022		

SUPERVISION of MASTER STUDENTS

1997 – 2001	2 Master theses 2 Master internships
2002 – 2006	3 Master theses 5 Master semester projects
2007 – 2011	13 Master theses 11 Master semester projects 5 Master internships
2012 – 2016	11 Master theses 9 Master semester projects
2017 - 2021	9 Master theses 3 Master semester projects 4 Master internships
2022 -	4 Master theses 8 Master semester projects

SUPERVISION of LABORATORY ASSISTANT TRAINEES (APPRENTICES in CHEMISTRY)

Cécile Glanzmann	1998 - 2000	Catherine Schütz	2000 - 2003
Vincent Pilloud	2010	Susana Bozic	2011
Joanne Cugny	2012 - 2013	Guillaume Schneiter	2012-2013
Gwendoline Frautschi	2013 - 2014	Camille Rime	2014 - 2015
Florence Trolliet	2015 – 2016	Anthony Brügger	2016 - 2017
Lucas Mayoraz	2017 – 2018	Yannick Wilson	2018 - 2019
David Vuagniaux	2019 – 2020	Elias Troxler	2020 - 2021
Amélie Félix	2021 – 2022	Laetitia Freymond	2022 - 2023
Selena Jungo	2023 – 2024	Anna Piceni	Since 2024

OUTREACH ACTIVITIES

Supervision of college students during summer scientific camps at EPFL	Since 2010
Participation to the film <i>Les sciences, ça m'intéresse</i> for college students	2010
Participation to the Study Week "Chemistry & Materials Science" Coordinated by the Foundation <i>Science et Jeunesse</i>	2020, 2022, 2024
Participation in the Round Table <i>The contagious passion for basic research and teaching</i> EPFL Open Days 2023	29-30.04.2023
Contribution to the film <i>Microfluidic platform for real-time detection of SARS-CoV-2</i> NRP78 Media centre, https://youtu.be/xDb30Dj6oZo	2023-2024
Supervision of maturity projects	Since 2012

SERVICE ACTIVITIES**ORGANIZATION of SCIENTIFIC CONFERENCES**

CUSO Summer School in Organic Chemistry | Target Synthesis: Challenges, Strategies and Methods
Villars-sur-Ollon, Switzerland, 2-6 September, 2007. 80 participants.

Swiss Chemical Society Fall Meeting | 2009, 2011, 2013, 2015, 2018
EPFL, Lausanne, Switzerland. 800 to 900 participants.

Winter School | Bioimaging, Sensing and Therapeutic Applications of Nanomaterials
Villars-sur-Ollon, Switzerland, 3-6 March, 2013. 50 participants.

REVIEWING and EXPERTISE ACTIVITIES*Reviewer for scientific journals*

Angewandte Chemie International Edition, Organic Letters, The Journal of Medicinal Chemistry, The European Journal of Organic Chemistry, Tetrahedron Letters, Bioscience Reports, The European Journal of Medicinal Chemistry, Chemistry – A European Journal, ChemMedChem, Letters in Organic Chemistry, ACS Nano, Journal of Polymer Engineering, Xenotransplantation, Macromolecules, ACS Applied Materials & Interfaces.

Reviewer for funding agencies

Top Consortium for Knowledge and Innovation - New Chemical Innovations (TKI-NCI) of the Netherlands Organisation for Scientific Research (NWO).

Swiss National Science Foundation in the frame of the SCOPES program
Swiss National Science Foundation for basic research funding (Division II)

Member of PhD thesis evaluation committees

2007 – 2011	10 thesis jury committees
2012 – 2016	25 thesis jury committees
2017 - 2021	25 thesis jury committees
2022 -	26 thesis jury committees

PRESENTATIONS

CONTRIBUTED TALKS

1. Réactions de Déprotection Chimiosélective à l'Aide de Catalyseurs Organopalladiés en Milieu Aqueux *Congrès de la Société Française de Chimie 1994*, Lyon, France, 26-30 September 1994.
2. Chimie des Groupes Protecteurs à l'Aide du Palladium. Développements Récents en Synthèse Organique Fine. *GECOM-CONCOORD 95*, Saint-Jacut de la Mer, France, 28 May-1 June 1995.
3. Total Synthesis of Long Chain Sugars. *Fall Meeting of the Swiss Chemical Society*, Lausanne, Switzerland, 15 October 1997.
4. Total Asymmetric Synthesis of the C₂₉-C₅₁ Fragment of Spongistatin 1. *OMCOS 10*, Versailles, France, 18-22 July 1999.
5. Toward the Total Synthesis of Sporeamicin A and Analogues. *Fall Meeting of the Swiss Chemical Society*, Lausanne, Switzerland, 12 October 2000.
6. An efficient combinatorial approach for the discovery of glycosidase inhibitors. *Eurotron Glycoscience Conferences*, EGC-5, 2-6 June 2003.
7. An expeditive asymmetric and non-iterative synthesis of long chain polyols. Application to the preparation of precursors of the spiroketal subunits of spongistatins. *Fall Meeting of the New Swiss Chemical Society*, Lausanne, Switzerland, 09 October 2003.
8. New asymmetric synthesis of polyketides and functionalized spiroketals. *Fall Meeting of the Swiss Chemical Society, Lausanne, Switzerland*, 13 October 2005.
9. Functionalized pyrrolidine inhibitors of α -mannosidases as new anti-cancer agents. *1st European Chemistry Congress*, Budapest, Hungary, 27-31 August 2006.
10. Efficient routes for the discovery of new RNA binders. *Fall Meeting of the Swiss Chemical Society*, Lausanne, Switzerland, 12 September 2007.
11. Efficient routes toward the discovery of new RNA binders. *2nd European Chemistry Congress*, Torino, Italy, 16-20 August 2008.
12. Multifunctional nanoprobe for imaging. *Comité de programmation, Programme Interreg IVA France-Suisse*, EPFL, Lausanne, Switzerland, 25 November, 2010.
13. Combining targeting agents and multifunctional linkers for conjugation to nanoparticles. *NAMDIATREAM General Assembly*, Trinity College, Dublin, Ireland, 27-28 June, 2011.
14. Chemical functionalization of second harmonic generation nanocrystals for early cancer diagnosis. *NAMDIATREAM General Assembly*, Rome, Italy, 21-22 June 2012.
15. Functionalization of Biomaterials for Bone Implant Applications. *GECO 53*, Sévrier, France, 26-31 August, 2012.
16. NanoTools for Diagnostic and Imaging by Second Harmonic Generation. *NAMDIATREAM General Assembly*, Nikon France SAS, Champigny-sur-Marne, France, 26-28 June, 2013.
17. Functionalized harmonic nanoparticles for cancer diagnosis and imaging. *NAMDIATREAM General Assembly*, University of Champagne-Ardennes, Reims, France, 26-27 June 2014.
18. DNA-biosensors based on functionalized glass slides for highly sensitive detection of viruses from saliva. *MSE Congress 2024 – Materials Science and Engineering*, Darmstadt, Germany, 24-26 September 2024.

INVITED TALKS

1. Total Asymmetric Synthesis of Natural Products of Biological Interest and Analogues. *Serono Pharmaceutical Research Institute*, Plan-les-Ouates, Switzerland, 4 November 2002.
2. Nouvelles méthodologies de synthèse asymétrique. Application à la synthèse d'aminopolyols à longue chaîne et de fragments de produits naturels d'intérêt biologique. *Quinzièmes entretiens du Centre Jacques Cartier*, Lyon, France, 9-11 December 2002.
3. New efficient strategies for the asymmetric synthesis of long chain polyketides and analogues. *Department of Organic Chemistry, University of Geneva*, Geneva, Switzerland, 10 November 2005.
4. New strategies for the synthesis of polyketide derivatives of biological interest. *ERA-Chemistry Workshop*, Madrid, Spain, 13-15 March 2006.
5. New synthetic approach toward the preparation of polyketides and analogues of biological interest. *University Joseph Fourier*, Grenoble, France, 09 November 2006.
6. Design and synthesis of potent α -mannosidase inhibitors: toward the development of new cancer cells growth inhibitors. *Geneva Research Center, MerckSerono*, 19 September 2007.
7. Design and synthesis of new ligands for biopolymers: RNA binders and glycosidase inhibitors. *LONZA*, Visp, Switzerland, 26 November, 2009.
8. Werner Prize lecture: Design and synthesis of bioactive molecules and potential drug candidates. *Spring Meeting 2010 of the Swiss Chemical Society*, University of Bern, Bern, Switzerland, 10 February, 2010.
9. Inhibitors of Fibroblast Activation Protein alpha for the labeling of cancer cells. *Workshop on Translational Oncology for novel nanoparticle-based diagnostic toolkits*. Göttingen, Germany, 11 June, 2013.
10. Chemical Functionalization of Nanomaterials with Small Targeting Agents for Cancer Diagnosis and Imaging. *3rd P3AGI Imaging Workshop*, Göttingen, Germany, 12-13 June, 2013.
11. Theranostics applications of harmonic nanoparticles. *Debiopharm*, Lausanne, 25 November, 2013.
12. Functionalization of Biomaterials for Bone Implant Applications. *Nano Bridging Molecules*, Gland, 12 December, 2013.
13. Functionalized nanoparticles targeting tumor biomarkers for the labelling of cancer cells. *7th Imaging in Drug Discovery Conference*, Dublin, 7-8 October, 2014.
14. Nanomaterials for biomedical research: design, functionalization and applications. *International Summer School on Organic Synthesis "A. Corbella" – ISOS 2016*, Gargnano, Italy, 12-16 June, 2016.
15. New hybrid hydrogels for cell microencapsulation. *13th Swiss Experimental Surgery Symposium*, Fribourg, Switzerland, 12-13 January, 2017.
16. Multifunctional harmonic nanoparticles for targeted cancer imaging. *3rd International Conference "Current Trends of Cancer Theranostics"*, Pakruojis, Lithuania, 25-29 June 2017.
16. Functionalized harmonic nanoparticles for biomedical applications. *Christmas Chemistry Symposium*, University of Basel, Switzerland, 1 December, 2017.
17. Functionalized harmonic nanoparticles for targeted bio-imaging and theranostic applications. University of Leeds, UK, 17 July, 2018.
18. Functionalized Harmonic Nanoparticles for Bioimaging, Cell Tracking and Drug Delivery Applications. *10th International Congress Nanotechnology in Medicine & Biology – BioNanoMed 2019*, University of Graz, Austria, 15-17 April, 2019.
19. Multifunctional Cross-Linked Alginate Based Hydrogels for Cell Transplantation. *Frontiers in Polymer Chemistry and Biopolymer*, Rome, Italy, 18-19 November, 2019.

20. Dual ionic-covalent alginate based hydrogels presenting drug eluting properties for cell transplantation applications. *9th International Conference on Biomedical Engineering and Biotechnology (ICBEB 2020)*, Suzhou, China, 15-18 November, 2020.
21. Engineering of multifunctional (nano)biomaterials toward biomedical applications as theranostic nanoprobes and cell transplantation hydrogels. University of Basel, Switzerland, 2 December, 2020.
22. Fellow Lecture of the International Association of Advanced Materials. Functionalized Harmonic Nanoparticles for Bioimaging, Cell Tracking and Controlled Drug Delivery. *Advanced Materials Lecture Series 2020*, 10 December, 2020.
23. Multifunctional Harmonic Nanoparticles for Cell Tracking and Theranostic Applications. *7th International Meeting of Nanomaterials and Nanotechnologies (NanoOstrava-21)*, Ostrava, Czech Republic, 17-20 May, 2021.
24. Multicomponent Dual Ionic-Covalent Alginate-Based Hydrogels for Cell Transplantation Applications. *Seminars of the Louvain Drug Research Institute*, Brussels, Belgium, 29 November, 2021.
25. Surface Functionalization of Harmonic Nanoparticles for Multimodal Imaging and Drug Release Applications. *EuroTech Seminar Series on Chemistry & Chemical Engineering*, 01 June, 2022.
26. Functionalized Harmonic Nanoparticles for Controlled Drug Release and Targeted Bioimaging Applications. *2nd Global Summit and Expo on Nanotechnology and Nanomaterials (GSENN2022)*, Copenhagen, Denmark, 13-15 June, 2022.
27. Hard and Soft Materials for Therapeutics Delivery and Theranostics Applications. *Exploratory Workshop Novartis*, EPFL, Lausanne, Switzerland, 25 January, 2023.
28. Multifunctional Harmonic Based Nanoparticles for Multimodal Bioimaging Applications and Drug Delivery. *Lab-on-chip for cancer detection, diagnosis and treatment*, Besançon, France, 21 March, 2023.
29. Multifunctional Harmonic Nanoparticles for Targeted Multimodal Imaging and Cancer Theranostic Applications. *BioNanoMed2023*, Graz, Austria, 12-14 April, 2023.
30. Functionalized Harmonic Nanoparticles for Bioimaging and NIR-Light Triggered Drug Delivery. *The 9th Annual International Symposium of Drug Delivery Systems*, Amsterdam, the Netherlands, 12-14 July, 2023.
31. Multifunctional Polysaccharide-Based Polymers for Cell Transplantation and Gene Delivery Applications. *Colloquium "Self-Assembled Functional Materials"*, Mulhouse, France, 30-31 May, 2024.
32. Transplantation de cellules productrices d'insuline pour le traitement du diabète de type I. *Lions Club*, Geneva, 15 October, 2024.

LIST OF PUBLICATIONS

ARTICLES in PEER-REVIEWED JOURNALS

- 1 Genêt, J.- P.; Blart, E.; Savignac, M.; Lemaire-Audoire, S.; Bernard, J.- M. A General and Simple Removal of Allyloxycarbonyl Protecting Group by Palladium-Mediated Reactions Using Nitrogen and Sulfur Nucleophiles. *Synlett* **1993**, 9, 681-683.
<https://www.thieme-connect.com/products/ejournals/abstract/10.1055/s-1993-22570>.
- 2 Genêt, J.- P.; Blart, E.; Savignac, M.; Lemeune, S.; Lemaire-Audoire, S.; Paris, J.- M.; Bernard, J.- M. Practical Palladium-Mediated Deprotective Method of Allyloxycarbonyl Groups in Aqueous Media. *Tetrahedron* **1993**, 50, 497-503.
<https://www.sciencedirect.com/science/article/pii/S0040402001807717>
- 3 Lemaire-Audoire, S.; Blart, E.; Savignac, M.; Pourcelot, G.; Genêt, J.- P.; Bernard, J.- M. Selective Deprotection Method Using Palladium Water Soluble Catalysts. *Tetrahedron Lett.* **1994**, 35, 8783-8786.
<https://www.sciencedirect.com/science/article/pii/S0040403900784978>
- 4 Lemaire-Audoire, S.; Savignac, M.; Genêt, J.- P. Selective Deprotection of Allyl Amines Using Palladium. *Tetrahedron Lett.* **1995**, 36, 1267-1270.
<https://www.sciencedirect.com/science/article/pii/004040399500003U>
- 5 Amatore, C.; Blart, E.; Genêt, J.- P.; Jutand, A.; Lemaire-Audoire S.; Savignac, M. New Synthetic Applications of Water Acetate Pd/TPPTS Catalyst Generated *in situ*. Evidence for true Pd(0) Valent Species Intermediate. *J. Org. Chem.* **1995**, 50, 6829-6839.
<https://pubs.acs.org/doi/abs/10.1021/jo00126a037>
- 6 Lemaire-Audoire, S.; Savignac, M.; Dupuis, C.; Genêt, J.- P. π -Allyl Palladium Methodology for Selective Deprotection of Allylamines. Practical Synthesis of Secondary Amines. *Bull. Soc. Chim. Fr.* **1995**, 132, 1157-1166.
- 7 Lemaire-Audoire, S.; Savignac, M.; Genêt, J.- P. A New Strategy for the Synthesis of Selectively Triprotected Spermidine and Norspermidine Derivatives. *Synlett* **1996**, 75-78.
<https://www.thieme-connect.de/products/ejournals/abstract/10.1055/s-1996-5321>
- 8 Lemaire-Audoire, S.; Savignac, M.; Dupuis, C.; Genêt, J.- P. Intramolecular Heck-type Reactions in Aqueous Medium. A Dramatic Change in Regioselectivity. *Tetrahedron Lett.* **1996**, 37, 2003-2006.
<https://www.sciencedirect.com/science/article/pii/0040403996002535>
- 9 Lemaire-Audoire, S.; Savignac, M.; Genêt, J.- P.; Pourcelot, G.; Bernard, J.- M. Chemoselective Removal of Allylic Protecting Groups Using Water-Soluble Pd(OAc)₂/TPPTS Catalyst. *J. Mol. Catal.* **1997**, 116, 247-258.
<https://www.sciencedirect.com/science/article/pii/S138116996001409>
- 10 Lemaire-Audoire, S.; Savignac, M.; Blart, E.; Bernard, J.M.; Genêt, J.- P. Synthesis of Peptides Using Selective Removal of Allyloxycarbonyl Protecting Groups in Aqueous Medium. *Tetrahedron Lett.* **1997**, 38, 2955-2958.
<https://www.sciencedirect.com/science/article/pii/S0040403997005352>
- 11 Lemaire-Audoire, S.; Vogel, P. Total Synthesis of the C₃₅-C₄₅ F-Ring Fragment of Spongistatins. *Tetrahedron Lett.* **1998**, 39, 1345-1348.
<https://www.sciencedirect.com/science/article/pii/S0040403900002379>
- 12 Lemaire-Audoire, S.; Vogel, P. Total Asymmetric Synthesis of Ethyl D-ido-4-heptulosuronate Derivatives Starting from Diethyl-4-oxopimelate. *Tetrahedron: Asymmetry* **1999**, 10, 1283-1293.
<https://www.sciencedirect.com/science/article/pii/S0957416699001202>
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