

Florent Allais

Prof. Dr. Habil. Dir.

Director of the Chair IAB

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Present & previous positions

- Oct. 2012 - Present** - **Full Professor & Director of the Chair IAB**, at Chaire Agrobiotechnologies Industrielles (ABI) – AgroParisTech, Pomacle, France
- Sept. 2007 – Sept. 2012** - **Junior Scientist Chargé de Recherche 2^{ème}/1^{ère} classe**, at INRA. Versailles. France
- Oct. 2006 – Aug. 2007** - **Post-doctoral fellow** (Dr. Boivin) at ICSN, Gif-sur-Yvette, France
- Jun. 2004 – Jul. 2006** - **Post-doctoral fellow** (Prof. Cossy) at ESPCI, Paris, France
- Aug. 2000 – May. 2004** - **Graduate student – Teaching/Research assistant** (Prof. Enholm) at U. of Florida, Gainesville, FL USA
- Oct. 1999 – Jul. 2000** - **DEA internship (M.Sc.)** (Prof. Landais) at Université Bordeaux I, Talence, France

Education

- 2013** - **Habilitation (HDR)**, Université Paris XI. Orsay, France
- 2000 - 2004** - **Ph.D.** (Summa Cum Laude – GPA 4.0) U. of Florida, Gainesville, FL USA
- 1999 - 2000** - **M.Sc. in Chemistry DEA** (with Honors), U. Bordeaux I - Talence, France
- 1995 - 1999** - **B.Sc. DEUG/Licence/Maîtrise de Chimie** (with Honors), U. Bordeaux I - Talence, France

Research topics

- **Lignocellulosic biomass valorization using white biotechnologies, green chemistry and Chemical/process engineering:** bio-based monomers/oligomers/polymers, synthons, ingredients, surfactants, flavor and fragrances, bioactive (macro)molecules (e.g., antioxidant, antimicrobial) ...
- **Total synthesis of biologically relevant phenolics**

Honorary positions

2013 Visiting Professor, BIOPRIA – BAMl, Monash University, Clayton, VIC (Australia)

Contribution to scientific evaluation

- Appointed member at the Scientific Advisory Board of Novasep ☐ 2017-present
- Member of the Commission of « Biomolécules » IAR Cluster ☐ 2013-present
- Member of the Scientific and Steering councils of the SFR Condorcet ☐ 2013-present
- Associate Editor of Frontiers in Chemistry ☐ 2015-present
- Scientific expertise and evaluation: ANR (France), NWO (The Netherlands), CFREF (Canada)

Involvement in structuring and multidisciplinary research projects

- Principal Investigator of an ANR PRCE project (SINAPUV, 2017-2021) (Partners: UMR MICALIS, INSERM Montpellier, Abolis SA, Givaudan Active Beauty)
- Investigator of an INTERREG project (O2016-2020) (Partners: U. Mons, KUL, Ghent U., U. Lille, URCA)
- Principal investigator of a research contract with Circa Group (Australia) (2013-present) (4 patents)
- Principal investigator of a research project with Saint-Gobain Recherche (CIFRE 2012-2015) within the Institut Carnot 3BCAR (4 patents)

International research/teaching activities

Founder of a co-advised doctoral program between AgroParisTech and the University of Florida

Student/(post-)doctoral supervision

10 Ph.D. students (3 co-supervised with Profs Miller and Stewart from the University of Florida), 5 post-doctoral fellows, more than 40 M.Sc. students

Professional and scholarly associations

- **ACS** - American Chemical Society (from 2011)
- **RSC** - Royal Society of Chemistry (from 2015)
- **SCF** - Société Chimique de France (from 2013)
- **GFP** - Groupement Français d'études et applications des Polymères (from 2013)
- **SMI** - Society for Molecular Imprinting (from 2003)
- **GP** - Groupe Polyphénols (from 2014)

Awards and Honors

- **MacLaughlin Dissertation Fellowship** – University of Florida (2003)
- **Teaching award in Organic Chemistry** – University of Florida (2002)

Summary :

- 14 patents
- 54 publications in peer-reviewed journals (H-factor : 15)
- 5 invited conferences, 11 invited seminars
- 15 oral communications & more than 35 posters

Patents (published) :

[1] **Procédé de transformation de la lévoglucosénone en 4-hydroxyméthylbutyrolactone et 4-hydroxyméthylbuténolide en absence de solvant et de catalyseur**

Allais,* F. et al. WO2018007764 July, 7th 2016

[2] **Procédé de synthèse d'un précurseur d'un unique isomère de dairy-lactone**

Allais,* F. et al. AU2016245315 April, 10th 2015

[3] **Sizing composition for mineral wool, comprising lignosulfonates and a carbonyl compound, and resulting mats**

Allais,* F. et al. WO2016120576 August, 4th 2016

[4] **Binder for mineral fibres, comprising lignosulfonates and a carbonyl compound, and resulting mats**

Allais,* F. et al. WO2016120575 August, 4th 2016

[5] **Composition d'encollage pour laine minérale à base de sel de métal alcalin ou alcalino-terreux d'acide sulfonique et d'un composé carbonylé, et produits isolants obtenus**

Allais,* F. et al. FR3032197 August, 5th 2016

[6] **Composition d'encollage pour laine minérale à base de lignosulfonate d'ammonium et d'un composé carbonylé, et produits isolants obtenus**

Allais,* F. et al. FR3032196 August, 5th 2016

[7] **Liant pour fibres minérales à base de sel de métal alcalin ou alcalino-terreux d'acide sulfonique et d'un composé carbonylé, et mats obtenus**

Allais,* F. et al. FR3032194 August, 5th 2016

[8] **Liant pour fibres minérales à base de lignosulfonate d'ammonium et d'un composé carbonylé, et mats fibreux obtenus**

Allais,* F. et al. FR3032196 August, 5th 2016

[9] **Method for transforming levoglucosenone into 4-hydroxymethyl butyrolactone or 4-hydroxymethyl butenolide**

Allais,* F. et al. WO2015165957 November, 5th 2015

[10] **Phenolic polymers with exclusive 5,5-biaryl bonds, their preparation and applications**

Allais,* F. et al. WO2015055936 April, 23rd 2015

Publications in peer-reviewed journals :

[1] **Investigating isomer specific photoprotection in a model plant sunscreen** M. D. Horbury, A. L. Flourat, S. E. Greenough, F. Allais and V. G. Stavros Chemical Communications 2018 accepted

[2] **Biocatalytic synthesis and polymerization via ROMP of new biobased phenolic monomers: a greener process toward sustainable antioxidant polymers**

F. Diot-Néant, L. Migeot, L. Hollande, A. F. Reano, S. Domenek, F. Allais* Frontiers Chem. 2017, 5, 126

[3] A microstructural approach to highlight how a simple methyl group affects the mechanical properties of a natural fibers composite

A. Gallos*, G. Paës, D. Legland, J. Beaugrand, F. Allais ACS Sust. Chem. Eng. 2017, 5, 10352

[4] Isocyanate-free synthesis and characterization of renewable poly(hydroxyl)urethanes from syringaresinol

M. Janvier, P.-H. Ducrot* and F. Allais* ACS Sust. Chem. Eng. 2017, 5, 8648

[5] Mechanistic modeling and equilibrium prediction of the reactive extraction of organic acids with amines: a comparative study of two complexation-solvation models using 3-hydroxypropionic acid

F. Chemarin, M. Moussa, F. Allais, V. Athès, I. C. Trelea* Sep. Purif. Technol. 2017, 22, 475

[6] Elucidating nuclear motions in a plant sunscreen during photoisomerization, through solvent viscosity effects

M. Horbury, W. Quan, A. L. Flourat, F. Allais, V. Stavros Phys. Chem. Chem. Phys. 2017, 19, 21127

[7] Lignocellulosic fibers: a critical review of extrusion process for enhancement of the properties of natural fiber composites

A. Gallos*, G. Paës, F. Allais, J. Beaugrand RSC Adv. 2017, 7, 34638-34654.

[8] Wheat and sugar beet co-products for the bioproduction of 3-hydroxypropionic acid by Lactobacillus reuteri DSM217938

J. Couvreur, A. R. S. Teixeira, F. Allais, H.-E. Spinnler, C. Saulou-Berion, T. Clément* Fermentation 2017, 3, 32

[9] A novel and integrative process: from enzymatic fractionation of wheat bran with a hemicellulasic cocktail to the recovery of ferulic acid by weak anion exchange resin

S. Dupoirion, M.-L. Lameloise, M. Pommet, O. Bennaceur, R. Lewandowski, F. Allais, A. R. S. Teixeira, C. Rémond, H. Rakotoarivonina* Ind. Crops Prod. 2017, 105, 148-155

[10] From Bench Scale to kilolab Production of Renewable Ferulic Acid-based Bisphenols: Optimisation and Evaluation of Different Purification Approaches Towards a Technical Feasibility and Process Environmental Sustainability

A. R. S. Teixeira*, G. Willig, J. Couvreur, A. L. Flourat, A. A. M. Peru; P. Ferchaud, H. Ducatel, F. Allais React. Chem. Eng. 2017, 2, 406-419.

[11] Towards an extractive bioconversion of 3-hydroxypropionic acid: Study of inhibition phenomena

G. Burgé, M. Moussa, C. Saulou-Bérion, F. Chemrain, M. Kniest, F. Allais, H. E. Spinnler, V. Athès* J. Chem. Technol. Biotechnol. 2017, 9, 2425

[12] Ultrafast Barrierless Photoisomerization and Strong UV Absorption of Photoproducts in Plant Sunscreens

J. Luo, Y. Liu, S. Yang, A. F. Flourat, F. Allais, K. Han* J. Phys. Chem. Lett. 2017, 8, 1025-1030.

[13] New insights in reactive extraction mechanisms of organic acids: an experimental approach for 3-hydroxypropionic acid extraction with tri-n-octylamine

Chemarin, M. Moussa, M. Chadni, B. Pollet, P. Lieben, F. Allais, I. C. Trelea, V. Athès* Sep. Purif. Technol. 2017, 179, 523-532.

[14] Syringaresinol: a renewable and safer alternative to Bisphenol A for epoxy-amine resins

M. Janvier, L. Hollande, A. S. Jaufurally, M. Pernes, R. Ménard, M. Grimaldi, J. Beaugrand, P. Balaguer, P.-H. Ducrot* and F. Allais* ChemSusChem 2017, 4, 738-746.

[15] Chemo-enzymatic synthesis and characterization of renewable thermoplastic and thermoset isocyanate-free poly(hydroxy)urethanes from ferulic acid derivatives

R. Ménard, S. Caillol, F. Allais* ACS Sust. Chem. Eng. 2017, 5, 1446-1456.

[16] Exploring the microstructure of natural fibre composites by confocal Raman imaging and image analysis

Gallos, A.; Paës, G.; Legland, D.; Allais, F.; Beaugrand, J. Composites Part A 2017, 94, 32-40.

[17] Optimization of the laccase-catalyzed synthesis of (±)-syringaresinol; study of its thermal and antiradical activities

Jaufurally, A. S.; Teixeira, A. R. S.; Hollande, L.; Allais,* F. and Ducrot,* P.-H. ChemistrySelect 2016, 1, 5165-5171.

[18] Fully biobased esters and amides-containing epoxy thermosets from ferulic acid: chemo-enzymatic synthesis and thermo-mechanical properties characterization

Ménard, R.; Caillol,* S.; Allais,* F. *Ind. Crop. Prod.* 2016, 95, 83-95.

[19] Ferulic acid-based bis/trisphenols as renewable antioxidants for polypropylene and poly(butylene succinate)

Reano, Armando; Domenek*, Sandra; Pernes, Miguel; Beaugrand, Johnny; Allais, Florent *ACS Sust. Chem. Eng.* 2016, 4, 6562-6571.

[20] Chemo-enzymatic synthesis of chiral epoxides ethyl and methyl (S)-3-(oxiran-2-yl)propanoates from renewable levoglucosenone: an access to enantiopure (S)-dairy lactone

A. Peru, A. L. Flourat, C. Gunawan, W. Raverty, M. Jevric, B. Greatrex*, F. Allais * *Molecules* 2016, 21, 988

[21] Structure Property Relationships of Biobased n-Alkyl Bisferulate Epoxy Resins

Maiorana, A.; Reano, A. F.; Centore, R.; Balaguer, P.; Grimaldi, M.; Allais,* F. and Gross,* R. A. *Green Chem.* 2016, 18, 4961

[22] ADMET polymerization of biobased monomers deriving from syringaresinol

L. Hollande, A. S Jaufurally, P.-H. Ducrot, Florent Allais* *RSC Adv.* 2016, 6, 44297

[23]. Lipase-catalyzed Baeyer-Villiger Oxidation of cellulose-derived Levoglucosenone into (S)-gamma-hydroxymethyl- α,β -butenolide: Optimization by Response Surface Methodology

Andreia Teixeira,* Amandine Flourat, Aurelien Peru, Fanny Brunissen, Florent Allais *Front. Chem. – Chem Eng.* 2016, 4, 16

[24] Chemo-enzymatic preparation and characterization of renewable oligomers with bisguaicol moieties: promising sustainable antiradical/antioxidant additives

A. F. Reano, F. Pion, S. Domenek, P.-H. Ducrot*, F. Allais* *Green Chem.* 2016, 18, 3334

[25] Reactive extraction of bio-based 3-hydroxypropionic acid assisted by hollow-fiber membrane contactor using TOA and Aliquat 336 in n-decanol

G. Burgé, M. Moussa, F. Chemarin, C. Saulou-Berion, F. Allais, H.-E. Spinnler, V. Athes *J. Microbiol.* 2016, 10, 2705

[26] Monitoring of free phenol content in lignosulfonates using a combined ClO₂ titration – UV difference spectroscopy methodology

O. Broussard, M. Petit, N. Elie, S. Baumberger, A. Arnaud, P.-H. Ducrot, F. Allais* *Holzforchung* 2016, 70, 719

[27] Ultrafast photoprotecting sunscreens in natural products

L. A. Baker, M. D. Horbury, S. E. Grenough, F. Allais, P. S. Walsh, S. Habershon, V. G. Stavros *J. Phys. Chem. Lett.* 2015, 159, 56-61

[28] Structure-Activity Relationships and structural design optimization of a series of p-hydroxycinnamic acids-based bis- and trisphenols as novel sustainable antiradical/antioxidant additives

F. A. Reano, J. Chérubin, A. M. M. Peru, Q. Wang, T. Clément, S. Domenek, F. Allais* *ACS Sust. Chem. Eng.* 2015, 3, 3486-3496

[29] Diversity of lactobacillus reuteri strains in converting glycerol into 3-hydroxypropionic acid

G. Burgé, C. Saulou-Bérion, A. L. Flourat, F. Allais, V. Athes, H.-E. Spinnler *Appl. Biochem. Biotechnol.* 2015, 177, 923-939

[30] Relationships between the use of Embden Meyerhof pathway (EMP) or Phospho-Ketolase pathway (PKP) and lactate production capabilities of diverse Lactobacillus reuteri strains

G. Burgé, C. Saulou-Berion, M. Moussa, F. Allais, V. Athes, H.-E. Spinnler *J. Microbiol.* 2015, 53, 702-710

[31] Reactive extraction of 3-hydroxypropionic acid from model aqueous solutions and real bioconversion media. Comparison with its isomer 2-hydroxypropionic (lactic) acid

M. Moussa, G. Burgé, F. Chemarin, R. Bounader, C. Saulou-Bérion, F. Allais, H.-E. Spinnler; V. Athès *J. Chem. Technol. Biotechnol.* 2016, 91, 2276-2285.

[32] Straightforward synthesis of acrolein-free 3-hydroxypropionaldehyde system and its use for the development of a reliable HPLC method for the quantification of 3-hydroxypropionaldehyde in fermentation media

G. Burgé, A. L. Flourat, B. Pollet, H. E. Spinnler, F. Allais* *RSC Adv.* 2015, 92619-92627

- [33] **New advances in the lignification process: comparative electrochemical study on monolignols and dimers**
B. Cottyn, M. Rivard, A. Majira, J. Beauhaire, F. Allais, T. Martens, S. Baumberger, P.-H. Ducrot *Phytochem. Lett.* 2015, 13, 280-285
- [34] **Renewable alternating aliphatic-aromatic polyurethanes derived from bio-based ferulic acid, diols and isocyanates : sustainable polymers with tunable thermal properties**
Pion, F.; Oulame, M. Z.; Ducrot, P.-H. and Allais,* *F. Eur. Polym. J.* 2015, 63, 186
- [35] **Renewable polymers derived from ferulic acid and biobased diols via ADMET**
I. Barbara, A. L. Flourat and Allais,* *F. Eur. Polym. J.* 2015, 62, 236
- [36] **Chemo-enzymatic synthesis of key intermediates (S)- γ -hydroxymethyl- α,β -butenolide and (S)- γ -hydroxymethyl- γ -butyrolactone via lipase-mediated Baeyer-Villiger oxidation of levoglucosenone**
Flourat, A. L.; Peru, A. A. M.; Teixeira, A. R. S.; Brunissen, F. and Allais,* *F. Green Chem.* 2015, 17, 404
- [37] **Plant sunscreens in the UV-B : Ultraviolet spectroscopy of jet-cooled sinapoyl malate, sinapic acid, and sinapate ester derivatives**
Dean, J.; Kusaka, R.; Walsh, P.; Allais, F.; Zwier,* T. J. *Am. Chem. Soc.* 2014, 136, 14780
- [38] **Renewable alternating aliphatic-aromatic copolyesters derived from biobased ferulic acid, diols and diacids : sustainable polymers with tunable thermal properties**
Pion, F.; Ducrot, P.-H. and Allais,* *F. Macromol. Chem. Phys.* 2014, 5, 431-439
- [39] **Chemo-enzymatic preparation of new bio-based bis- and trisphenols: new versatile building blocks for polymer chemistry**^[SEP]
Pion, F.; Reano, A. F.; Ducrot, P.-H. and Allais,* *F. RSC Adv.* 2013, 3, 8988-8997
- [40] **Chemoenzymatic total synthesis of the naturally occurring (5-5)/(8-O-4) dehydrotrimer of ferulic acid** ^[SEP]
Mouterde, L. M. M.; Flourat, A. L.; Cannet, M. M. M.; Ducrot, P.-H. and Allais,* *F. Eur. J. Org. Chem.* 2013, 1, 173-179
- [41] **A new access to chiral β -benzyl- γ -butyrolactones and its application to the synthesis of enantiopure (\pm)-secoisolariciresinols and (-)-enterolactone** ^[SEP]
Allais,* F.; Pla, T. J.; and Ducrot,* P.-H. *Synthesis* 2011, 9, 1456-1464.
- [42] **Total asymmetric synthesis of rugulactone, a natural α -pyrone from *Cryptocarya rugulosa***
Allais,* F.; Ahouansou, M. ; Majira, A. and Ducrot,* P.-H. *Synthesis* 2010, 16, 2787-2793.
- [43] **Stereoselective total synthesis of (+)-dodoneine** ^[SEP]
Allais,* F. and Ducrot,* P.-H. *Synthesis* 2010, 10, 1649-1653.
- [44] **A straightforward and efficient total synthesis of 2-O-feruloyl-L-malate, 2-O-sinapoyl-L-malate and 2-O-5-hydroxyferuloyl-L-malate** ^[SEP]
Allais,* F.; Martinet, S. and Ducrot,* P.-H. *Synthesis* 2009, 21, 3571-3578.
- [45] **Imbalanced lignin biosynthesis favors sexual reproduction of oomycete pathogens** ^[SEP]
Mickaël Quentin, Anthony Pegard, Valérie Allasia, Florent Allais, Paul-Henri Ducrot, Bruno Favery, Caroline Levis, Sophie Martinet, Clarissa Masur, Michel Ponchet, Dominique Roby, Nikolaus Schlaich, Lise Jouanin, and Harald Keller* *PLoS Pathogens* 2009, 5(1)
- [46] **Mechanistic Aspects of the Reduction of S-Alkyl-thionocarbonates in the Presence of Triethylborane and Air** ^[SEP]
Allais,* F.; Nguyen, V. T. and Boivin,* J. *Beilstein J. Org. Chem.* 2007, 3:46
- [47] **A Short and Highly Diastereoselective Synthesis of Verbalactone** ^[SEP]
Allais, Florent; Louvel, Marie-Cécile and Cossy*, Janine *Synlett* 2007, 3, 451-452
- [48] **Methanesulfonamide, 1,1,1-trifluoro-N-2-pyridinyl-N-[(trifluoromethyl)sulfonyl]** ^[SEP]
Allais, Florent; Cossy*, Janine in *Encyclopaedia of Reagents in Organic Chemistry*, (Ed: Léo Paquette) 2007

[49] **A Short and Efficient Synthesis of (+)-Diospongin A**

Bressy, Cyril; Allais, Florent and Cossy*, Janine Synlett 2006, 20, 3455-3456

[50] **A Comparison of a Radical Polymerization vs ROMP Matrix for Molecular Imprinting**

Allais, F.; Martin, R.; Mohamed, R. and Enholm*, E. J. Macromolecules 2006, 39, 7859-7862

[51] **Enantio- and Diastereoselective Allylmetalations: An Easy and Efficient Access to the AB Spiroketal of Spongistatin**

Allais, Florent and Cossy*, Janine Org. Lett. 2006, 8, 3655-3657

[52] **Aldehyde-alkene Cyclizations via O-stannyl Ketyl Radicals using Sugars as Auxiliaries**

Eric J. Enholm*, Florent Allais and Sébastien Bareyt Tetrahedron: Asymmetry 2003, 14, 2871-2874

[53] **Desymmetrization of Cyclopentadienylsilanes through Asymmetric Cyclopropanation**

F. Allais, R. Angelaud, B. Camuzat-Dedenis, K. Julienne, Y. Landais* Eur. J. Org. Chem. 2003, 1069- 1073

[54] **Highly Diastereoselective 5-Hexenyl Radical Cyclizations with Lewis Acids and Carbohydrate Scaffolds**

Enholm*, E. J.; Cottone, J. S.; Allais, F. Org. Lett. 2001, 3, 145-147

Proceedings/preprints

[1] **Biorenewable copolyesters derived from a bio-based carbohydrate and lignin**

Pion, F.; Ducrot,* P.-H. and Allais,* F. Polymer Preprints 2012, 53(2), 264

[2] **Synthesis, molecular modeling and characterization of new polyphenolic dendronized polymers via ROMP**

Allais,* F.; Lancelot, A.; Pion, F.; Mazeau, K.; Méry, S. and Ducrot,* P.-H. Polymer Preprints 2011, 52(2), 379

Book chapters

[1] **Chemo-enzymatic Synthesis, Derivatizations, and Polymerizations of Renewable Phenolic Monomers Derived from Ferulic Acid and Biobased Polyols: An Access to Sustainable Copolyesters, Poly(ester-urethane)s, and Poly(ester-alkenamer)s**

Pion, F.; Reano, A. F.; Oulame, M. Z.; Barbara, I.; Flourat, A. L.; Ducrot, P.-H. and Allais,* F. ACS Symposium Series, vol. 1192 "Green Polymer Chemistry: Biobased Materials & Biocatalysis" 2015, Chapter 4, 41-68

Invited seminars

[1] **Green chemistry progress and commercial potential** – Green Chemistry Industrial Seminar (Biopria, Monash University) August, 2nd 2017

[2] **Chemo-enzymatic syntheses of (S)- γ -Hydroxymethyl- α,β -Butenolide (HBO), chiral epoxides, rare sugars and flavors from levoglucosenone** – Green Chemistry Industrial Seminar (Biopria, Monash University) August, 2nd 2017

[3] **Using biocatalysis to transform biomass and biorefineries by-products into renewable chemicals such as polymers and functional additives** – LG2A (UPJV, Amiens) June, 3rd 2016

[4] **When white biotechnologies meet green chemistry to transform biomass into high-value added chemicals** – Norske Skog (Boyer, Tasmania, Australia) April, 14th 2016

[5] **When white biotechnologies meet green chemistry to transform biomass into high-value added chemicals** – APPI (Maryvale, Victoria, Australia) April, 11th 2016

[6] **When white biotechnologies meet green chemistry to transform biomass into high-value added chemicals** – BIOPRIA (Monash University, Australia) April, 7th 2016

[7] **Chemo-enzymatic synthesis and polymerization of bio-based macrobisphenols derived from ferulic acid: an access to novel renewable polymers** – ICGM (CNRS ENSCM, Montpellier) June, 24th 2015

[8] **Chemo-enzymatic synthesis and polymerization of bio-based macrobisphenols derived from ferulic acid: an access to novel renewable copolyesters, polyurethanes and polyphenols** – ICMPE (CNRS UPEC, Thiais) November, 17th 2014

[9] **Total synthesis and valorization of naturally occurring phyenylpropanoids**^[SEP] - Univerzita Palackého, Olomouc, Czech Republic, April, 23rd 2013

[10] **Lignines et tanins: mécanismes de biosynthèse, synthèse totale et valorisation** - UMR GENIAL (AgroParisTech, Massy), December, 6th 2011

[11] **Talk n°1: Synthesis and studies of dendrimers and polymers with tunable hydrophobic properties and topology: plant cell wall mimetics for in vitro lignification modeling**
Talk n°2: Total synthesis of 2-O-feruloyl-L-malate, 2-O-sinapoyl-L-malate and 2-O-5-hydroxyferuloyl-L-malate and their impacts on plant defense mechanisms^[SEP] IPCMS (CNRS, Strasbourg), October, 22d 2009

Invited conferences and keynote lectures :

[1] **Using both bottom-up and top-down approaches to valorize biomass and by-products through white biotechnologies, green chemistry and downstream processing**
Allais, Florent GSC8, Melbourne; VIC Australia, July, 23-25 2017

[2] **Chemo-enzymatic synthesis and polymerizations of bio-based bisphenols derived from lignin: an access to novel 100% renewable alternating aromatic/aliphatic polymers**
Allais, Florent 2nd World Congress on Biopolymers, Manchester, UK, August, 4-5 2016

[3] **Chemo-enzymatic synthesis and polymerizations of bio-based bisphenols derived from lignin: an access to novel renewable alternating aromatic/aliphatic polymers**
Allais, Florent Biopolymers and Bioplastics, San Francisco, CA USA, August, 10-12 2015

[4] **Synthesis, characterization, biological properties and polymerizations of new bio-based macrobisphenols derived from ferulic acid**^[SEP]
Pion, F.; Reano, A. F.; Wang, Q.; Clément, T.; Maillard, M.-N.; Domenek, S.; Ducrot, S.; Allais, F. XVIth Florida Heterocyclic and Synthetic Chemistry Symposium, Gainesville, FL USA, March, 2-5 2014

[5] **Total synthesis of 2-O-feruloyl-L-malate, 2-O-sinapoyl-L-malate and 2-O-5-hydroxyferuloyl-L-malate and their impacts on plant defense mechanisms**^[SEP]
Allais, Florent and Ducrot, Paul-Henri XIth Florida Heterocyclic and Synthetic Chemistry Symposium, Gainesville, FL USA, March, 6-11 2009

Oral communications :

[1] **Using biocatalysis to transform biomass and biorefineries by-products into renewable chemicals such as polymers and functional additives**
Allais,* F. Sustainable Polymers 2016, Safety Harbor, FL USA, May 21-25, 2016

[2] **Chemo-enzymatic synthesis and polymerizations of bio-based macrobisphenols derived from ferulic acid : an access to novel renewable copolyesters, polyurethanes, polyphenols and poly(ester-olefin)s**
Pion, F.; Reano, A. F.; Oulame, M. Z.; Barbara, I.; Flourat, A. L.; Ducrot, P.-H.; Allais,* F. ISGC 2015, La Rochelle, France, May 3-7, 2015

[3] **Lipase-catalyzed Baeyer-Villiger oxidation of levoglucosenone into (S)- γ -hydroxymethyl- α,β -butenolide and (S)- γ -hydroxymethyl- γ -butyrolactone : Optimization by Response Surface Methodology**
Teixeira, A. R. S.; Flourat, A. L.; Peru, A. M. M.; Brunissen, F.; Allais,* F. ISGC 2015, La Rochelle, France, May 3-7, 2015

[4] **Chemo-enzymatic synthesis of key intermediates (S)- γ -hydroxymethyl- α,β -butenolide and (S)- γ -hydroxymethyl- γ -butyrolactone via lipase-mediated Baeyer-Villiger oxidation of levoglucosenone** Flourat, A. L.; Peru, A. M. M.; Teixeira, A. R. S.; Brunissen, F.; Allais,* F. ISGC 2015, La Rochelle, France, May 3-7, 2015

[5] **Chemo-enzymatic synthesis of key intermediates (S)- γ -hydroxymethyl- α,β -butenolide and (S)- γ -hydroxymethyl- γ -butyrolactone via lipase-mediated Baeyer-Villiger oxidation of levoglucosenone** Flourat, A. L.; Peru, A. M. M.; Teixeira, A. R. S.; Brunissen, F.; Allais,* F. 249th ACS National Meeting, Denver, CO, Mars 22-26, 2015

[6] **Chemo-enzymatic synthesis and properties evaluation of new bio-based macrobisphenols derived from ferulic acid**

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