

Felix Armando Reano

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Graduate student

DOB: August, 6th 1989 (Lima, Peru)

Research Topics

- **Lignocellulosic biomass valorization** using **white biotechnologies** and **green chemistry**: bio-based monomers/oligomers/polymers, bioactive (macro)molecules (e.g., antioxidant, antimicrobial) . . .
- Development of characterization methods (antioxidants, antiradical and antimicrobial activities)

Present & previous positions

Feb. 2013 – **Graduate student & Teaching/Research assistant**, *Chaire Agro-Biotechnologies Industrielles (ABI) - AgroParisTech*, Reims, France.
Present

PhD thesis *Ferulic acid and (bio-)catalysis : an effective tandem to produce polyphenolics antioxidants*

- Enzyme-catalyzed reaction and polymerization
- Polymers characterization (DSC, TGA, GPC)
- Structural characterization (NMR, IR, UV-visible)
- Extrusion and casting
- Determination of antiradical and antioxidant activity (DPPH, OIT, EPR, thermal aging)
- HPLC

Supervisors Prof. F. Allais and Prof. S. Domenek

Oct. 2012 – **Chemical Engineer**, (*with Dr. Allais*), INRA, Versailles.

Dec. 2012 France

Optimization of a novel biocatalytic process to obtain phenolic polymers with exclusive 5,5-biaryl bonds

- Enzyme-catalyzed polymerization
- GPC analysis
- Optimization of reactions conditions

Mar. 2012 – **Master 2 internship (M.Sc.)**, (*with Dr. Allais*), INRA, Versailles.

Aug. 2012 France

Synthesis and enzyme-catalyzed polymerization of biobased macro bisphenols derivating from ferulic acid

Apr. 2011 – **Master 1 internship (M.Sc.)**, (*with Dr. Hautefaye*), Institut De Recherche Servier,

Aug. 2011 Croissy-sur-Seine.

France

Synthesis of novel nicotinic ligands

Education

- 2013 – Present **Graduate Student**, Chaire ABI - AgroParisTech, Reims, France.
- 2010 – 2012 **M.Sc. Master in Chemistry**, U. Pierre et Marie Curie, Paris, France.
- 2008-2010 **B.Sc. License in Chemistry**, U. Cergy Pontoise, Cergy, France.

Undergraduate students supervision (B.Sc. and M.Sc. internships, Teaching)

- 40 hours as teaching assistant
- 1 M.Sc. students in Chemistry (6 months)
- 1 M.Sc. students in Chemistry and Microbiology (6 months)
- 1 B.Sc. students in Chemistry and Microbiology (2 months)

Scientific production

Summary:

- 1 patents
- 1 Book Chapter
- 2 publications in peer-reviewed journals (plus 2 publications in preparation or to be submitted), 1 proceedings/preprints
- 4 oral communications & 4 posters

Patents

1. Phenolic polymers with exclusive 5,5-biaryl bonds, their preparation and applications, Allais, F.; Pion, F.; Reano, A. F.; Ducrot, P.-H.; Spinnler, H.-E., WO201505936 (FR20130059948), 2015.

Book Chapter

1. Florian Pion; Armando F. Reano; Mouhandoime Oulame; Imane Barbara; Amandine Flourat; Paul-Henri Ducrot; Florent Allais, *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*, Green Polymer Chemistry III: Biobased Materials and Biocatalysis, ACS BOOKS.

Publications in peer-reviewed journals

- [1] Florian Pion, Armando F. Reano, Paul-Henri Ducrot, and Florent Allais. Chemo-enzymatic preparation of new bio-based bis- and trisphenols: new versatile building blocks for polymer chemistry. *RSC Adv.*, 3:8988–8997, 2013.
- [2] Armando F. Reano, Julie Chérubin, Aurélien M. M. Peru, Qiao Wang, Tiphaine Clément,

Sandra Domenek, and Florent Allais. Structure–activity relationships and structural design optimization of a series of p-hydroxycinnamic acids-based bis- and trisphenols as novel sustainable antiradical/antioxidant additives. *ACS Sustainable Chemistry & Engineering*, 3(12):3486–3496, 2015.

Proceedings/preprints

1. Pion, F.; Reano, A.; Ducrot, P.-H. and Allais, F.*, Synthesis and polycondensation of bio-based macrodiols containing ferulic acid, *MACRO2012-IUPAC*, **Preprint 2012**.

Publications in preparation and to be submitted

1. Reano A. F.; Pion F.; Domenek S.; Ducrot P.-H.; Allais F.*, *Laccase-mediated synthesis and characterization of ferulic acid-based phenolic oligomers with exclusive 5-5 biaryl bonds: promising sustainable antioxidant additives*, accepted in *Green Chemistry*.
2. Reano A. F.; Beaugrand J.; Domenek S.; Ducrot P.-H.; Allais F.*, *Determination of antioxidant activity of biobased bisphenols derived from ferulic acid in Polypropylene and Polybutylene succinate*.

Oral communications

- 2014 **Chemo-enzymatic synthesis and properties evaluation of new bio-based macro-bisphenols**, *2nd International Conference on Bioinspired and Biobased Chemistry & Materials*, 15th-17th October, Nice (France).
Reano, A. F.; Chérubin, J.; Wang, Q.; Pion, F.; Clément, T.; Maillard, M.-N.; Ducrot, P.-H.; Domenek, S.; Allais*, F.
- 2014 **Chemo-enzymatic synthesis and polymerizations of bio-based macrobisphenols derived from ferulic acid : an access to novel renewable copolyesters, polyurethanes and polyphenols**, *248th ACS National Meeting*, 10th-14th August, San Francisco (USA).
Pion, F.; Reano, A. F.; Oulame, M. Z.; Ducrot, P.-H.; Allais*, Florent
- 2014 **Chemo-enzymatic synthesis and properties evaluation of new bio-based macro-bisphenols derived from ferulic acid**, *248th ACS National Meeting*, 10th-14th August, San Francisco (USA).
Reano, A. F.; Chérubin, J.; Wang, Q.; Pion, F.; Clément, T.; Maillard, M.-N.; Ducrot, P.-H.; Domenek, S.; Allais*, F.
- 2012 **Synthesis and polycondensation of bio-based macrodiols containing ferulic acid**, *Macro 2012: IUPAC World Polymer Congress*, 24th-29th June, Blacksburg (USA).
Pion, F.; Reano, A. F.; Ducrot, P.-H.; Allais*, F.

Posters

- 2015 **Synthesis, characterization, biological properties and polymerizations of new bio-based macrobisphenols derived from ferulic acid**, *23rd annual meeting of the Bio-Environmental Polymer Society (BEPS)*, 12th - 15th October, Karlsruhe (Germany).
Reano, A. F.; Pion F.; Oulame M. Z.; Wang Q.; Clément T.; Maillard M.-N.; Domenek S.; Ducrot P.-H.; Allais* F.
- 2014 **Synthesis and Characterization of new biobased polyphenols derived from ferulic acid**, *JCAT 45*, 20th - 23rd May, Rouen (France).
Reano, A. F.; Pion, F.; Domenek, S.; Allais*, F.

- 2013 **Synthesis and evaluation of antiradical activity of new bio-based macrobisphenols derived from ferulic acid**, *Biopolymers2013*, 4th - 6th December, Nantes (France).
Reano, A. F.; Pion, F.; Domenek, S.; Allais*, F.
- 2013 **Synthesis and evaluation of antiradical activity of new bio-based macrobisphenols derived from ferulic acid**, *Biopol2013*, 1st - 3rd October, Rome (Italy).
Reano, A. F.; Pion, F.; Domenek, S.; Allais*, F.
- 2012 **De nouveaux macro-polyols 100% biosourcés pour améliorer les propriétés thermo-mécaniques**, *Journées "Les bioplastiques : polymères biosourcés et/ou biodégradables*, 22nd - 23rd May, Strasbourg (France).
Pion, F.; Reano, A. F.; Ducrot, P.-H.; Allais*, F.

Languages

- French **Native Language**
Spanish **Native Language**
English **Intermediate**