

Antoine Gallos

Postdoctoral Researcher, Ph.D.

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DOB: February, 6th 1985 (France)



Research Interests

- Reactive extrusion and extrusion processes of composites and nanocomposites
- Upscaling of the extrusion processes of polymeric materials
- Thermal, mechanical, structural and optical characterization of materials
- Fire retardancy of polymeric materials and fire effluent toxicity analysis

Present & previous positions

Oct. 2014 - Present **Postdoctoral researcher**, *Chaire Agro-Biotechnologies Industrielles (ABI) - AgroParis-Tech; Institut National de la Recherche Agronomique (INRA/UMR FARE)*, Reims, France.

Project *Federatif*

- Valorization of ferulic acid derivatives for the improvement of the mechanical and thermal properties of biocomposites made of lignocellulosic fibres

Supervisors Prof. Florent Allais, Dr Johnny Beaugrand

July 2012 to Dec. 2013 **Postdoctoral researcher**, *Ingénierie des Systèmes Polymères (ISP/UMET CNRS-UMR 8207)*, Lille, France.

Project *Nanolac II*

- This project was the following of the project Nanolac. The project Nanolac II focused on the upscaling of the reactive extrusion process of stereocomplexed L,D-poly lactide for industrial applications

Supervisors Prof Serge Bourbigot, Dr Gaelle Fontaine

Oct. 2008 to Dec. 2011 **Ph.D Thesis**, *Ingénierie des Systèmes Polymères (ISP/UMET CNRS-UMR 8207)*, Lille, France.

Project *Nanolac*

- The aim of the Nanolac project was to enhance the fire properties of polylactide with the use of nano additives, mainly for textile applications, and also to set in place a lab scale reactive extrusion process for the polymerization of lactide with additives. I also investigate the fire smoke and soot toxicity of flame retarded polylactides

Supervisors Prof Serge Bourbigot, Dr Gaelle Fontaine

Sept. 2007 to June 2008 **Project research/Placement**, *Ingénierie des Systèmes Polymères (ISP/UMET CNRS-UMR 8207)*, Lille, France.

Project *Pocana*

- This project was focusing on the elaboration and the characterization of polycarbonate and polymethylmetacrylate nano-filled blend for transport applications

Supervisors Prof Sophie Duquesne

June to Aug.2007 **Project research/Placement**, *Ingénierie des Systèmes Polymères (ISP/UMET CNRS-UMR 8207)*, Lille, France.

Project *Mabiolac*

- The aim of this project was to functionalize and to characterize carbon nanotubes used as nanofillers in flame retardancy for polylactides

March to June 2006 **Project research/Placement**, *Maison de la Recherche en Environnement Industriel (MREI)*, Dunkerke, France.

Project *Synthesis and characterization of materials (metal oxide and hydrotalcite) used in environmental catalysis*

Education

2008-2011 **ph.D. (with honours)**, "*Molecules and condensed matter*", Université des Sciences et Technologies de Lille (USTL), Lille, France.

2006-2008 **Master Degree in *Physics and Chemistry***, Université des Sciences et Technologies de Lille (USTL), Dunkerque, France.

2004-2006 **Bachelor Degree in *Physics and Chemistry***, Université du Littoral côte d'Opale (ULCO), Dunkerque, France.

2003-2004 **Classe préparatoire aux grandes écoles *Physics and Chemistry***, Lycée Jean Bart, Dunkerque, France.

2002-2003 **Scientific Baccalauréat (with honours)**, Lycée Jean Bart, Dunkerque, France.

Management Experience

2009 - 2011 **Monitor.**

In charge of a section of students for practicals in chemical analysis

Scientific production

Summary:

- 6 publications in peer-reviewed journals
- 7 oral communications & 4 posters

Publications in peer-reviewed journals

- [1] Gallos Antoine, Gaëlle Fontaine, and Bourbigot Serge. Influence of mwnt and α -tropolone on thermal stability and crystallinity behavior of stereocomplexed poly-l,d-lactides. *Industrial & Engineering Chemistry Research*, 53(22):9377–9382, 2014.
- [2] Antoine Gallos, Gaëlle Fontaine, and Serge Bourbigot. Reactive extrusion of stereocomplexed poly-l,d-lactides: Processing, characterization, and properties. *Macromolecular Materials and Engineering*, 298(9):1016–1023, 2013.
- [3] Antoine Gallos, Gaëlle Fontaine, and Serge Bourbigot. Reactive extrusion of intumescent stereocomplexed poly-l,d-lactide: characterization and reaction to fire. *Polymers for Advanced Technologies*, 24(1):130–133, 2013.
- [4] Serge Bourbigot, Gaëlle Fontaine, Antoine Gallos, and Séverine Bellayer. Reactive extrusion of pla and of pla/carbon nanotubes nanocomposite: processing, characterization and flame retardancy. *Polymers for Advanced Technologies*, 22(1):30–37, 2011.
- [5] Marius Murariu, Anne Laure Dechief, Leila Bonnaud, Yoann Paint, Antoine Gallos, Gaëlle Fontaine, Serge Bourbigot, and Philippe Dubois. The production and properties of polylactide composites filled with expanded graphite. *Polymer Degradation and Stability*, 95(5):889 – 900, 2010.
- [6] Serge Bourbigot, Gaëlle Fontaine, Antoine Gallos, Caroline Gérard, and Séverine Bellayer. *Functionalized-Carbon Multiwall Nanotube as Flame Retardant for Polylactic Acid*, chapter 4, pages 25–34.

Oral communications

- 2016 **Corrélations entre les propriétés mécaniques et la répartition des fibres au sein d'un biocomposite par imagerie par microscopie confocale à spectroscopie Raman**, *Journées Jeunes Chercheurs de la SFR Condorcet*, 20th January, Reims (France).
- 2016 **Correlations between mechanical properties and fibres dispersion in a biobased composite using confocal Raman imaging**, *Scientific workshop "Fibre Quality - Multi-Hemp"*, 18th January, Lille (France).
- 2015 **Prétraitement de fibres lignocellulosiques par des synthons bio-sourcés pour des applications composites thermoplastiques : Apport de la cartographie topochimique par Microscopie Confocale à Spectroscopie Raman**, *XXIe Journées Scientifiques du Groupement Français de Spectroscopie Vibrationnelle (GFSV)*, 17th- 19th June, Reims (France).
- 2015 **Prétraitement de fibres lignocellulosiques par des synthons bio-sourcés pour des applications composites thermoplastiques : Apport de la cartographie topochimique par Microscopie Confocale à Spectroscopie Raman**, *Scientific workshop "Synthons et Matériaux Biosourcés SYMBIOSE"*, 8th- 10th April, Nantes (France).
- 2012 **Flame retardancy of stereocomplex PLA**, *BASF seminar*, 18th October, Ludwigshafen (Germany).
- 2011 **Reactive extrusion of PLLA/PDLA stereocomplexes nanocomposites: Processing, characterization and properties**, *XIIIe congrès de la Société Française de Génie des Procédés (SFGP)*, 29th Nov. - 1st Dec., Lille (France).
- 2009 **Fire reaction study of an intumescent polylactide**, *2e Journée des Jeunes Polyméristes du Nord (JPN)*, 2nd December, Lille (France).

Posters

- 2015 **Correlations between mechanical properties and fibres dispersion in a biobased composite using Confocal Raman Imaging**, *5th International Conference on Biobased and Biodegradable Polymers*, 6th- 9th October, San Sebastian (Spain).
- 2015 **Ferulic acid and derivatives for advanced treatment of lignocellulosic fibres before extrusion process**, *scientific workshop "composites biosourcés"*, 5th February, Nice - Sophia Antipolis (France).
- 2013 **Reactive extrusion of intumescent stereocomplexed poly-(L,D)-lactide**, *14th Fire Retardancy and Protection of Materials (FRPM)*, 30th June - 4th July, Lille (France).
- 2013 **Fire toxicity of a (nano)composite flame retarded polylactide**, *5th International Seminar on Modern Polymeric Materials for Environmental Applications (MPM)*, 15th - 17th May, Krakow (Poland).

Languages

- French **Native Language**
- English **Advanced**
- German **Intermediate**