

# Julien Poly

37 years old

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## CURRENT POSITION

### **Assistant Professor**

since 2009

*Institut de Science des Matériaux de Mulhouse (IS2M)*  
*Ecole Nationale Supérieure de Chimie de Mulhouse (ENSCMu)*  
*Université de Haute-Alsace (UHA)*

## EDUCATION

### **Ph.D. in Polymer Science**

2008

*Université de Bordeaux*

### **Research Engineer Diploma**

2005

*Ecole Nationale Supérieure de Chimie de Paris (ENSCP)*

### **M.S. in Physical Chemistry**

2005

*Ecole Normale Supérieure (ENS) de Cachan*  
*Université Paris-Sud (Paris XI)*

### **M.S. in Polymer Science**

2005

*Université Pierre et Marie Curie (Paris VI)*

Passed the “**Agrégation externe de Sciences Physiques, option Chimie**”, a highly competitive examination enabling teaching chemistry and physics to undergraduate and graduate students

2004

Entered “**Ecole Nationale Supérieure de Chimie de Paris**” as a dual degree course

2002

*ENS de Cachan - ENSCP*

Entered “**Ecole Normale Supérieure de Cachan**” (chemistry department) after having passed a highly competitive examination

2001

## GRANTS AND HONORS

Article selected for a special issue “**Emerging investigators**”

2015

*Polymer Chemistry (RSC)*

### **Délégation CNRS**

2015

*Reduction of teaching hours funded by CNRS*

<b>“Article of the week”</b> <i>Polymer Chemistry (RSC)</i>	2014
<b>“Bonus for scientific excellence”</b> <i>UHA</i>	2012 - 2015
<b>“Author of the week”</b> <i>Polymer Chemistry (RSC)</i>	2011
<b>Eugène Schueller Prize</b> <i>L’Oréal - Chimie Paris Tech</i>	2010
<b>Fulbright Research Scholarship</b> <i>Declined since appointed as Assistant Professor at the same time</i>	2009
<b>Best Ph.D. Thesis Award</b> <i>Société Chimique de France (SCF), section Aquitaine</i>	2008
<b>State Salary as an ENS Student</b> <i>ENS de Cachan</i>	2001 - 2005

## **FUNDED RESEARCH PROJECTS & COLLABORATIONS**

Main current topic: <b>photo-mediated controlled radical polymerizations</b>	since 2014
Participant in the ITN (Innovative Training Network) H2020 European project PHOTO-EMULSION: <i>“Towards next generation eco-efficient photo and emulsion polymerizations”</i> Coordinator: Abraham Chemtob (IS2M)	since 2017
<b>ANR young researcher project (RAFT-POP):</b> <i>“Polymers synthesized by RAFT as versatile macrophtoinitiators”</i> <b>Coordinator</b> / Funding: ANR <i>IS2M</i>	2015 - 2017
Collaboration with Pr. Eléna Ishow (Université de Nantes, France): <i>“Synthesis of functional biocompatible copolymers for therapeutic nanoassemblies”</i> , part of the ETHICAM project Coordinator: E. Ishow / Funding: CNRS “défi Nano”	2014 - 2016
Collaboration with <b>Pr. Kris Matyjaszewski</b> (Carnegie Mellon University, Pittsburgh, USA): <i>“Synthesis and characterization of new polymers with photo-triggered self-healing properties”</i> <b>Coordinator</b> / Funding : UHA	2012 - 2013
Collaboration with Pr. Wenxin Wang (University of Galway, Ireland): <i>“Mechanistic studies of controlled radical copolymerizations”</i> Coordinators: W. Wang & J. Poly / Funding: Ulysses EGIDE	2012 - 2013

**Postdoctoral project:** “*Design of nano-structured hydrophobic surfaces using well-defined macromolecular precursors*” 2008 - 2009  
Research supervisor: Pr. Eric Papon / Funding: ANR  
*Laboratoire de Chimie des Polymères Organiques (LCPO)*  
*Université de Bordeaux*

**Ph.D. work:** “*Controlled radical crosslinking copolymerization: application to the synthesis of nanogels in the presence of xanthates and modeling*” 2005 - 2008  
Research supervisor: Pr. Daniel Taton / Financial support: Rhodia  
*LCPO, Université de Bordeaux*

## **TEACHING & TRAINING**

**Courses, practical and lab work** at ENSCMu (chemical engineering school) and at the faculty of sciences at UHA for students in chemical engineering and B.S. and M.S. students: macromolecular chemistry, characterization of polymers, organic chemistry, spectroscopy and molecular orbitals since 2009  
*ENSCMu - UHA*

Up to now, I have supervised **2 Ph.D. students** (defenses: 09/2016 and 12/2017) and more than **20 interns** (1<sup>st</sup> and 2<sup>nd</sup> year M.S. students and 2<sup>nd</sup> year chemical engineer students). since 2009

Teaching assistant: supervision of B.S. students during practical and lab work in organic chemistry, electrochemistry, analytical chemistry, thermodynamics, crystallography & methodology 2005 - 2007  
*Université de Bordeaux*

Examiner: oral training for “classes préparatoires” students preparing “Grandes Ecoles” competitive examinations 2004 - 2005  
*Lycée Louis-le-Grand, Paris*

## **EXPERTISE**

Reviewer for different journals: *Polymer Chemistry, Macromolecules, Macromolecular Rapid Communications, European Polymer Journal, Angewandte Chemie, Chemical Communications, RSC Advances, Journal of Materials Chemistry, Chemistry of Materials, and ACS Applied Materials and Interfaces* since 2009

Reviewer for proposals submitted to ANR (French Research Agency) since 2013

Examiner for Mr. Alberto Sanz de Leon’s Ph.D. thesis: “*Design of bioinspired porous polymer films mediated by the breath figures technique*” 2015  
Supervision: Dr. Juan Rodriguez-Hernandez, International University Menendez Pelayo, Madrid

Reviewer for Mr. Zhou Zhang’s Ph.D. thesis: “*Molecular structure effects on polymeric honeycomb film formation*” 2013  
Supervision: Pr. Greg Qiao, University of Melbourne

## RESPONSIBILITIES

Junior scientific leader of the research axis “Functional Polymers Engineering” at IS2M	2015 - 2017
Member of IS2M laboratory council	2013 - 2017
Member of the board of ENSCMu	2011 - 2014
Member of selection committees for assistant professor positions <i>UHA (2), Université de Strasbourg (1) and Université de Lorraine (1)</i>	since 2011

## SCIENTIFIC PRODUCTION

### Peer-reviewed articles

- **Investigation into the mechanism of photo-mediated RAFT polymerization involving the reversible photolysis of the chain-transfer agent** 2017  
Cabannes-Boué, B.; Yang, Q.; Lalevée, J.; Morlet-Savary, F.; Poly, J.\* *Polymer Chemistry* **2017**, 8, 1760-1770
- **PEGylated anionic magnetofluorescent nanoassemblies: impact of their interface structure on magnetic resonance imaging contrast and cellular uptake**  
Linot, C.; Poly, J.\*; Boucard, J.; Pouliquen, D.; Nedellec, S.; Hulin, P.; Marec, N.; Arosio, P.; Lascialfari, A.; Guerrini, A.; Sangregorio, C.; Lecouvey, M.; Lartigue, L.; Blanquart, C.\*; Ishow, E.\* *ACS Applied Materials and Interfaces* **2017**, 9, 14242-14257
- **Development of a robust photocatalyzed ATRP mechanism exhibiting good tolerance to oxygen and inhibitors** 2016  
Yang, Q.; Lalevée, J.; Poly, J.\* *Macromolecules* **2016**, 49, 7653-76667
- **Synergetic effect of the epoxide functional groups in the photocatalyzed atom transfer radical copolymerization of glycidyl methacrylate**  
Yang, Q.; Balverde, S.; Dumur, F.; Lalevée, J.; Poly, J.\* *Polymer Chemistry* **2016**, 7, 6084-6093
- **Iron complexes as potential photocatalysts for controlled radical photopolymerizations: A tool for modifications and patterning of surfaces**  
Telitel, S.; Dumur, F.; Campolo, D.; Poly, J.; Gignes, D.; Fouassier, J.-P.; Lalevée, J.\* *Journal of Polymer Science Part A : Polymer Chemistry* **2016**, 54, 702-713
- **Polymers synthesized by RAFT as versatile macrophotoinitiators** 2015  
Poly, J.\*; Cabannes-Boué, B.; Hebinge, L.; Mangin, R.; Sauvage, A.; Xiao, P.; Morlet-Savary, F.; Lalevée, J. *Polymer Chemistry* **2015**, 6, 5766-5772  
special issue “Emerging Investigators”
- **Photocatalyzed Cu-based ATRP involving an oxidative quenching mechanism under visible light**  
Yang, Q.; Dumur, F.; Morlet-Savary, F.; Poly, J.\*; Lalevée, J. *Macromolecules* **2015**, 48, 1972-1980

- **Photoredox catalysis using a new iridium complex as an efficient toolbox for radical, cationic & controlled polymerizations under soft blue to green lights**

Telitel, S.; Dumur, F.; Telitel, S.; Soppera, O.; Lepeltier, M.; Guillaneuf, Y.; Poly, J.; Morlet-Savary, F.; Fioux, P.; Fouassier, J.-P.; Gigmes, D.;\* Lalevée, J.\* *Polymer Chemistry* **2015**, *6*, 613-624
- **Introduction of self-healing properties into covalent polymer networks via the photodissociation of alkoxyamine junctions** 2014

Telitel, S.; Amamoto, Y.; Poly, J.;\* Morlet-Savary, F.; Soppera, O.; Lalevée, J.; Matyjaszewski, K. *Polymer Chemistry* **2014**, *5*, 921-930  
"paper of the week"
- **Controlled homopolymerization of multi-vinyl monomers: dendritic polymers synthesized via an optimized ATRA reaction** 2013

Zheng, Y.; Zhao, T.; Newland, B.; Poly, J.; Wang, W.\* *Chemical Communications* **2013**, *49*, 10124-10126
- **Controlled multi-vinyl monomer homopolymerization through vinyl oligomer combination as a universal approach to hyperbranched architectures**

Zhao, T.; Zheng, Y.; Poly, J.; Wang, W.\* *Nature Communications* **2013**, *4*, 1873-1880
- **Radical photopolymerization in miniemulsions. Fundamental investigations and technical development** 2011

Højjemberg, P.A.; Chemtob, A.;\* Croutxé-Barghorn, C.; Poly, J.; Braun, A.M. *Macromolecules* **2011**, *44*, 8727-8738
- **Controlled synthesis of branched poly(vinyl acetate)s by xanthate-mediated RAFT self-condensing vinyl (co)polymerization**

Schmitt, J.; Blanchard, N.; Poly, J.\* *Polymer Chemistry* **2011**, *2*, 2231-2238  
"author of the week"
- **Nanogels based on poly(vinyl acetate) for the preparation of patterned porous films**

Poly, J.;\* Ibarboure, E.; Le Meins, J.-F.; Rodriguez-Hernandez, J.; Taton, D.; Papon, E. *Langmuir* **2011**, *27*, 4290-4295
- **Reinforcing the hydrophobicity of polymeric surfaces from fluorinated star polymers and nanogels** 2010

Poly, J.;\* Ibarboure, E.; Rodriguez-Hernandez, J.; Taton, D.; Papon, E. *Macromolecules* **2010**, *43*, 1299-1308
- **A comprehensive investigation into "controlled/living" crosslinking copolymerization including a back to basics modeling** 2009

Poly, J.;\* Wilson, J.; Destarac, M.; Taton, D.\* *Journal of Polymer Science Part A : Polymer Chemistry* **2009**, *47*, 5313-5327
- **Synthesis of poly(vinyl acetate) nanogels by xanthate-mediated radical crosslinking copolymerization** 2008

Poly, J.;\* Wilson, J.; Destarac, M.; Taton, D.\* *Macromolecular Rapid Communications* **2008**, *29*, 1965-1972

- **Water soluble polymeric nanogels by xanthate-mediated radical crosslinking copolymerisation** 2006  
Taton, D.\*; Baussard, J.-F.; Dupayage, L.; Poly, J.; Gnanou, Y.; Ponsinet, V.; Destarac, M.; Mignaud C.; Pitois C. *Chemical Communications* **2006**, 1953-1955

### **Book chapter**

- **Polymers with photoinduced self-healing properties** 2015  
Poly, J.\* In *Dyes and Chromophores in Polymer Science*, J. Lalevée and J.-P. Fouassier, Eds., John Wiley & Sons, Inc. **2015**, 393-421

### **Invited talk at an international conference**

- **Recent developments in the field of light-controlled radical polymerizations** 2016  
Yang, Q.; Cabannes-Boué, B.; Morlet-Savary, F.; Lalevée, J.; Poly, J.\*  
*36<sup>th</sup> Australasian Polymer Symposium, Lorne, Victoria, Australia, November 20<sup>th</sup> - 23<sup>rd</sup> 2016*  
**“keynote speaker”**

### **Other talks at international conferences**

- **Investigation into the mechanism of photo-mediated RAFT polymerization involving the reversible photolysis of the chain-transfer agent** 2017

Cabannes-Boué, B.; Yang, Q.; Lalevée, J.; Morlet-Savary, F.; Poly, J.\*  
*11<sup>th</sup> International Symposium on Ionic Polymerization, Durham, UK, September 17<sup>th</sup> - 22<sup>nd</sup> 2017*

- **Recent developments in the field of photo-mediated reversible deactivation radical polymerizations**

Yang, Q.; Cabannes-Boué, B.; Morlet-Savary, F.; Lalevée, J.; Poly, J.\*  
*European Polymer Federation Congress, Lyon, France, July 2<sup>nd</sup> - 7<sup>th</sup> 2017*

- **Investigations into the mechanisms of photo-ATRP and photo-RAFT**

Yang, Q.; Cabannes-Boué, B.; Morlet-Savary, F.; Lalevée, J.; Poly, J.\*  
*12<sup>th</sup> International Conference on Advanced Polymers via Macromolecular Engineering, Ghent, Belgium, May 21<sup>st</sup> - 24<sup>th</sup> 2017*

- **Recent developments in the field of light-controlled radical polymerizations** 2016

Yang, Q.; Cabannes-Boué, B.; Morlet-Savary, F.; Lalevée, J.; Poly, J.\*  
*Warwick Polymer Conference, Warwick, UK, July 11<sup>th</sup> - 14<sup>th</sup> 2016*

- **Photocatalyzed Cu-Based ATRP involving an oxidative quenching mechanism under visible light**

Yang, Q.; Dumur, F.; Morlet-Savary, F.; Lalevée, J.; Poly, J.\*  
*World Congress on Living Polymerizations and Polymers, Budapest, Hungary, May 29<sup>th</sup> - June 3<sup>rd</sup> 2016*

- **Polymers synthesized by RAFT as versatile macrophotoinitiators** 2015

Cabannes-Boué, B.; Morlet-Savary, F.; Lalevée, J.; Poly, J.\*  
*11<sup>th</sup> International Symposium on Ionic Polymerization, Bordeaux, France, July 5<sup>th</sup> - 10<sup>th</sup> 2015*

- **Introduction of self-healing properties into covalent polymer networks via the photodissociation of alkoxyamine junctions** 2013  
 Telitel, S.; Amamoto, Y.; Poly, J.;\* Morlet-Savary, F.; Soppera, O.; Lalevée, J.; Matyjaszewski, K.  
*IUPAC 10<sup>th</sup> International Conference on Advanced Polymers via Macromolecular Engineering, Durham, UK, August 18<sup>th</sup> - 22<sup>nd</sup> 2013*
  - **New concepts for the synthesis of polymer networks by RAFT controlled radical polymerization** 2012  
Poly, J.\*  
*21<sup>st</sup> Polymer Networks Group Meeting, Jackson, Wyoming, USA, August 12<sup>th</sup> - 16<sup>th</sup> 2012*
  - **New strategies for the synthesis of polymer networks by controlled radical polymerization**  
Poly, J.\*  
*Challenges and Prospects of Polymer Chemistry, Schlusee, Germany, May 2<sup>nd</sup> - 4<sup>th</sup> 2012*
  - **Synthesis of branched poly(vinyl acetate)s by xanthate-mediated RAFT self-condensing vinyl (co)polymerization** 2011  
 Schmitt, J.; Blanchard, N.; Poly, J.\*  
*12<sup>th</sup> Pacific Polymer Conference, Jeju, Korea, November 13<sup>th</sup> - 17<sup>th</sup> 2011*
  - **Controlled radical crosslinking copolymerization: a general concept for miscellaneous macromolecular architectures and various applications** 2010  
Poly, J.;\* Taton, D.  
*20<sup>th</sup> Polymer Networks Group Meeting, Goslar, Germany, August 29<sup>th</sup> - September 2<sup>nd</sup> 2010*
  - **Investigation of fluorinated nanogels and star polymers for the preparation of hydrophobic surfaces**  
Poly, J.;\* Ibarboure, E.; Rodriguez-Hernandez, J.; Taton, D.; Papon, E.  
*239<sup>th</sup> American Chemical Society National Meeting & Exposition, San Francisco, California, USA, March 21<sup>st</sup> - 25<sup>th</sup> 2010*
  - **Synthetic methodologies to star-like polymers by RAFT/MADIX** 2007  
 Taton, D.;\* Poly, J.; Dupayage, L.; Gonzalez, I.; Destarac, M.; Wilson, J.  
*29<sup>th</sup> Australian Polymer Symposium, Hobart, Tasmania, Australia, February 11<sup>th</sup> - 15<sup>th</sup> 2007*
- Selected invited seminars**
- **Photo-mediated reversible deactivation radical polymerizations** 2017  
 Cabannes-Boué, B.; Yang, Q.; Lalevée, J.; Morlet-Savary, F.; Poly, J.\*  
*SUSPOL summer school, Bordeaux, France, July 10<sup>th</sup> - 12<sup>th</sup> 2017*
  - **Light as a synthetic tool for macromolecular engineering** 2015  
Poly, J.\*
 
    - Indian Association for the Cultivation of Science, Kolkata, India, December 4<sup>th</sup> 2015
    - National Institute for Interdisciplinary Science and Technology, Thiruvananthapuram, India, December 2<sup>nd</sup> 2015
    - Indian Institute of Science, Bangalore, India, November 30<sup>th</sup> 2015
  - **Strategies for the synthesis of branched or crosslinked polymers by RAFT controlled radical polymerization** 2012  
Poly, J.\*  
*Network of Excellence for Functional Biomaterials, National University of Ireland, Galway, Irelande, 20 Mars 2012*