

Sébastien LECOMMANDOUX

Date of birth: June 7, 1970

Married, 2 children

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H factor 57, above 13000 total citations (Google Scholar)

170 publications, 7 book chapters, 10 patents

230 invited presentations (including 10 plenary and keynote lectures)

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Twitter: https://twitter.com/biomac_acs_bord

Google Scholar: <https://scholar.google.fr/citations?user=FKzOnNUAAAAJ&hl=fr>

Education and experience

- 2020-now Editor-in-Chief Biomacromolecules, ACS
- 2018-now Co-Director of Joint Laboratory LCPO-L'OREAL
- 2016-now Director of the Laboratoire de Chimie des Polymères Organiques LCPO
- 2014 Full Professor PRCE, Bordeaux-INP, ENSCBP – Université de Bordeaux
- 2009 Full Professor PR1, IPB-ENSCBP – Université de Bordeaux
- 2005 Professor PR2, ENSCPB – Université de Bordeaux
- 2004 Habilitation (HDR), 26.11.2004 – Université de Bordeaux
- 1998 Assistant Professor at the Ecole Nationale Supérieure de Chimie et de Physique de Bordeaux (ENSCPB) and Laboratoire de Chimie des Polymères Organiques (LCPO-CNRS)
- 1998 Postdoctoral Fellowship at the University of Illinois at Urbana-Champaign in the group of Professor S.I. Stupp, UIUC-USA.
- 1996 PhD at the University of Bordeaux in the Centre de Recherche Paul Pascal (CRPP-CNRS) in the group of Professor F. Hardouin.

Awards

- Seqens Award from the French Academy of Science (2019)
- Fellow of the Royal Society of Chemistry (FRSC), RSC (2017)
- Invited Professor at the University of California at Los Angeles UCLA, USA (2018)
- Junior Member of the Institut Universitaire de France, IUF (2007)
- Invited Professor at the University of Louvain la Neuve, Belgium (2007)
- Invited professor at the University of Santiago de Compostella, Spain (2007)
- Bronze Medal Award of the CNRS (2004)
- Award for the best PhD thesis from French Chemical Society (1996)

Membership

American Chemical Society (ACS), Controlled Release Society (CRS), French Polymer Society (GFP), French Chemical Society (SFC), French Society of Nanomedicine (SF-NANO).

Synopsis of the research activity and scientific production

- General field of interest: General domain of interest: Therapeutic Nanotechnologies, Drug-Delivery, Biomaterial, Polypeptide and polysaccharide synthesis and self-assembly, Biomimicry for (bio)materials design
- More than 260 oral communications, including 10 plenary and 230 on invitation.
- About 170 research publications, 7 book chapters, 1 book edited, 10 patents (2 licenced).
- Defence of 24 PhD thesis; 6 currently under (co)supervision; 32 postdocs trained.
- Coordinator or co-PI of more than 40 international and national research programs including 8 running projects (ANR, H2020, FP7-NMP, IUPAC, RNP-ESF, Marie-Curie) and several research contracts with industries in cosmetics and drug delivery fields (including L'Oreal, Firmenich, Debiopharm, Servier).

Scientific animation and responsibilities

- 2020-current: **Editor in Chief** Biomacromolecules (ACS)
- 2018-current: **Co-Director** of the Joint Laboratory L'OREAL-LCPO
- 2016-current: **Director** of the Laboratoire de Chimie des Polymères Organiques (LCPO, UMR CNRS 5629).
- 2010-2016: **Adjunct Director** of the Laboratoire de Chimie des Polymères Organiques (LCPO, UMR CNRS 5629).
- 2013-2019: **Associate Editor** for Biomacromolecules (ACS)
- Member of the International **Editorial Board** of several journals, including "Polymer Chemistry" (RSC), "Biomaterials Science" (RSC), Bioconjugate Chemistry (ACS), "Polymers" (MDPI AG, Open Access Journal) and "Nanocontainers" (Versita).
- 2005-2014: **Director of the Research** at the Ecole Nationale Supérieure de Chimie, Biologie et Physique de Bordeaux (IPB-ENSCBP-University de Bordeaux).
- 2011-2015: **Chair** of the Research Network Programme from ESF about "Precision Polymer Materials".
- 2006-2016: **Expert** for the "Observatoire des Nano et Micro-Technologies" OMNT.
- Co-editor of "Block Copolymers in Nanosciences", M. Lazzari, G. Liu, S. Lecommandoux, Wiley-VCH (2006).
- **Organizer for different conferences and symposium**, including recently: Symposium « Bio-Inspired Macromolecular Materials » at the Spring ACS National Meeting (PMSE), Philadelphia, USA (2020), Symposium « Molecular Engineering of Peptide Assemblies » at the Spring ACS National Meeting (PMSE), Orlando, USA (2019), « Bordeaux Polymer Conference » BPC 2018, Bordeaux (600 participants); Symposium « Glycopeptide Polymers » at the 243rd ACS National Meeting (POLY), San Diego, USA (2012) ; Symposium « Precision Polymer Materials » at the Fall 2012 MRS Meeting, Boston, USA (November 25-30, 2012)
- **Referee** for the "National Science Foundation" (NSF, USA), the "International Center for Frontier Research in Chemistry" (FCR, Europe), the "Agence Nationale de la Recherche" (ANR, France), "Research Foundation Flanders" (FWO, Belgium), "Netherlands Organisation for Scientific Research" (NWO, Netherlands), ...
- **Reviewer** for: Nature Materials, Nature Chemistry, Science, Advanced Materials, Journal of the American Chemical Society, Angewandte Chemie, Macromolecules, Langmuir, Biomacromolecules, Polymer Chemistry, Soft Matter, ...
- **Referee** for about 40 PhD (national and international) and 12 Habilitation à diriger les Recherches (HDR).

Selection of recent & most relevant publications

1. Hyaluronic acid presentation at the surface of self-assembled nanoparticles transforms a hyaluronidase HYAL1 substrate into an efficient and selective inhibitor. H. Duan, M. Donovan, F. Hernandez, C. Di Primo, E. Garanger, X. Schultze, S. Lecommandoux. *Angew. Chem. Int. Ed.* Just accepted (doi.org/10.1002/anie.202005212)
2. Dynamic Spatial Formation and Distribution of Intrinsically Disordered Protein Droplets in Macromolecularly Crowded Protocell. H. Zhao, V. Ibrahimova, E. Garanger, S. Lecommandoux. *Angew. Chem. Int. Ed.* In press (doi.org/10.1002/anie.202001868)
3. A Novel Progesterone Biosensor Derived from Microbial Screening. C. Grazon, R. C. Baer, U. Kuzmanovic, T. Nguyen, M. Chen, M. Zamani, M. Chern, P. Aquino, X. Zhang, S. Lecommandoux, A. Fan, M. Cabodi, C. Klapperich, M. W. Grinstaff, A. M. Dennis, J. Galagan. *Nature Communications* 11, DOI 10.1038/s41467-020-14942-5 (2020)
4. Design of Polysaccharide-b-Elastin-Like Polypeptide Bioconjugates and Their Thermo-responsive Self-Assembly. Y. Xiao, Z.S. Chinoy, G. Pecastaings, K. Bathany, E. Garanger, S. Lecommandoux. *Biomacromolecules* 21(1), 114-125 (2020)
5. Single-molecule mechanical unfolding experiments reveal a critical length for the formation of α -helices in peptides. D. Sluysmans, N. Willet, J. Thevenot, S. Lecommandoux, A.-S. Duwez. *Nanoscale Horizons*, DOI 10.1039/D0NH00036A (2020)
6. Aqueous Ring-Opening Polymerization-Induced Self-Assembly (ROPISA) of N-carboxyanhydrides. C. Grazon, P. Salas-Ambrosio, E. Ibarboure, A. Buol, E. Garanger, M. Grinstaff, S. Lecommandoux, C. Bonduelle. *Angew Chem Int Ed*, 59(2), 622-626 (2020) **cover**
7. Polypeptide Nanoparticles Obtained from Emulsion Polymerization of Amino Acid N-Carboxyanhydrides. J. Jacobs, D. Pavlovic, H. Prydderch, M.-A. Moradi, E. Ibarboure, J.P.A. Heuts, S. Lecommandoux, A. Heise. *J. Am. Chem. Soc.* 141, 12522-12526 (2019)
8. Asymmetric Hybrid Polymer-Lipid Giant Vesicles as Cell Membrane Mimics. A Peyret, E Ibarboure, J.-F. Le Meins, S. Lecommandoux. *Advanced Sciences*, Adv. 5, 1700453 (2018)
9. Polymersome popping by light-induced osmotic shock under temporal, spatial and spectral control. A Peyret, E Ibarboure, A Tron, L Beaute, R Rust, O Sandre, N.D. Mcclenaghan, S. Lecommandoux *Angew. Chem. Int. Ed.* 56 (6), 1566-1570 (2017) **cover**
10. Multivalent effect of glycopolypeptide based nanoparticles for galectin binding. C. Bonduelle, H. Oliveira, C. Gauche, J. Huang, A. Heise, S. Lecommandoux. *Chem. Commun.* 52 (75), 11251-11254 (2016)
11. Cascade Reactions in Multicompartmentalized Polymersomes. R. J. R. W. Peters, M. Marguet, S. Marais, M. W. Fraaije, J. C. M. Van Hest, S. Lecommandoux. *Angew. Chem. Int. Ed.* 53, 146-150 (2014) (highlighted in Nature Chemistry)
12. Polymersome Shape Transformation at the Nanoscale. R. Salva, J.-F. Le Meins, O. Sandre, A. Brulet, M. Schmutz, P. Guenoun, S. Lecommandoux. *ACS Nano* 7, 9298-9311 (2013)
13. Magnetic field triggered drug release from polymersomes for cancer therapeutics. H. Oliveira, E. Pérez-Andrés, J. Thevenot, O. Sandre, E. Berra, S. Lecommandoux. *Journal of Controlled Release* 169, 165-170 (2013)
14. Biologically Active Polymersomes from Amphiphilic Glycopeptides. J. Huang, C. Bonduelle, J. Thevenot, S. Lecommandoux, A. Heise. *J. Am. Chem. Soc.* 134 (1), 119-122 (2012)
15. Polymersomes in polymersomes : multiple loading and permeability tuning. M. Marguet, L. Edembe, S. Lecommandoux. *Angew. Chem. Int. Ed.*, 51, 1173-1176 (2012)
16. Doxorubicin Loaded Magnetic Polymersomes: Theranostic Nanocarriers for MR Imaging and Magneto-Chemotherapy. C. Sanson, O. Diou, J. Thevenot, E. Ibarboure, A. Soum, A. Brulet, S. Miraux, E. Thiaudiere, S. Tan, A. Brisson, V. Dupuis, O. Sandre, S. Lecommandoux. *ACS Nano*, 5(2), 1122-1140 (2011)
17. The intracellular drug delivery and anti tumor activity of doxorubicin loaded poly(γ -benzyl L-glutamate)-b-hyaluronan polymersomes. K.K Upadhyaya, A. N Bhatt, A.K Mishra, B. S. Dwarakanath, S. Jain, C. Schatz, J.-F. Le Meins, A. Farooque, G. Chandraiah, A. K Jain, A. Misrac, S. Lecommandoux. *Biomaterials* 31, 2882-2892 (2010)
18. Polysaccharide-block-polypeptide copolymer vesicles: towards synthetic viral capsids. C. Schatz, S. Louguet, J.-F. Le Meins, S. Lecommandoux. *Angew. Chem. Int. Ed.*, 48, 2572 (2009)