

EDUCATION

- 2010-2014 **Ph.D. in Organic Chemistry**, University of Birmingham, UK
Thesis : "*[Fe-Fe]-Hydrogenase synthetic mimics based on peri-substituted dichalcogenides*"
Supervisor: Dr. Richard S. Grainger
Examiners:
Prof. Simon Woodward, University of Nottingham, UK (external examiner)
Prof. James H. R. Tucker, University of Birmingham, UK (internal examiner)
- 2005-2010 **Bachelor and Master Degree in Pharmaceutical Chemistry and Technologies**, Università di Parma, Italy

RESEARCH EXPERIENCE

- 2018 - 2019 **Postdoctoral Research Fellow**, Laboratoire de Chimie (Functional Materials and Photonics group), ENS de Lyon (UMR CNRS 5182), France
Research topic: synthesis of photosensitizer-nanoscintillator conjugates for deep tissue penetration photodynamic therapy
Supervisor: Dr. Frédéric Chaput
- 2017 - 2018 **Postdoctoral Research Fellow**, iSm2 (STéRéO group), Aix-Marseille Université (UMR CNRS 7313), France
Research topic: diastereoselective boron functionalization, towards the synthesis of chiral cyclic NHC-diborene and boryl species
Supervisors: Dr. Jean-Luc Parrain, Dr. Olivier Chuzel and Dr. Gaëlle Chouraqui
- 2015-2017 **Postdoctoral Research Fellow**, Dalhousie University, Canada
Research topic: synthesis of prodigiosene bioconjugates for anticancer and photodynamic therapy; synthesis of dipyrin and BODIPYs; development of pyrroles new reactivity
Supervisor: Dr. Alison Thompson
- 2010-2014 **Ph.D. student**, University of Birmingham, UK
Thesis: "*[Fe-Fe]-Hydrogenase synthetic mimics based on peri-substituted dichalcogenides*"
Supervisor: Dr. Richard S. Grainger
- 2008-2010 **Master student**, Università di Parma, Italy
Thesis : "*Catalytic and enantioselective vinylogous Mukaiyama-Mannich reactions exploiting pyrrole-based dienoxysilanes*"
Supervisors: Prof. Giovanni Casiraghi and Prof. Franca Zanardi

PUBLICATIONS

- Niogret, G.; Chériaux, C.; Bonhomme, F.; Levi-Acobas, F.; **Figliola, C.**; Ulrich, G.; Gasser, G.; Hollenstein, M. A toolbox for enzymatic modification of nucleic acids with photosensitizers for photodynamic therapy. *RSC Chem. Biol.* **2024**, doi: 10.1039/d4cb00103f.
- **Figliola, C.**; Sutter, A.; Papineau, T.V.; Chériaux, C.; Retailleau, P.; Jacquemin, D.; Ulrich, G. Difluoro Dipyridomethene Boron Complexes: Synthesis, Characterization, and Ab Initio Calculations. *J. Org. Chem.* **2024**, *89*, 3020-3032.
- **Figliola, C.**; Anton, H.; Sutter, C.; Chériaux, C.; Sutter, A.; Mazan, V.; Elhabiri, M.; Didier, P.; Jacquemin, D.; Ulrich, G. Lysosomes targeting pH activable imaging-guided photodynamic agents. *ChemBioChem* **2023**, *24*, e202300139.
- Jagdev, K.; Tanini, D.; Lownes, J.; **Figliola, C.**; Male, L.; Capperucci, A.; Grainger, R. Glutathione peroxidase mimics based on conformationally-restricted, peri-like, 4,5-disubstituted fluorene dichalcogenides. *Org. Biomol. Chem.* **2021**, *19*, 10565-10569.
- Porte, K; Riomet, M.; **Figliola, C.**; Audisio, D.; Taran, F. Click and Bio-Orthogonal Reactions with Mesoionic Compounds. *Chem. Rev.* **2021**, *121*, 6718-6743.
- Aupic, C.; Mohamed, A. A.; **Figliola, C.**; Nava, P.; Tuccio, B.; Chouraqui, G.; Parrain, J.-L.; Chuzel, O. Highly diastereoselective preparation of chiral NHC-boranes stereogenic at boron atom. *Chem. Sci.* **2019**, *10*, 6524-6530.
- **Figliola, C.**; Marchal, E.; Groves, B. R.; Thompson, A. A stepwise synthetic approach is necessary to access γ -conjugates of folate: folate-conjugated prodigiosenes. *RSC Adv.* **2019**, *9*, 14078-14092.
- Savoie, H.; **Figliola, C.**; Marchal, E.; Crabbe, B. W.; Hallett-Tapley, G. L.; Boyle, R. W.; Thompson, A. Photo-induced anticancer activity and singlet oxygen production of prodigiosenes. *Photochem. Photobiol. Sci.* **2018**, *17*, 599-606.
- Beh, M. H. R.; **Figliola, C.**; Lund, K.-L. A. R.; Kajetanowicz, A. K.; Johnsen, A. E.; Aronitz, E. M.; Thompson, A. Regioselective Substituent Effects upon the Synthesis of Dipyrrins from 2-Formyl Pyrroles. *Can. J. Chem.* **2018**, *96*, 779-784.
- **Figliola, C.**; Greening, S.; Lamont, C.; Groves, B. R.; Thompson, A. Decarboxylative arylation of substituted pyrroles N-protected with 2-(trimethylsilyl)ethoxymethyl (SEM). *Can. J. Chem.* **2018**, *96*, 534-542.
- **Figliola, C.**; Robertson, K. N.; Greening, S.; Thompson, A. Asymmetric Dipyrrin and F-BODIPYs Conjugated to Terminal Alkynes and Alkenes. *J. Org. Chem.* **2017**, *82*, 7059-7064.
- Marchal, E.; **Figliola, C.**; Thompson, A. Prodigiosenes conjugated to tamoxifen and estradiol. *Org. Biomol. Chem.* **2017**, *21*, 5410-5427.
- Lund, K. A. R.; **Figliola, C.**; Kajetanowicz, A.; Thompson, A. Synthesis and Anticancer Activity of Prodigiosenes bearing C-Ring Esters and Amides. *RSC Adv.* **2017**, *7*, 18617-18627.

Curriculum Vitae – Carlotta FIGLIOLA

- Melanson, J. A.; **Figliola, C.**; Smithen, D. A.; Kajetanowicz, A. K.; Thompson, A. Probing the hydrolytic reactivity of 2-difluoromethyl pyrroles. *Org. Biomol. Chem.* **2017**, *15*, 144-152.

-**Figliola, C.**; Male, L.; Tsang, C.; Horswell, S. L.; Grainger, R. S. N-Derivatives of peri-substituted dichalcogenide [FeFe]-Hydrogenase mimics: towards photocatalytic dyads for hydrogen production. *Eur. J. Inorg. Chem.* **2015**, 3146-3156.

-**Figliola, C.**; Male, L.; Horton, P. N.; Pitak, M. B.; Coles, S. J.; Horswell, S. L.; Grainger, R. S. [FeFe]-Hydrogenase synthetic mimics based on peri-substituted dichalcogenides. *Organometallics* **2014**, *33*, 4449-446.

FUNDED PROJECT

TABATA – AAP 2023 PCSI: Interdisciplinary approaches to oncogenic processes and therapeutic perspectives: contributions of physics, chemistry and engineering sciences to oncology

SMARTY – AAP 2021 ITI HiFunMat “Starting grant”

ADMINISTRATIVE RESPONSABILITIES

Since 2024	ICPEES	Member of the Institute Council as Representative of the CNRS Researchers
Since 2021	ICPEES	Responsible of the “Bureau des Jeunes Chercheurs”
2016-2017	Dalhousie University	Postdoctoral union treasury management
2013-2014	University of Birmingham	President of postgraduates of the School of Chemistry
2012-2013	University of Birmingham	Representative of postgraduates of the School of Chemistry
2007-2010	Università di Parma	Representative of the students of the Faculty of Pharmacy

ORAL COMMUNICATIONS

- 1^{er} Journée scientifique inter-cancéropole sur les cancers ORL **2024** (Paris, France), **invited speaker**
- 6th International Caparica Conference on Chromogenic and Emissive Material **2024** (Caparica, Portugal)
- Journée de Chimie Organique **2022** (Paris, France)
- 4^{es} Journée du GDR **2022** (Orléans, France)
- 6th International Workshop on Nano and Biophotonics **2022** (Evian, France), **invited speaker**
- Imaging of diagnostic and therapeutic biomarkers in Oncology **2019** (Le Bono, France)
- International Symposium on Dyes and Pigments **2019** (Seville, Spain)
- 9^{èmes} Journées Franco-Italiennes de Chimie **2018**, (Genoa, Italy)
- Maritime Natural Products Conference **2016**, (Halifax, Canada)
- 99th Canadian Chemistry Conference and Exhibition **2016** (Halifax, Canada)
- Dalton 2014, Joint Interest Groups Meeting **2014** (Warwick, UK)
- 10th International Hydrogenase Conference **2013** (Szeged, Hungary)

Curriculum Vitae – Carlotta FIGLIOLA

POSTER PRESENTATIONS

“Développement de plateformes multimodales pour la thérapie photodynamique”
18^{ème} édition de REncontres de Chimie Organique Biologique **2022** (Aussois, France)

“Key modifications on prodigiosin synthetic analogues and effects on biological and anticancer activity”
presented at:

- 10^{èmes} Rencontres de Chimie Organique de Marseille **2018** (Marseille, France)
- XVII European Colloquium on Heterocyclic Chemistry **2016** (Amsterdam, Netherlands)
- Maritime Natural Products Conference **2015**, (St John, Canada)
- 98th Canadian Chemistry Conference and Exhibition **2015** (Ottawa, Canada)

“Studies towards photoactivated [FeFe]-Hydrogenase synthetic analogues”, RSC Organic Division Midlands Meeting **2014** (Nottingham, UK)

“[FeFe]-Hydrogenase synthetic mimics based on peri-substituted dichalcogenides” presented at:

- 27th Heterocyclic & Synthesis Group Postgraduate Symposium **2012** (GlaxoSmithKline, UK)
- Midlands Electrochemistry Group Meeting **2012** (Birmingham, UK)
- School of Chemistry Postgraduate Symposium **2012** (Birmingham, UK)

“Design and synthesis of peri-substituted dichalcogenides as ligands in [FeFe]-clusters” presented at:

- RSC Organic Chemistry Midlands Section Meeting **2012** (Warwick, UK)
- Dalton Division Joint Interest Groups Meeting **2012** (Warwick, UK)

TEACHING EXPERIENCE

2018 (October)	ENS de Lyon	Laboratory demonstrating in general chemistry “aggregation en physique”, 12 h
2015 (January-April)	Dalhousie University	Tutoring in organic chemistry 1 st year Bachelor (L1), 30 h
2010-2013	University of Birmingham	Laboratory demonstrating in organic chemistry 1 st year Bachelor (L1) and Master (M1), ~330 h
2009-2010	Università di Parma	Tutoring in organic chemistry 1 st year Bachelor (L1), 50 h

SUPERVISING EXPERIENCE

2017 (July-August)	iSm2 (STeRéO)	1 st year Bachelor (L1) student, 1 month
2015-2017	Dalhousie University	- 2 nd and 3 rd year Bachelor (L2 and L3) students, 5 month - 2 nd year Master (M2) student, 8 months
2010-2013	University of Birmingham	1 st year Master (M1) student, 8 months

Curriculum Vitae – Carlotta FIGLIOLA

OTHER

Languages:

- Italian (mother tongue)
- English (second language, C2 level)
- French (third language, C1 level)