Fabrizio Vetica
Curriculum Vitae

Rome
25/09/2023

Part I – General Information

Full Name	Fabrizio Vetica

Part II – Education

Type	Year	Institution	Notes
Bachelor Degree	2013	University of Rome "La Sapienza"	*Bachelor Degree (B.Sc.)* in Chemistry. 16/07/2013. Thesis title: " Synthesis of new 3-hydroxy-2(3H)-benzofuranones".
Master's degree	2015	University of Rome "La Sapienza"	*Master's degree (M.Sc.) summa cum laude* in Chemistry. 16/12/2015. Thesis title: "Organocatalytic Stereoselective synthesis of new 3-hydroxy-benzofuranones derivatives" Supervisor: Dr. Tecla Gasperi, Prof. M.A. Loreto, Prof. A. Gambacorta
PhD	2018	RWTH Aachen University, Aachen, Germany	PhD in Organic Chemistry *magna cum laude*. 09/02/2018. Thesis title: "Organocatalytic Asymmetric Synthesis of Isochromanones, Tetranortriterpenoids and Pyrazolone Derivatives". Supervisior: Prof. Dr. Dieter Enders

Part III – Appointments

IIIA – Academic Appointments

Start	End	Institution	Position
Sept-2014	Sept-2014	Università degli Studi Roma Tre, Rome, Italy	Teaching Assistant. Two seminars for the undergraduate students of Chemistry and Laboratory on: *"Inorganic Compounds in water solution: solubility, fractional precipitation and crystallization"* and *"Chemical reactions:*

			thermodynamic and kinetic aspects"
Apr-2014	Sept-2014	Università degli Studi Roma Tre, Rome, Italy	Research Fellow (Borsa di studio per attività di ricerca post-laurea) Topic: *Planning and preparation of chemical didactic experiments to introduce in MIUR LSOSA platform.*
Oct-2015	Oct-2015	Università degli Studi Roma Tre, Rome, Italy	Research Fellow (Borsa di studio per attività di ricerca post-laurea) Research title: *Organocatalysis applied to the synthesis of pyrrole-benzodiazepines*
Oct-2016	Aug-2017	RWTH Aachen University, Aachen, Germany	Teaching Assistant. Teaching assistant for the didactic laboratory of Organic Chemistry "OCF" and "Organisch-chemisches Fortgeschrittenenpraktikum für Lehramtskandidaten"
Feb-2016	Feb-2018	RWTH Aachen University, Aachen, Germany	Scientific co-worker. PhD candidate in Organic Chemistry.
Jan-2019	Sept-2019	Institute of Organic Synthesis and Photoreactivity (ISOF), National Research Council (CNR), Bologna, Italy	Post-doctoral researcher (Co.Co.Co.) funded by Lipinutragen srl. Research project: *Radical reactivity of hydrogen sulfide on organic molecules under biomimetic conditions and biomarkers identification*
Oct-2019	Dec-2019	Alma Mater Studiorum - Università di Bologna, Bologna, Italy	University Teaching Assistant. Course of "*Catalysis in Organic Synthesis*" for the Master Degree in Chemistry
Jan-2020	May-2020	Alma Mater Studiorum - Università di Bologna, Bologna, Italy	University Teaching Assistant. Course of "*Organic Chemistry II with Laboratory*" for the Bachelor Degree in Chemistry
Oct-2019	Jul-2020	Institute of Organic Synthesis and Photoreactivity (ISOF), National Research Council (CNR), Bologna, Italy	Post-doctoral Fellow (Assegnista di ricerca). Research project: *Reactivity of sulfur containing molecules in delayed-release liposomal forms*
Aug-2020	present	University of Rome "La Sapienza", Chemistry Department.	Assistant Professor (RTDA). SSD CHIM-06

IIIB – Other Appointments

Start	End	Position

Apr-2018	Sept-2018	BASF SE, Ludwigshafen, Germany	Lab Leader R&D in the department Synthesis & Homogeneous Catalysis.
Feb-2022	Feb-2032	Qualification for the role of "Professore di II fascia" for the "Settore Concorsuale 03/C1, SSD CHIM-06", Organic Chemistry	

Part IV – Teaching experience

IV A –Courses in Academic Institutions

Accademic year	Institution	Lecture/Course
2014/2015	Università degli Studi Roma Tre, Rome, Italy	Teaching Assistant. Two seminars for the undergraduate students of Chemistry and Laboratory on: *"Inorganic Compounds in water solution: solubility, fractional precipitation and crystallization"* and *"Chemical reactions: thermodynamic and kinetic aspects"*
2016/2017	RWTH Aachen University, Aachen, Germany	Teaching assistant for the didactic laboratory of Organic Chemistry "OCF" and "Organisch-chemisches Fortgeschrittenenpraktikum für Lehramtskandidaten"
2019/2020	Alma Mater Studiorum - Università di Bologna, Bologna, Italy	University Teaching Assistant. Course of "*Catalysis in Organic Synthesis*" for the Master Degree in Chemistry
2019/2020	Alma Mater Studiorum - Università di Bologna, Bologna, Italy	University Teaching Assistant. Course of "*Organic Chemistry II with Laboratory*" for the Bachelor Degree in Chemistry
From 2020/2021 to now	University of Rome "La Sapienza", Faculty of Science	Appointed Lecturer. Organic chemistry (6 CFU, 60 hours) for the bachelor degree in "Technologies for Conservation and Restoration of Cultural Heritage", borrowed for the Degree "Environmental Sciences"
From 2021/2022	University of Rome "La Sapienza", Faculties of Pharmacy and Medicine / Science	Appointed Lecturer. Module Bioorganic Reaction Mechanisms (3 CFU, 24 hours) of the course Bioorganic Chemistry, for the degree in Biochemistry (LM-9)
2022/2023	University of Rome "La Sapienza", Faculty of Science	Appointed Lectured of the course Stereoselective Organocatalysis in the PhD programme in Chemical Sciences (3 CFU, 24 hours)

IV B – Supervisor of Master Thesis Works carried out at Università di Roma La Sapienza

Academic Year	Title of the thesis	Student
2020/2021	Reattività del BF3 elettrogenerato dal liquido ionico imidazolico BMIm-BF4 in reazioni catalizzate da acidi di Lewis	Fernando Jr. Piamonte Magboo
2020/2021	Sintesi stereoselettiva organocatalitica di derivati spirodecalin-ossindolici	Leonardo Straminelli

2020/2021	Reazione di Mannich organocatalitica per la sintesi stereoselettiva di composti β-ammino carbonilici	Mattia Bonuso
2020/2021	Ciclizzazioni indotte da BF3 elettrogenerato: reazione di Povarov e Friedel-Crafts / lattonizzazione	Sofia Melchiorri
2020/2021	Reazione di Michael organocatalitica per la sintesi stereoselettiva di γ-nitrocarbonili	Matteo Lattanzi
2021/2022	Reazione domino multicomponente di formazione di ione imminio/decarbossilazione/cicloaddizione 1,3-dipolare per la sintesi di spiropirrolizidin-ossindoli	Vyali Georgian Moldoveanu
2021/2022	Organocatalisi asimmetrica sequenziale per la sintesi di derivati spirodecalin-ossindolici	Francesco Vicentini
2021/2022	Liquidi ionici come solventi per la reazione di idratazione di alchini catalizzata da BF3	Elisa Galli
2021/2022	Carbon Dots chirali: sintesi elettrochimica e impiego come catalizzatori nella reazione aldolica	Ingrid Izabela Bogles

IV C- Supervisor of PhD thesis work

2022-present	Vyali Georgian Moldoveanu; Cycle XXXVIII

Part V - Society memberberships, Awards and Honors

Year	Title
2013/2018	Member of the American Chemical Society
2021 to present	Royal Society of Chemistry – Member RSC (MRSC), Student Member 2013-2018
From 2020 to present	Member of the Italian Chemical Society (SCI)
2020	**Seal of Excellence** - Certificate delivered by the European Commission for the project proposal titled "IsoF Can - isofurans as integrated biomarkers for cancer in prevention and therapy" submitted under the Horizon 2020 Marie Skłodowska-Curie actions call H2020-MSCA-IF-2019 of 11 September 2019.
2022	Prize in recognition for the research activity funded by Regione Lazio, European program FSE+ 2021-2027, Det. N. G12467 del 20/09/2022
2022	Scholarship from the Organic Chemistry Division of the Italian Chemical Society for the participation to the XL Convegno Nazionale della Divisione di Chimica Organica - CDCO Palermo 2022, Italy

Part VI - Funding Information [grants as PI-principal investigator or I-investigator]

Year	Title	Program	Grant value
2022	SAXSLab Sapienza upgrade: characterization of matter at the nano- and meso-scale with extended applicability ranges and performances	Research Grant for instrument acquisition from Sapienza University (call 2021). **I-investigator**	[redacted]

2022	Development and optimisation of new sustainable multi-step synthetic methodologies via sequential organocatalytic reactions applied to the stereoselective synthesis of potentially bioactive heterocyclic compounds	Research Grant from Sapienza University (call 2021). **PI-principal investigator**	
2022	Chiral carbon Dots as nano-photo-OrganocaTalysis in Stereoselective synthesis - DOTS	Research Grant from Sapienza University (call 2022). **PI-principal investigator**	

Part VII – Organization Activities and Other Institutional Roles

Year	Title
2021 to present	Member of the Didactic Committee for the degree in Biochemistry (LM-9)
2021 to present	Member of the Rooms and Schedules Committee for the degree in Biochemistry (LM-9)
2021 to present	Member of the Didactic Observation Committee for the degree in Technology for Conservation and Restoration of Cultural Heritage (L-43)
2022 to present	Member of the National Commission "Test di Accesso (TOLC)" – section of Con.Scienze

Part VIII – Reviewer Activity

Member of the Editorial Boards of the following international journals: Symmetry (MDPI) as Topic Editor; Frontiers in Chemistry - Green and Sustainable Chemistry as Review Editor.
Guest Editor for the Special Issue "New Frontiers in Asymmetric Organocatalysis" for the journal Symmetry (MDPI).
Assistant Editor of the scientific journal "Asymmetric Catalysis" (from 2013 to 2017)
Reviewer for the following international journals:
Synthesis, Thieme; Synlett, Thieme; SynOpen, Thieme; New Journal of Chemistry, RSC; Organic & Biomolecular Chemistry, RSC; Molecules, MDPI; Chemistry, MDPI; Catalysts, MDPI; Chemical Communication, RSC; Green Chemistry, RSC.

Part IX – Research Activities

Keywords	Brief Description
Organic Synthesis Stereoselective synthesis Asymmetric nano-organocatalysis Heterocyclic compounds Bioactive compounds	Application of small optically pure organic molecules, synthetic or from chiral pool, as homogeneous/heterogeneous catalysts in the stereoselective synthesis of organic compounds, mainly heterocycles, with potential applications in pharmaceutical chemistry, health or other fields. Particular focus is addressed to the optimization of multi-step processes carried out in the same reaction flask, employing domino/one-pot reactions. These procedures simplify remarkably the synthetic methodologies, reducing the number of intermediate and decreasing environmental impact and synthetic costs. The developed procedures are also applied to the total synthesis of bioactive natural compounds.

Keywords	Brief Description
Organic Electrochemistry Organic synthesis Electrochemistry Organic compounds of industrial and pharmaceutical interest	The research activity focuses on the use of ionic liquids as efficient solvent / support electrolyte systems in electrolysis experiments for the synthesis of compounds with potential industrial and pharmaceutical interest. Furthermore, the cathodic reduction of imidazolium ionic liquids allows the generation of N-heterocyclic carbenes (NHC), used as organocatalysts to promote a wide range of organic reactions. These electrochemical systems allow an approach to organic synthesis following the principles of sustainable chemistry through the recycling of these systems

Keywords	Brief Description
Carbon quantum dots Carbon nanoparticles Chiral carbon dots Stereoselective nano-organocatalysis Bioactive nanoparticles	Carbon Dots (CDs) are an emerging class of carbon nanoparticles with sizes up to 10 nm and functional groups on the active surface which can be easily modified. CDs have been largely investigated for their photoluminescence properties. This research line is focused on: synthesis of chiral CDs for nano-organocatalytic applications in heterogeneous catalysis and photocatalysis; synthesis and functionalization of CDs, also bio-based, for biomedical applications; electrochemical and electrocatalytic activity of carbon dots, also biobased; synthesis of chiral carbon dots and their interaction with oligonucleotides for sensing applications.

Keywords	Brief Description
Photocatalytic organic synthesis Organic building blocks Biomarkers development Photo-organocatalysis	This research line focuses on the development and application of photocatalytic processes for the synthesis of chiral intermediates in total synthesis or for the development of biomarkers of oxidative stress. For the former objective, for instance, the photochemical synthesis of cyclobutanols derived by the photoirradiation of 2- (hydroxyimino) aldehydes has been developed. For the latter aim, instead, the UV-promoted radical cis/trans isomerization of natural fatty acids/phospholipids have been employed for the study of potential biomarkers for oxidative stress, e.g. monotrans polyunsaturated free fatty acids, mono-trans cardiolipin and mono-trans plasmalogens.

Part X – Summary of Scientific Achievements

Product type	Number	**Data Base**
Papers	32	Scopus and WOS (highest value)
Papers in the last 5 years	24	Scopus and WOS (highest value)
Total Impact factor*	161.02	Journal Citation Reports (JCR)
Average Impact factor§	5.19	Journal Citation Reports (JCR)
Total Citations	543	Scopus and WOS (for each publication the highest number of citations reported in Scopus or WOS has been considered)
Citations in the last 10 years	543	Scopus and WOS (for each publication the highest number of

		citations reported in Scopus or WOS has been considered)
Average Citations per Product	16.97	Obtained as 543/32
Hirsch (H) index	11	Scopus
H index in the last 10 years	11	Scopus

*The Impact Factor is related to the year of publication (for the most recent publications, if not yet available, the IF related to the previous year of the publication year is used)

§ Obtained by (Total Impact Factor) / 31 since one product does not contribute to the total impact factor (book chapter)

Part XI– Selected Publications

Here follows a list of the 12 publications selected for the evaluation (*indicate corresponding author). The IF is related to the year of publication (for the most recent publications, if not yet available, the IF of the previous year with respect to the publication year is used), the number of citations from Scopus and WOS data bases is also reported.

1. Simon Dochain, **Fabrizio Vetica**, Rakesh Puttreddy, Kari Rissanen, and Dieter Enders "Combining Organocatalysis and Lanthanide Catalysis: A Sequential One-Pot Quadrupole Domino/Diels-Alder Asymmetric Synthesis of Functionalized Tricycles" *Angewandte Chemie International Edition*, **2016**, *55*, 16153; *Angewandte Chemie*, **2016**, *128*, 16387. (IF. 11.994, SCOPUS: 29, WOS: 27).
2. **Fabrizio Vetica**, Pankaj Chauhan, Simon Dochain, Dieter Enders "Asymmetric organocatalytic synthesis of tetrahydropyrans and their application in total synthesis" *Chemical Society Review*, **2017**, *46*, 1661. (IF. 40,182, SCOPUS: 84, WOS: 84).
3. **Fabrizio Vetica**, Stephen Bailey, Pankaj Chauhan, Mathias Turberg, Adjmal Ghaur, Gerhard Raabe, and Dieter Enders "Desymmetrization of Cyclopentendiones via Organocatalytic Cross-Dehydrogenative Coupling" *Advanced Synthesis & Catalysis*, **2017**, *359*, 3729. (IF. 5.123, SCOPUS: 25, WOS: 25).
4. **Fabrizio Vetica**,* Stephen Bailey, Mukesh Kumar, Suruchi Mahajan, Carolina von Essen, Kari Rissanen, Dieter Enders "Palladium Catalyzed [3+2] Cycloaddition of Vinyl Aziridine and Indane-1,3 diones: Diastereo- and Enantioselective Access to Spiro-Pyrrolidines" *Synthesis*, **2020**, *52*, 2038. (IF. 3.157, SCOPUS: 13, WOS: 12).
5. **Fabrizio Vetica**, Anna Sansone, Cesare Meliota, Gessica Batani, Marinella Roberti, Chryssostomos Chatgilialoglu, Carla Ferreri "Free radical-mediated formation of trans-cardiolipin isomers, analytical approaches for lipidomics and consequences for the structural organization of membranes" *Biomolecules*, **2020**, *10*, 1189. (IF. 4.879, SCOPUS: 8, WOS: 8).
6. Martina Bortolami, Leonardo Mattiello, Vincenzo Scarano, **Fabrizio Vetica**, Marta Feroci "In Situ Anodically Oxidized BMIm-BF_4: a Safe and Recyclable BF3 Source" *Journal of Organic Chemistry*, **2021**, 16151. (IF. 4.198, SCOPUS: 9, WOS: 8).
7. Leonardo Straminelli, Francesco Vicentini, Antonio Di Sabato, Carmela Maria Montone, Chiara Cavaliere, Kari Rissanen, Francesca Leonelli, **Fabrizio Vetica*** "Stereoselective synthesis of spiro-decalin oxindole derivatives via sequential organocatalytic Michael–domino Michael/aldol reaction" *Journal of Organic Chemistry*, **2022**, 10454. (IF. 3.6, SCOPUS: 4, WOS: 4).
8. Martina Bortolami, Ingrid Izabela Bogles, Cecilia Bombelli, Fabiana Pandolfi, Marta Feroci,* **Fabrizio Vetica*** "Electrochemical Bottom-Up Synthesis of Chiral Carbon Dots from L-Proline and Their Application as Nano-Organocatalysts in a Stereoselective Aldol Reaction" *Molecules*, **2022**, 5150. (IF. 4.6, SCOPUS: 5, WOS: 4).
9. Antonio Di Sabato, Francesca D'Acunzo, Dario Filippini, **Fabrizio Vetica,*** Antonio Brasiello, Davide Corinti, Enrico Bodo, Cinzia Michenzi, Edoardo Panzetta, Patrizia Gentili* "Unusually chemoselective photocyclization of 2-(hydroxyimino)aldehydes to cyclobutanol oximes: Synthetic,

stereochemical and mechanistic aspects" *Journal of Organic Chemistry*, **2022**, 13803-13818. (IF. 3.6, SCOPUS: 1, WOS: 1).

10. Elisa Sturabotti,* Vyali Georgian Moldoveanu, Alessandro Camilli, Andrea Martinelli, Giovanna Simonetti, Alessio Valletta, Ilaria Serangeli, Alessandro Giustini, Elena Miranda, Luisa Maria Migneco, **Fabrizio Vetica,*** and Francesca Leonelli,* "Thymol-Functionalized Hyaluronic Acid as Promising Preservative Biomaterial for the Inhibition of Candida albicans Biofilm Formation" *ACS Macro Lett.*, **2023**, 1079. (IF. 5.8, SCOPUS: 0, WOS: 0)
11. **Fabrizio Vetica**, Pankaj Chauhan, Suruchi Mahajan, Gerhard Raabe, and Dieter Enders "Asymmetric Organocatalytic Friedel-Crafts Hydroxyalkylation of Indoles Using Electrophilic Pyrazole-4,5-diones" *Synthesis*, **2018**, *50*, 1039. (IF. 2.867, SCOPUS: 24, WOS: 18).
12. Martina Bortolami, Francesca Leonelli, Marta Feroci, **Fabrizio Vetica*** "Step economy in the Stereoselective Synthesis of Functionalized Oxindoles via Organocatalytic Domino/One-pot Reactions" *Current Organic Chemistry*, **2021**, *11*, 1321. (IF. 2.226, SCOPUS: 8, WOS: 8).

Part XII– Direction or Participation in the activities of a research group characterized by international and national collaboration.

Direction of a research group that deals with the synthesis of organic molecules. During my research activity I have also collaborated with several research groups.
Groups of Chemistry Department of University of Rome "La Sapienza": Prof. Francesca Leonelli, Dr. Luisa Maria Migneco, Prof. Andrea Martinelli, Prof. Patrizia Gentili, Dr. Andrea D'Annibale.
Groups of other departments of University of Rome "La Sapienza": Prof.ssa Marta Feroci, Prof.ssa Isabella Chiarotto, Dr. Rita Petrucci, SBAI; Prof. Alessio Valletta, Dipartimento di Biologia Ambientale; Prof. Maria Elena Miranda Banos, Prof. Teresa Rinaldi, Dipartimento di Biologia e Biotecnologia "Charles Darwin"; Prof. Roberto Contestabile, Prof. Martino Luigi di Salvo, Dr. Luigi Filocamo, Dipartimento Scienze Biochimiche; Dr. Andrea Calcaterra, Dipartimento di Chimica e Tecnologie del Farmaco.
National collaborations: Dr. Francesca D'Acunzo, Dr. Francesca Ceccacci, Dr. Cecilia Bombelli, ISB-CNR, Sezione Meccanismi di Reazione, Rome; Dr. Annalisa Masi, IC-CNR, Rome; Dr. Simona Sennato, ISC-CNR, Rome; Dr. Chryssostomos Chatgilialoglu, Dr. Carla Ferreri, Dr. Anna Sansone, ISOF-CNR, Bologna; Dr. Claudia Espro, Università di Messina.
International collaborations: Prof. Kari Rissanen, Department of Chemistry, University of Jyväskylä, Finland; Prof. Atsushi Matsuzawa, Dr. Yusuke Hirata – Tohoku University Japan

Participation in the activities of the research group of Prof. Tecla Gasperi, Dipartimento di Scienze, Università degli Studi Roma Tre, and Prof. Maria Antonietta Loreto, Sapienza Università di Roma characterized by international and national collaborations:
-Prof. Monica Orsini, Dipartimento di Ingegneria, Università degli Studi Roma Tre;
-Dr. Renata Marcia de Figueiredo, Institut Charles Gerhardt Montpellier, UMR 5253 CNRS-UM- ENSCM, Ecole Nationale Supérieure de Chimie, France.
Participation in the activities of the research group of Prof. Dieter Enders, RWTH Aachen University, Aachen, Germany, characterized by international and national collaborations:
- Prof. Kari Rissanen, University of Jyvaskyla
Participation in the activities of the research group of Dr. Chryssostomos Chatgilialoglu and Dr. Carla Ferreri, ISOF-CNR, Bologna, Italy, characterized by international and national collaborations:
- Prof. Marinella Roberti, Dipartimento di Farmacia e Biotecnologie, Alma Mater Studiorum Università di Bologna, Italy;
- Prof. Bronisław Marciniak, Faculty of Chemistry, Adam Mickiewicz University, Poland.

Part – XIII- Oral Communications held at Congresses

1) "Asymmetric organocatalyzed domino Friedel-Crafts/lactonization: a direct synthesis of 3-OH-benzofuranone derivatives with a quaternary stereocenter". DOMINOCAT 1 Symposium, Aachen (Germany), September 2015

2) "Asymmetric organocatalysis in the synthesis of heterocyclic scaffolds". Visual Symposium for Young Organic Chemists of the Division of Organic Chemistry of the Italian Chemical Society (SCI-ViSYOChem 2020), Italy, November 2020.
3) "Asymmetric organocatalysis and cascade reactions in the stereoselective synthesis of heterocyclic scaffolds". XXIX European Colloquium on Heterocyclic Chemistry (ECHC2021), Virtual event, April 2021.
4) Invited speaker. "Stereoselective synthesis of heterocyclic compounds via asymmetric organocatalysis and domino/one-pot reactions". Global Virtual Summit on Catalysis and Chemical Engineering 2021, Virtual event, July 2021
5) "Sustainable approaches for asymmetric synthesis – from domino reactions to Chiral Carbon Dots as nano-organocatalysts". XL Convegno Nazionale della Divisione di Chimica Organica – Italian Chemical Society - CDCO Palermo, September 2022.
6) Invited speaker. "Electrochemical synthesis of amino acid-derived Chiral Carbon Dots as recyclable heterogeneous nano-organocatalysts". YoungInnovation, Rome, September 2022.
7) Invited speaker. "Organocatalysis – from molecular to nanoscale". TRIC Advances in Organic Chemistry. Cagliari, April 2023.

Furthermore the results of my research work have been presented by me with 1 poster presentation, and by my co-workers with poster and oral presentation in additional 18 communications held at national and international congresses from 2017 to 2023.
Furthermore I was involved in the **Organizing Committees** of three national/international conferences (9th New Year's Symposium, RWTH Aachen University; First Symposium for YouNg Chemists (SYNC2022) Rome 2022; XLI Convegno Nazionale della Divisione di Chimica Organica – Italian Chemical Society - CDCO Roma, September 2023)

Part – XIV Complete list of publications, book chapters and patents.

1) **Fabrizio Vetica**, Alessandra Pelosi, Augusto Gambacorta, M. Antonietta Loreto, Martina Miceli and Tecla Gasperi."Catalytic Friedel-Crafts/Lactonization Domino Reaction: a Facile Access to 3-Hydroxy-Benzofuran-2-one Scaffold" *European Journal of Organic Chemistry*, **2014**, *9*, 1899.
2) Tecla Gasperi, Monica Orsini, **Fabrizio Vetica**, Renata Marcia de Figueiredo. "Organocatalytic Asymmetric Multicomponent Reactions" in *Multicomponent Reactions: Concepts and Applications for Design and Synthesis* (Eds Raquel P. Herrera, Eugenia Marques Lopez), Wiley-VCH. Weinheim, **2015**, Chapter 2
3) **Fabrizio Vetica**, Renata Marcia de Figueiredo, Monica Orsini, Daniela Tofani, and Tecla Gasperi "Recent Advances in Organocatalytic Cascade Reactions toward the Formation of Quaternary Stereocenters" *Synthesis*, **2015**, *47*, 2139.
4) **Fabrizio Vetica**, Renata Marcia de Figueiredo, Emilia Cupioli, Martina Miceli, Augusto Gambacorta, M. Antonietta Loreto, and Tecla Gasperi "First Asymmetric Organocatalyzed Domino Friedel-Crafts/Lactonization Reaction in the enantioselective synthesis of the GABAB Receptor Modulator (S)-BHFF" *Tetrahedron Letters*, **2016**, 750.
5) **Fabrizio Vetica**, Jeanne Fronert, Rakesh Puttreddy, Kari Rissanen, and Dieter Enders "Asymmetric organocatalytic synthesis of 4-amino-isochromanones via a direct one-pot intramolecular Mannich reaction" *Synthesis*, **2016**, *48*, 4451.
6) Simon Dochain, **Fabrizio Vetica**, Rakesh Puttreddy, Kari Rissanen, and Dieter Enders "Combining Organocatalysis and Lanthanide Catalysis: A Sequential One-Pot Quadrupole Domino/Diels-Alder Asymmetric Synthesis of Functionalized Tricycles" *Angewandte Chemie International Edition*, **2016**, *55*, 16153; *Angewandte Chemie*, **2016**, *128*, 16387. This paper has been highlighted in: *Synfacts*, **2017**, *13*, 0266.
7) **Fabrizio Vetica**, Pankaj Chauhan, Simon Dochain, Dieter Enders "Asymmetric organocatalytic synthesis of tetrahydropyrans and their application in total synthesis" *Chemical Society Review*, **2017**, *46*, 1661.
8) **Fabrizio Vetica**, Stephen Bailey, Pankaj Chauhan, Mathias Turberg, Adjmal Ghaur, Gerhard Raabe, and Dieter Enders "Desymmetrization of Cyclopentendiones via Organocatalytic Cross-Dehydrogenative Coupling" *Advanced Synthesis & Catalysis*, **2017**, *359*, 3729.

9) Qiang Liu, Xiang-Yu Chen, Sun Li, **Fabrizio Vetica**, Gerhard Raabe, and Dieter Enders "Twostep synthesis of α,β-unsaturated γ-amino acid esters via N-heterocyclic carbene-catalyzed [4+2] cycloaddition of enals and nitroso compounds" *Synthesis*, **2018**, *50*, 127.
10) **Fabrizio Vetica**, Pankaj Chauhan, Suruchi Mahajan, Gerhard Raabe, and Dieter Enders "Asymmetric Organocatalytic Friedel-Crafts Hydroxyalkylation of Indoles Using Electrophilic Pyrazole-4,5-diones" *Synthesis*, **2018**, *50*, 1039.
11) Dieter Enders, Xiang-Yu Chen, Sun Li, **Fabrizio Vetica**, Mukesh Kumar "N-Heterocyclic Carbene Catalyzed Domino Reactions via Two or More Activation Modes" *iScience*, **2018**, 1.
12) Katarzyna Taras-Goslinska†, **Fabrizio Vetica**†, Grażyna Wenska, Sebasti.n Barata-Vallejo, Virginia Triantakostanti, Bronisław Marciniak, and Chryssostomos Chatgilialoglu "Converging fate of the oxidation and reduction of 8-thioguanosine" *Molecules*, **2019**, *24*, 3143. †These authors contributed equally to the paper.
13) **Fabrizio Vetica**,* Stephen Bailey, Mukesh Kumar, Suruchi Mahajan, Carolina von Essen, Kari Rissanen, Dieter Enders "Palladium Catalyzed [3+2] Cycloaddition of Vinyl Aziridine and Indane-1,3 diones: Diastereo- and Enantioselective Access to Spiro-Pyrrolidines" *Synthesis*, **2020**, *52*, 2038.
14) **Fabrizio Vetica**, Anna Sansone, Cesare Meliota, Gessica Batani, Marinella Roberti, Chryssostomos Chatgilialoglu, Carla Ferreri "Free radical-mediated formation of trans-cardiolipin isomers, analytical approaches for lipidomics and consequences for the structural organization of membranes" *Biomolecules*, **2020**, *10*, 1189.
15) **Fabrizio Vetica**,* Martina Bortolami, Rita Petrucci, Daniele Rocco, Marta Feroci* "Electrogenerated NHCs in organic synthesis: ionic liquids vs organic solvents effects" *The Chemical Record*, **2021**, 2130.
16) Martina Bortolami, Isabella Chiarotto, Leonardo Mattiello, Rita Petrucci, Daniele Rocco, **Fabrizio Vetica**, Marta Feroci "Organic Electrochemistry: Synthesis and Functionalization of β-Lactams in the 21st Century" *Heterocyclic Communications*, **2021**, 32.
17) Martina Bortolami, Francesca Leonelli, Marta Feroci, **Fabrizio Vetica*** "Step economy in the Stereoselective Synthesis of Functionalized Oxindoles via Organocatalytic Domino/One-pot Reactions" *Current Organic Chemistry*, **2021**, *11*, 1321.
18) Martina Bortolami, Leonardo Mattiello, Vincenzo Scarano, **Fabrizio Vetica**, Marta Feroci "In Situ Anodically Oxidized BMIm-BF_4: a Safe and Recyclable BF3 Source" *Journal of Organic Chemistry*, **2021**, 16151.
19) Martina Bortolami, Fernando Jr. Piamonte Magboo, Rita Petrucci, **Fabrizio Vetica**, Giuseppe Zollo, Marta Feroci "Electrogenerated BF3 From Tetrafluoroborate-Based Ionic Liquids: Theoretical And Experimental Studies Towards Selective Styrene Oxide Isomerization" *Journal of the Electrochemical Society*, **2021**, 115501.
20) **Fabrizio Vetica**, Fabiana Pandolfi, Luca Pettazzoni, Francesca Leonelli, Martina Bortolami "Organocatalyst design for the stereoselective annulation towards bicyclic diketones and analogues" *Symmetry*, **2022**, 355.
21) **Fabrizio Vetica**, Anna Sansone, Carla Ferreri, Chryssostomos Chatgilialoglu "A Convenient Route to Mono-Trans Polyunsaturated Free Fatty Acids" *Journal of Chemical Research*, **2022**, 1090908.
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PhD Dissertation
Fabrizio Vetica "Organocatalytic Asymmetric Synthesis of Isochromanones, Tetranortriterpenoids and Pyrazolone Derivatives" ISBN: 978-3-8439-3504-3. Verlag Dr. Hut, Munchen *PhD dissertation*, **2018**. (Deutsche Nationalbibliothek, ord. no. 1155056213).

Part – XV Third Mission activities (Terza Missione)

1) Speaker, Christmas Seminars**,** Department of Chemistry, Sapienza University of Rome, December 2021. Events organized for high school students.
2) Christmas Seminars, Sapienza Università di Roma, December 2022. Didactic laboratory experiments for high school students

Roma 25/09/2023