

Curriculum Vitae Dr. Fabio Pesciaioli

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General Info

Name Fabio Pesciaioli

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Work experience

From 28th of August 2020 until now

Fixed-term researcher (RTDa) at the Department of Physical and Chemical Sciences –
L'Aquila University

Dr. FP is currently interested on the fields of Asymmetric Catalysis and Sustainable Chemistry. In particular, he is focusing his efforts on the development of new synthetic transformations able to merge Organocatalysis, Transition Metal Catalysis and Green Chemistry.



From 15th of January 2017 until 31st of March 2020

Post-Doc in the Prof. Ackermann Group at Goettingen University

Dr. F.P. developed new methodologies in the field of Asymmetric Transition metal catalyzed C-H activation especially focusing complexes of 3d Earth abundant transition metals in combination with chiral ligands. In this contest he developed a new class of chiral carboxylic acids that was employed on the “Enantioselective Cobalt(III)-Catalyzed C-H Activation Enabled by Chiral Carboxylic Acid Cooperation”



Form 1st of August 2016 until 31th of December 2016

Visiting scientist in the Prof. Ackermann Group at Goettingen University

Dr. F.P. developed new methodologies in the field of Transition metal catalyzed C-H activation merging this sparkling research field with flow chemistry.

Form 1st of January 2015 until July 2016

Fellowship (Cariplo Foundation) at University of Pavia

Dr. F.P. did a second Post-Doc at the University of Pavia as a Cariplo Fellow. Dr. F.P. focused his research activity on developing new synthetic strategies combining Organometallic chemistry with Organocatalysis.



Grant amount: 41250€

Post-Doc from 1/05/2011 until 31/07/2014

Post-Doc at Max Planck Institut für Kohlenforschung in the group of Prof. Benjamin List

During his Post-Doc at Max Planck Institut für Kohlenforschung, Dr. F.P. focused on acid organocatalysis developing first asymmetric [3,3]-diaza-Cope rearrangement via Brønsted acid catalysis and then he shifted his attention on a new motif for both Brønsted and Lewis acid catalysis able to activate a reaction on ppm level of catalyst loading. Moreover, Dr. F. P. was selected as a team-member for the design and the optimization of a multi-gram scale reaction in collaboration with Pharmazell GmbH.



MAX-PLANCK-GESELLSCHAFT

Education

PhD in Chemical Sciences from 01/01/2008 until 19/04/2011

Bologna University, Prof. Bartoli and Prof. Melchiorre Group.

During his PhD Dr. F.P. studied the enantioselective activation of encumbered carbonyl compounds *via* Aminocatalysis and the asymmetric functionalization of Oxindoles.



From 01/06/2009 until 31/12/2009

Visiting PhD student in Prof. Rüping's group at RWTH Aachen University.



Master Degree from 2005 until 20/07/2007, mark: *cum laude*

M.Sc. degree in Products, Materials and Processes for the industrial chemistry (class 81/S)

Thesis: Organocatalytic asymmetric addition of C-Nucleophiles and O-Nucleophiles to α,β -unsaturated ketones through iminium-ion activation.

Supervisors: Prof. Paolo Melchiorre, Prof. Giuseppe Bartoli



Bachelor Degree from 2001 until 2005, mark: *cum laude*

Bachelor in Industrial Chemistry (class 21)

Thesis: Betti's Amines : synthesis, characterization and study of some properties.

Supervisor: Prof. Goffredo Rosini



Fields of Interest

- Asymmetric Catalysis
- Organocatalysis
- Transition Metal Catalysis
- Green Chemistry

Talks and Teaching

Lecture at Burgos University, Faculty of Chemistry 08-11-2018.

Titolo: "Asymmetric catalysis with chiral Brønsted acids: from Organocatalysis to enantioselective C–H activation"

Lecture : XXXVI “Congresso della società chimica italiana divisione di chimica organica”, Bologna, from 13-09-2015 until 17-09-2015.

Title: "Towards High-Performance Lewis Acid Organocatalysis".

Lecture : “Giornata della chimica dell’Emilia Romagna”, Parma, 26/11/2010.

Title: “Primary Amine Catalyzed Organo-cascade Reaction for the Functionalization of Encumbered α,β -Unsaturated Carbonyl Compounds”.

- Teaching at MIUR institutions

Course for Phd students “Asymmetric Organocatalysis” (3 CFU) – PhD School of Chemical and Pharmaceutical Sciences – University of Pavia, 2016

Language: English

- Teaching at foreign institutions

Dr. F.P. has been selected as committee member for the final evaluation of the PhD in Chemical Sciences at the University of Burgos, Faculty of Chemistry (Burgos, Spain) 09-11-2018.

Bibliographic Metrics

Number of Articles	18
Sum of the Times Cited:	1762
Sum of Times Cited without self-citations:	1406
Citing Articles:	1392
Citing Articles without self-citations:	1098
Average Citations per Item:	102.43
h-index:	15

List of Publications

18 “Asymmetric Organocatalysis Accelerated via Self-Assembled Minimal Structures”

Sinibaldi, A.; Della Penna, F.; Ponzetti, M.; Fini, F.; Marchesan, S.; Baschieri, A.; Pesciaioli, F.; Carlone, A. *Eur. J. Org. Chem.* **2021**, 2021 (39), 5403–5406.

17 “ π -Extended Polyaromatic Hydrocarbons by Sustainable Alkyne Annulations through Double C-H/N-H Activation”

E. Gońka, L. Yang, R. Steinbock, F. Pesciaioli, R. Kuniyil, L. Ackermann, *Chem. Eur. J.* **2019**, *25*, 16246.

16 “Enantioselective C-H Activation with Earth-Abundant 3d Transition Metals”

J. Loup, U. Dhawa, F. Pesciaioli, J. Wencel-Delord, L. Ackermann, *Angew. Chem. Int. Ed.* **2019**, *58*, 12803.

15. “Enantioselective Cobalt(III)-Catalyzed C-H Activation Enabled by Chiral Carboxylic Acid Cooperation”

F. Pesciaioli,[‡] U. Dhawa,[‡] J. C. A. Oliveira, R. Yin, M. John, L. Ackermann, *Angew. Chem. Int. Ed.* **2018**, *57*, 15425.

‡= these two authors have contributed equally to this article

14. “Synergistic Manganese(I) C-H Activation Catalysis in Continuous Flow: Chemoselective Hydroarylation”

H. Wang,[‡] F. Pesciaioli,[‡] J. C. A. Oliveira, S. Warratz, L. Ackermann, *Angew. Chem. Int. Ed.* **2017**, *56*, 15063.

13. “Towards High-Performance Lewis Acid Organocatalysis”

Ratjen, L., van Gemmeren, M., Pesciaioli, F. and List, B. *Angew. Chem. Int. Ed.* **2014**, *53*, 8765.

12. “Catalytic Asymmetric Benzidine Rearrangement”

De, C.K., Pesciaioli, F. and List, B., *Angew. Chem. Int. Ed.*, **2013**, *52*: 9293

11. “Cinchona Alkaloid-Catalyzed Enantioselective Direct Aldol Reaction of N-Boc-Oxindoles with Polymeric Ethyl Glyoxylate”

Pesciaioli, F., Righi, P., Mazzanti, A., Gianelli, C., Mancinelli, M., Bartoli, G. and Bencivenni, G. *Adv. Synth. Catal.* **2011**, *353*, 2953.

10. “An Easy Entry to Optically Active Spiroindolinones: Chiral Bronsted Acid-Catalysed Pictet-Spengler Reactions of Isatins”

Duce, S., Pesciaioli, F., Gramigna, L., Bernardi, L., Mazzanti, A., Ricci, A., Bartoli, G. and Bencivenni, G. *Adv. Synth. Catal.* **2011**, *353*, 860.

9. “Organocatalytic Michael-Alkylation Cascade: The Enantioselective Nitrocyclopropanation of Oxindoles”

Pesciaioli, F., Righi, P., Mazzanti, A., Bartoli, G. and Bencivenni, G., *Chem. Eur. J.*, **2011**, *17*: 2842

8. “Organocatalytic asymmetric conjugate additions of oxindoles and benzofuranones to cyclic enones”

Pesciaioli, F., Tian, X., Bencivenni, G., Bartoli, G., Melchiorre, P., *Synlett* **2010**, *11*, 1704.

7. “Asymmetric Catalytic Aziridination of Cyclic Enones”.

De Vincentiis, F., Bencivenni, G., Pesciaioli, F., Mazzanti, A., Bartoli, G., Galzerano, P. and Melchiorre, P., *Chem. Asian J.*, **2010**, *5*: 1652.

6. “Asymmetric Organocatalytic Cascade Reactions with α -Substituted α,β -Unsaturated Aldehydes”

Galzerano, P.,[‡] Pesciaioli, F.,[‡] Mazzanti, A., Bartoli, G. and Melchiorre, P. *Angew. Chem. Int. Ed.*, **2009** *48*, 7892.

‡= these two authors have contributed equally to this article

5. “Targeting Structural and Stereochemical Complexity by Organocascade Catalysis: Construction of Spirocyclic Oxindoles Having Multiple Stereocenters”

Bencivenni, G., Wu, L.-Y., Mazzanti, A., Giannichi, B., Pesciaioli, F., Song, M.-P., Bartoli, G. and Melchiorre, P., *Angew. Chem. Int. Ed.*, **2009** *48*, 7200.

4. “Asymmetric Iminium Ion Catalysis with a Novel Bifunctional Primary Amine Thiourea: Controlling Adjacent Quaternary and Tertiary Stereocenters”

Galzerano, P., Bencivenni, G., Pesciaioli, F., Mazzanti, A., Giannichi, B., Sambri, L., Bartoli, G. and Melchiorre, P. *Chem. Eur. J.*, **2009**, *15*, 7846.

3. “Organocatalytic asymmetric aziridination of enones”

Pesciaioli, F., De Vincentiis, F., Galzerano, P., Bencivenni, G., Bartoli, G., Mazzanti, A. and Melchiorre, P., *Angew. Chem. Int. Ed.*, **2008**, *47*: 8703.

2. “Organocatalytic asymmetric p-hydroxylation of α,β -unsaturated ketones”

Carlone, A., Bartoli, G., Bosco, M., Pesciaioli, F., Ricci, P., Sambri, L. and Melchiorre, P., *Eur. J. Org. Chem.*, **2007**: 5492.

1. “Organocatalytic Asymmetric Friedel-Crafts Alkylation of Indoles with Simple α,β -Unsaturated Ketones”

Bartoli, G., Bosco, M., Carlone, A., Pesciaioli, F., Sambri, L., Melchiorre, P., *Org. Lett.* **2007**, *9*, 1403.