

CURRICULUM VITAE

Tomas Morosinotto

Born 26th December 1976 in Bassano del Grappa VI (Italy)

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Research Activity:

2018 – date: Full professor in Plant Physiology at the Biology Department at the University of Padova. Present research focuses on the study of photosynthesis in different organisms investigating how evolution shaped the regulation of this metabolic process going from algae, mosses and plants. Information from basic research is exploited for the development of application of algae for production of biomolecules. The objective of the research is to improve algae efficiency in converting light into biomass. Key limiting steps of photosynthesis are being identified by integrating biophysical, biochemical and functional investigation of algae photosynthetic apparatus with genome, transcriptome, lipidome and metabolome analysis. Information obtained are exploited to develop genetically engineered strains with improved productivity. This project was awarded in 2012 of an ERC starting Grant entitled : “BioLEAP— Biotechnological optimization of light use efficiency in algae photobioreactors”.

At present I am supervising the work of three PhD students, three post-docs, one technician as well as five master students.

2014-2017: Associate Professor in Biochemistry at the Biology Department at the University of Padova

2007 – 2013 : Assistant professor in Biochemistry at the Sciences faculty of University of Padua.

October 2005 – 2006: Permanent CNRS researcher working at the LGBP (Laboratoire de Biophysique et Génétique des Plantes) in the science Faculty, Marseille, (France). Research activity was dedicated to enzymes of carotenoid biosynthesis. Renounced to the position, opting for a position as assistant professor at University of Padua.

2005 – September 2005: Post-doc (grant awarded by the French Research ministry on a research proposal) working at LBC (directed by Dr. David Pignol) at DEVM, CEA, Cadarache (France). The objective of the work was the structural characterization by X-ray crystallography of violaxanthin deepoxidase (VDE), the enzyme responsible for zeaxanthin synthesis in plants. Contract was ended early, opting for a permanent position as researcher.

2002 / 31st January 2005: PhD thesis under the supervision of Prof. Bassi, entitled: “Light Harvesting Complexes in Higher Plants: Role, Organization and Regulation”. The main subject was the characterization of the antenna system of Photosystem I.

Teaching Activity.

Current teaching activities, all lectures:

- Biotechnology for Bioenergy production (32 Hours), Msc in Industrial Biotechnology (in English)
- Advanced Biochemistry (16 H), Msc in Molecular Biology (in English)
- Plant Ecophysiology (48 H), Msc in evolutionary Biology
- Introduction to Plant Physiology (16 H), Bsc in Molecular Biology

Past teaching:

2014 – 2017: “Structural Biochemistry” to Bsc in Molecular Biology (56 H Lectures, 16 H practice)

2006 - 2010 : “Methods in Biochemistry” (40 H lectures, 16 H practice) Bsc in Molecular Biology

2006: Course in “plants response to environment” (20 hours, in French) in the biology degree in the Université de la Méditerranée, Marseille, France.

Teaching Organization:

2014-2017: member of the steering committee Bsc and Msc in Molecular Biology

2018 : steering committee of Msc in Industrial Biotechnology

Since 2007: Supervisor of > 40 Master degree students (9 months of laboratory experience) in Molecular Biology/ Biotechnology/ Evolutionary Biology, University of Padua.

PUBLICATIONS IN INTERNATIONAL JOURNALS WITH PEER REVIEW

Publication statistics:

101 publications in peer-reviewed journals, 11 as first author, 34 as last, 31 as corresponding author

Total IF: 504.5; Total IF as first or last Author: 226.1; Average IF 5.19; H index (from ISI web of science)

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101. Battistuzzi M, Cocola L, Salasnich B, Erculiani S, Alei E, **Morosinotto T**, Claudi R, Poletto L and La Rocca R. A new remote sensing-based system for the monitoring and analysis of growth and gas exchange rates of photosynthetic microorganisms under simulated non-terrestrial conditions” - «Frontiers in Plant Science. Frontiers in Plant Sciences 2020 doi: 10.3389/fpls.2020.00182
100. Bellan A, Bucci F, Perin G, Alboresi A, **Morosinotto T***. Photosynthesis regulation in response to fluctuating light in the secondary endosymbiont alga *Nannochloropsis gaditana*. Plant Cell Physiol. 2019 in press doi: 10.1093/pcp/pcz174. * Author for correspondence
99. Castaldello C, Sforza E, Cimetta E, **Morosinotto T**, Bezzo F. Microfluidic Platform for Microalgae Cultivation under Non-limiting CO₂ Conditions. Industrial and Engineering Chemistry Research 2019 58(39): 18036-18045
98. Alboresi A, Storti M, Cendron L, **Morosinotto T**. Role and regulation of class-C flavodiiron proteins in photosynthetic organisms. Biochem J. 2019 476(17):2487-2498.
97. Gerotto C, Trotta A, Bajwa AA, Mancini I, **Morosinotto T**, Aro EM. Thylakoid protein phosphorylation dynamics in a moss mutant lacking serine/threonine protein kinase STN8. Plant Physiol. 2019 180(3):1582-1597
96. Albarello A, Simionato D, **Morosinotto T**, Bezzo F. Model-Based Optimization of Microalgae Growth in a Batch Plant. Industrial and Engineering Chemistry Research 2019 58(13), 5121-5130
95. Sello S, Meneghesso A, Alboresi A, Baldan B, **Morosinotto T***. Plant biodiversity and regulation of photosynthesis in the natural environment. Planta. 2019 249(4):1217-1228. * Author for correspondence
94. Perin G, Bellan A, Bernardi A, Bezzo F, **Morosinotto T***. The potential of quantitative models to improve microalgae photosynthetic efficiency. Physiol Plant. 2019 166(1), 380-391 * Author for correspondence
93. Storti M, Alboresi A, Gerotto C, Aro EM, Finazzi G, **Morosinotto T***. Role of cyclic and pseudo-cyclic electron transport in response to dynamic light changes in *Physcomitrella patens*. Plant Cell Environ. 2019 42(5), 1590-1602 * Author for correspondence
92. Alboresi A, Storti M, **Morosinotto T***. Balancing protection and efficiency in the regulation of photosynthetic electron transport across plant evolution. New Phytol. 2019 221(1):105-109. * Author for correspondence
91. Alloreant G, Byrdin M, Carraretto L, **Morosinotto T**, Szabo I, Finazzi G. Global spectroscopic analysis to study the regulation of the photosynthetic proton motive force: A critical reappraisal. Biochim Biophys Acta Bioenerg. 2018 1859(9):676-683.
90. De Luca R, Bernardi A, Meneghesso A, **Morosinotto T**, Bezzo F Modelling the photosynthetic electron transport chain in *Nannochloropsis gaditana* via exploitation of absorbance data. Algal Research 2018 33, 430-439
89. Storti M, Costa A, Golin S, Zottini M, **Morosinotto T**, Alboresi A. Systemic Calcium Wave Propagation in *Physcomitrella patens*. Plant Cell Physiol. 2018 59(7):1377-1384.
88. Formentin E, Sudiro C, Perin G, Riccadonna S, Barizza E, Baldoni E, Lavezzo E, Stevanato P, Sacchi GA, Fontana P, Toppo S, **Morosinotto T**, Zottini M, Lo Schiavo F. Transcriptome and Cell

- Physiological Analyses in Different Rice Cultivars Provide New Insights Into Adaptive and Salinity Stress Responses. *Front Plant Sci.* 2018 9:204.
87. Larosa V, Meneghesso A, La Rocca N, Steinbeck J, Hippler M, Szabo I, **Morosinotto T**. * Mitochondria affects photosynthetic electron transport and photo-sensitivity in a green alga. *Plant Physiol.* 2018 176(3):2305-2314
 86. Perin G, Bernardi A, Bellan A, Bezzo F and **Morosinotto T*** A Mathematical model to guide Genetic Engineering of Photosynthetic Metabolism. *Metabolic Engineering* 2017 44:337-347 * Author for correspondence
 85. Perin G, Simionato D, Bellan A, Carone M, Occhipinti A, Maffei ME, **Morosinotto T*** Cultivation in Industrially Relevant Conditions Has a Strong Influence on Biological Properties and Performances of *Nannochloropsis gaditana* Genetically Modified Strains. *Algal Research* 2017, 259:63-72. * Author for correspondence
 84. Bernardi A, Nikolaou A, Meneghesso A, Chachuat B, **Morosinotto T**, Bezzo F. Semi-empirical modeling of microalgae photosynthesis in different acclimation states - Application to *N. gaditana*. *J Biotechnol.* 2017 Oct 10;259:63-72
 83. Chukhutsina VU, Fristedt R, **Morosinotto T**, Croce R. Photoprotection strategies of the alga *Nannochloropsis gaditana*. *Biochim Biophys Acta.* 2017 1858(7):544-552.
 82. Gris B, Sforza E, **Morosinotto T**, Bertuccio A, La Rocca N. Influence of light and temperature on growth and high value molecules productivity from *Cyanobacterium aponinum*. *Journal of Applied Phycology* 2017 29 (4): 1781–1790
 81. Ilík P, Pavlovič A, Kouřil R, Alboresi A, **Morosinotto T**, Allahverdiyeva Y, Aro EM, Yamamoto H, Shikanai T. Alternative electron transport mediated by flavodiiron proteins is operational in organisms from cyanobacteria up to gymnosperms. *New Phytol.* 2017 May;214(3):967-972.
 80. Squarcina A, Soraru A, Rigodanza F, Carraro M, Brancatelli G, Carofiglio T, Geremia S, Larosa V, **Morosinotto T**, Bonchio M. Merged Heme and Non-Heme Manganese Cofactors for a Dual Antioxidant Surveillance in Photosynthetic Organisms. *ACS Catalysis* 2017 7(3): 1971-1976
 79. Dolch LJ, Rak C, Perin G, Tourcier G, Broughton R, Leterrier M, **Morosinotto T**, Tellier F, Faure JD, Falconet D, Jouhet J, Sayanova O, Beaudoin F, Marechal E. A palmitic acid elongase affects eicosapentaenoic acid and plastidal monogalactosyldiacylglycerol levels in *Nannochloropsis*. *Plant Physiol.* 2017 Jan;173(1):742-759.
 78. Teymouri A, Barbera E, Sforza E, **Morosinotto T**, Bertuccio A, Kumar S. Integration of Biofuels Intermediates Production and Nutrients Recycling in the Processing of a Marine Algae. *AIChE Journal* 2017 63(5): 1494-1502.
 77. Azadi Chegeni F, Perin G, Sai Sankar Gupta KB, Simionato D, **Morosinotto T**, Pandit A. Protein and lipid dynamics in photosynthetic thylakoid membranes investigated by in-situ solid-state NMR. *Biochim Biophys Acta.* 2016 1857(12):1849-1859.
 76. Gerotto C, Alboresi A, Meneghesso A, Jokel M, Suorsa M, Aro EM, **Morosinotto T***, Flavodiiron proteins act as safety valve for electrons in *Physcomitrella patens*. *PNAS* 2016 113(43):12322-12327 * Author for correspondence
 75. Perin G, Cimetta E, Monetti F, **Morosinotto T**, Bezzo F. Novel micro-photobioreactor design and monitoring method for assessing microalgae response to light intensity. *Algal Research* 2016 19: 69-76
 74. De Bortoli S, Teardo E, Szabò I, **Morosinotto T**, Alboresi A. Evolutionary insight into the ionotropic glutamate receptor superfamily of photosynthetic organisms. *Biophys Chem.* 2016 218:14-26.

73. Meneghesso A, Simionato D, Gerotto C, La Rocca N, Finazzi G, **Morosinotto T***. Photoacclimation of photosynthesis in the Eustigmatophycean *Nannochloropsis gaditana*. *Photosynth Res.* 2016 129(3):291-305. * Author for correspondence
72. Alboresi A, Le Quiniou C, Yadav SKN, Scholz M, Meneghesso A, Gerotto C, Simionato D, Hippler M, Boekema EJ, Croce R and **Morosinotto T***. Conservation of core complex subunits shaped structure and function of Photosystem I in the secondary endosymbiont alga *Nannochloropsis gaditana*. *New Phytologist* 2017 213(2):714-726. * Author for correspondence
71. Albanese P, Manfredi M, Meneghesso A, Marengo E, Saracco G, Barber J, **Morosinotto T**, Pagliano C. Dynamic reorganization of photosystem II supercomplexes in response to variations in light intensities. *Biochim Biophys Acta.* 2016 1857(10):1651-60
70. Alboresi A, Perin G, Vitulo N, Diretto G, Block MA, Jouhet J, Meneghesso A, Valle G, Giuliano G, Maréchal E, **Morosinotto T***. Light Remodels Lipid Biosynthesis in *Nannochloropsis gaditana* by Modulating Carbon Partitioning Between Organelles. *Plant Physiol.* 2016 171(4):2468-82 * Author for correspondence
69. Bernardi A, Nikolaou A, Meneghesso A, **Morosinotto T**, Chachuat B, Bezzo F. High-Fidelity Modelling Methodology of Light-Limited Photosynthetic Production in Microalgae. *PLoS One.* 2016 7;11(4):e0152387.
68. Barbera E, Sforza E, Kumar S, **Morosinotto T**, Bertucco A. Cultivation of *Scenedesmus obliquus* in liquid hydrolysate from flash hydrolysis for nutrient recycling. *Bioresour Technol.* 2016 207:59-66.
67. Perin G, Bellan A, Segalla A, Meneghesso A, Alboresi A and **Morosinotto T*** Generation of random mutants to improve light-use efficiency of *Nannochloropsis gaditana* cultures for biofuel production *Biotech for Biofuels* 2015 8:161 * Author for correspondence
66. Sforza E, Calvaruso C, Meneghesso A, **Morosinotto T**, Bertucco A. Effect of specific light supply rate on photosynthetic efficiency of *Nannochloropsis salina* in a continuous flat plate photobioreactor. *Appl Microbiol Biotechnol.* 2015 99(19):8309-18.
65. Gerotto C, Franchin C, Arrigoni G, **Morosinotto T***. In vivo Identification of Photosystem II Light Harvesting Complexes Interacting with PSBS. *Plant Physiol.* 2015 168(4):1747-61 * Author for correspondence
64. Simionato D, Basso S, Zaffagnini M, Lana T, Marzotto F, Trost P, **Morosinotto T***. Protein redox regulation in the thylakoid lumen: The importance of disulfide bonds for violaxanthin de-epoxidase. *FEBS Lett.* 2015 589(8):919-23. *Author for correspondence
63. Nikolaou A, Bernardi A, Meneghesso A, Bezzo F, **Morosinotto T**, Chachuat B. A model of chlorophyll fluorescence in microalgae integrating photoproduction, photoinhibition and photoregulation. *J Biotechnol.* 2015 Jan 20;194:91-9. doi: 10.1016/j.jbiotec.2014.12.001. Epub 2014 Dec 16.
62. Ferrigo D, Galla G, Sforza E, **Morosinotto T**, Barcaccia G, Ceschi Berrini C. Biochemical characterization and genetic identity of an oil-rich *Acutodesmus obliquus* isolate *Journal of Applied Phycology* 2015 27 (1): 149-161
61. La Rocca N, Sciuto K, Meneghesso A, Moro I, Rascio N, **Morosinotto T**. Photosynthesis in extreme environments: responses to different light regimes in the Antarctic alga *Koliella antarctica*. *Physiol Plant.* 2015 Apr;153(4):654-67
60. Carbonera D, Agostini A, Di Valentin M, Gerotto C, Basso S, Giacometti GM, **Morosinotto T**. Photoprotective sites in the violaxanthin-chlorophyll a binding Protein (VCP) from *Nannochloropsis gaditana*. *Biochim Biophys Acta.* 2014 1837(8):1235-46

59. Bernardi A, Perin, G, Sforza E, Galvanin F, **Morosinotto T**, Bezzo, F. An identifiable state model to describe light intensity influence on microalgae growth. *Industrial & Engineering Chemistry Research*. 2014 53 (16): 6738-6749
58. Gris B, **Morosinotto T**, Giacometti GM, Bertucco A, Sforza E. Cultivation of *Scenedesmus obliquus* in Photobioreactors: Effects of Light Intensities and Light-Dark Cycles on Growth, Productivity, and Biochemical Composition. *Appl Biochem Biotechnol*. 2014 172(5):2377-89
57. Basso S, Simionato D, Gerotto C, Segalla A, Giacometti GM, **Morosinotto T**. *Characterization of the photosynthetic apparatus of the Eustigmatophycean *Nannochloropsis gaditana*: Evidence of convergent evolution in the supramolecular organization of photosystem I. *Biochim Biophys Acta*. 2014 1837(2):306-314. *Author for correspondence
56. Corteggiani Carpinelli E, Telatin A, Vitulo N, Forcato C, D'Angelo M, Schiavon R, Vezzi A, Giacometti GM, **Morosinotto T**, Valle G. Chromosome scale genome assembly and transcriptome profiling of *Nannochloropsis gaditana* in nitrogen depletion. *Mol Plant*. 2014 7(2):323-35
55. Pinnola A, Dall'osto L, Gerotto C, **Morosinotto T**, Bassi R, Alboresi A. Zeaxanthin Binds to Light-Harvesting Complex Stress-Related Protein to Enhance Nonphotochemical Quenching in *Physcomitrella patens*. *Plant Cell*. 2013 25(9):3519-34.
54. Carraretto L, Formentin E, Teardo E, Checchetto V, Tomizioli M, **Morosinotto T**, Giacometti GM, Finazzi G, Szabó I. A Thylakoid-Located Two-Pore Potassium Channel Controls Photosynthetic Light Utilization in Plants. *Science*. 2013 342 (6154), 114-118
53. Simionato D, Basso S, Giacometti GM, **Morosinotto T***. Optimization of light use efficiency for biofuel production in algae. *Biophys Chem*. 2013 182, 71-78. *Author for correspondence
52. Gerotto C, **Morosinotto T***. Evolution of photoprotection mechanisms upon land colonization: evidences of PSBS dependent NPQ in late Streptophyte algae. *Physiol Plant*. 2013 149 (4), 583-598. *Author for correspondence
51. Pandit A, Reus M, **Morosinotto T**, Bassi R, Holzwarth AR, de Groot HJ. An NMR comparison of the light-harvesting complex II (LHCII) in active and photoprotective states reveals subtle changes in the chlorophyll a ground-state electronic structures. *Biochim Biophys Acta*. 2013 1827(6):738-44
50. Simionato D, Block MA, La Rocca N, Jouhet J, Maréchal E, Finazzi G, **Morosinotto T***. Response of *Nannochloropsis gaditana* to nitrogen starvation includes a de novo biosynthesis of triacylglycerols, a decrease of chloroplast galactolipids and a reorganization of the photosynthetic apparatus. *Eukaryotic Cell* 2013 12(5):665-76 *Author for correspondence
49. Gerotto C, Alboresi A, Giacometti GM, Bassi R and **Morosinotto T*** Coexistence of plant and algal energy dissipation mechanisms in the moss *Physcomitrella patens*. *New Phytologist* 2012 196(3):763-73
48. Carbonera D, Gerotto C, Posocco B, Giacometti GM and **Morosinotto T**. NPQ activation reduces chlorophyll triplet state formation in the moss *Physcomitrella patens* *BBA – Bioenergetics* 2012 1817(9):1608-15.
47. Sforza E, Simionato D, Giacometti GM, Bertucco A and **Morosinotto T***. Optimization of photosynthetic efficiency for algae growing in a photobioreactor using alternation of light and dark cycles. *PLoS ONE* 2012 7(6):e38975 *Author for correspondence
46. Fufezan C, Simionato D and **Morosinotto T***. Identification of key residues for pH dependent activation of violaxanthin de-epoxidase from *Arabidopsis thaliana*. *PLoS ONE* 2012 7(4):e35669 *Author for correspondence
45. Sforza E, Bertucco A, **Morosinotto T**, and Giacometti GM. Photobioreactors for microalgal growth and oil production with *Nannochloropsis salina*: from lab-scale experiments to large-scale design. *Chemical Engineering Research and Design (ChERD)*. 2012 90(9): 1151-1158

44. Sforza E, Cipriani R, **Morosinotto T**, Bertucco A and Giacometti GM. Excess CO₂ supply inhibits mixotrophic growth of *Chlorella protothecoides* and *Nannochloropsis salina*. *Bioresource Technology* 2012 104:523-9.
43. Alboresi A, Gerotto C, Cazzaniga S, Bassi R, **Morosinotto T**. A red shifted antenna protein associated to photosystem II in *Physcomitrella patens*. *J Biol Chem.* 2011 286(33):28978-87.
42. Bonente G, Formighieri C, Mantelli M, Catalanotti C, Giuliano G, **Morosinotto T**, Bassi R. Mutagenesis and phenotypic selection as a strategy toward domestication of *Chlamydomonas reinhardtii* strains for improved performance in photobioreactors. *Photosynth Res.* 2011 108(2-3):107-20.
41. Simionato D, Sforza E, Corteggiani-Carpinelli E, Bertucco A, Giacometti GM and **Morosinotto T*** Acclimation of *Nannochloropsis gaditana* to different illumination regimes: effects on lipids accumulation. *Bioresource Technology* 2011 102(10):6026-32 * Author for correspondence
40. Gerotto C, Alboresi A, Giacometti GM, Bassi R, **Morosinotto T***. Role of PSBS and LHCSR in *Physcomitrella patens* acclimation to high light and low temperature. *Plant, Cell & Environment* 2011 34(6):922-32. * Author for correspondence
39. Pandit A, **Morosinotto T**, Reus M, Holzwarth A.R, Bassi R. And De Groot Hjm. First solid-state NMR analysis of uniformly ¹³C-enriched major light-harvesting complexes from *Chlamydomonas reinhardtii* and identification of protein and cofactor spin clusters. *BBA – Bioenergetics* 2011 1807(4):437-43.
38. Ferroni L, Baldisserotto C, Giovanardi M, Pantaleoni L, **Morosinotto T**, Pancaldi S. Revised assignment of room-temperature chlorophyll fluorescence emission bands in single living cells of *Chlamydomonas reinhardtii*." *Journal of Bioenergetics and Biomembranes* 2011. 43(2):163-73.
37. Bonente G, Ballottari M, Truong TB, **Morosinotto T**, Ahn TK, Fleming GR, Niyogi KK and Bassi R. Analysis of LhcSR3, a protein essential for feed-back de-excitation in the green alga *Chlamydomonas reinhardtii*. *PLoS Biology* 2011 Jan 18;9(1):e1000577.
36. De Marchis F, Pompa A, Mannucci R, **Morosinotto T**, Bellucci M. A plant secretory signal peptide targets plastome-encoded recombinant proteins to the thylakoid membrane. *Plant Mol Biol.* 2011 *Plant Molecular Biology* 2011 Volume 76, Issue 3, Page 427-441
35. Ballottari M, Girardon J, Betterle N, **Morosinotto T**, Bassi R. Identification of the Chromophores Involved in Aggregation-dependent Energy Quenching of the Monomeric Photosystem II Antenna Protein Lhcb5. *J Biol Chem.* 2010 285(36):28309-21.
34. Saga G, Giorgetti A, Fufezan C, Giacometti GM, Bassi R, **Morosinotto T***. Mutation analysis of the violaxanthin de-epoxidase identifies substrate binding sites and residues involved in catalysis. *J Biol Chem.* 2010 285(31):23763-70. * Author for correspondence
33. Alboresi A, Gerotto C, Giacometti GM, Bassi R and **Morosinotto T**, Mutants on heat dissipation in the moss *Physcomitrella patens* provide insights on the evolution of protection mechanisms upon land colonization, *PNAS* 2010 Jun 15;107(24):11128-33
32. **Morosinotto T***, Segalla A., Giacometti GM, Bassi R., Purification of structurally intact grana from plants thylakoids membranes. *J Bioenerg Biomembr* 2010 42(1):37-45 * Author for correspondence
31. Arnoux P§, **Morosinotto T§***, Saga G, Bassi R, Pignol D. A Structural Basis for the pH-Dependent Xanthophyll Cycle in *Arabidopsis thaliana*. *Plant Cell.* 2009 Jul;21(7):2036-44. § Equal contribution * Author for correspondence
30. Alboresi A, Ballottari M, Hienerwadel R, Giacometti GM, **Morosinotto T***. Antenna complexes protect Photosystem I from photoinhibition. *BMC Plant Biol.* 2009 Jun 9;9:71. * Author for correspondence

29. Betterle N, Ballottari M, Zorzan S, de Bianchi S, Cazzaniga S, Dall'osto L, **Morosinotto T**, Bassi R. Light induced dissociation of an antenna hetero-oligomer is needed for non-photochemical quenching induction. *J Biol Chem.* 2009 May 29;284(22):15255-66
28. Ballottari M, Mozzo M, Croce R, **Morosinotto T**, Bassi R. Pigment binding sites' occupancy and functional architecture of the photosystem II antenna complex LHCB5. *J Biol Chem.* 2009 Mar 20;284(12):8103-13.
27. Alboresi A, Caffarri S, Nogue F, Bassi R, **Morosinotto T***. In Silico and Biochemical Analysis of *Physcomitrella patens* Photosynthetic Antenna: Identification of Subunits which Evolved upon Land Adaptation *PLoS ONE* 2008 Apr 30;3(4):e2033. * Author for correspondence
26. de Bianchi S, Dall'osto L, Tognon G, **Morosinotto T**, Bassi R. Minor Antenna Proteins CP24 and CP26 Affect the Interactions between Photosystem II Subunits and the Electron Transport Rate in Grana Membranes of Arabidopsis. *Plant Cell.* 2008 Apr;20(4):1012-28
25. Slavov C, Ballottari M, **Morosinotto T**, Bassi R, Holzwarth AR. Trap-limited charge separation kinetics in higher plant photosystem I complexes. *Biophys J.* 2008 May 1;94(9):3601-12.
24. Frigerio S, Campoli C, Zorzan S, Fantoni LI, Crosatti C, Drepper F, Haehnel W, Cattivelli L, **Morosinotto T**, Bassi R. Photosynthetic antenna size in higher plants is controlled by the plastoquinone redox state at the post-transcriptional rather than transcriptional level. *J Biol Chem.* 2007 Oct 5;282(40):29457-69.
23. Croce R, Chojnicka A, **Morosinotto T**, Ihalainen JA, van Mourik F, Dekker JP, Bassi R, van Grondelle R. The low-energy forms of photosystem I light-harvesting complexes: spectroscopic properties and pigment-pigment interaction characteristics. *Biophys J.* 2007 Oct 1;93(7):2418-28.
22. Matsubara S §, **Morosinotto T** §, Osmond CB, Bassi R. Short- and long-term operation of the lutein-epoxide cycle in light-harvesting antenna complexes. *Plant Physiol.* 2007 Jun;144(2):926-41. § Equal contribution
21. Croce R, Mozzo M, **Morosinotto T**, Romeo A, Hienerwadel R, Bassi R. Singlet and triplet state transitions of carotenoids in the antenna complexes of higher-plant photosystem I. *Biochemistry.* 2007 Mar 27;46(12):3846-55.
20. Ballottari M, Dall'Osto L, **Morosinotto T**, Bassi R. Contrasting behavior of higher plant photosystem I and II antenna systems during acclimation. *J Biol Chem.* 2007 Mar 23;282(12):8947-58.
19. **Morosinotto T***, Bassi R, Frigerio S, Finazzi G, Morris E, Barber J. Biochemical and structural analyses of a higher plant photosystem II supercomplex of a photosystem I-less mutant of barley. Consequences of a chronic over-reduction of the plastoquinone pool. *FEBS J.* 2006 Oct;273(20):4616-30. * Author for correspondence
18. Mozzo M, **Morosinotto T**, Bassi R, Croce R. Probing the structure of Lhca3 by mutation analysis. *Biochim Biophys Acta.* 2006 Dec;1757(12):1607-13.
17. Ihalainen JA, Croce R, **Morosinotto T**, van Stokkum IH, Bassi R, Dekker JP, van Grondelle R. Excitation decay pathways of Lhca proteins: a time-resolved fluorescence study. *J Phys Chem B.* 2005 Nov 10;109(44):21150-8.
16. **Morosinotto T**, Ballottari M, Klimmek F, Jansson S, Bassi R. The association of the antenna system to photosystem I in higher plants. Cooperative interactions stabilize the supramolecular complex and enhance red-shifted spectral forms. *J Biol Chem.* 2005 Sep 2;280(35):31050-8.
15. Carbonera D, Agostini G, **Morosinotto T**, Bassi R. Quenching of chlorophyll triplet states by carotenoids in reconstituted Lhca4 subunit of peripheral light-harvesting complex of photosystem I. *Biochemistry.* 2005 Jun 14;44(23):8337-46.

14. Zucchelli G, **Morosinotto T**, Garlaschi FM, Bassi R, Jennings RC. The low energy emitting states of the Lhca4 subunit of higher plant photosystem I. *FEBS Lett.* 2005 Apr 11;579(10):2071-6.
13. **Morosinotto T**, Mozzo M, Bassi R, Croce R. Pigment-pigment interactions in Lhca4 antenna complex of higher plants photosystem I. *J Biol Chem.* 2005 May 27;280(21):20612-9.
12. Gibasiewicz K, Croce R, **Morosinotto T**, Ihalainen JA, van Stokkum IH, Dekker JP, Bassi R, van Grondelle R. Excitation energy transfer pathways in Lhca4. *Biophys J.* 2005 Mar;88(3):1959-69.
11. Ballottari M, Govoni C, Caffarri S, **Morosinotto T***. Stoichiometry of LHCI antenna polypeptides and characterization of gap and linker pigments in higher plants Photosystem I. *Eur J Biochem.* 2004 Dec;271(23-24):4659-65. * Author for correspondence
10. Matsubara S, Naumann M, Martin R, Nichol C, Rascher U, **Morosinotto T**, Bassi R, Osmond B. Slowly reversible de-epoxidation of lutein-epoxide in deep shade leaves of a tropical tree legume may 'lock-in' lutein-based photoprotection during acclimation to strong light. *J Exp Bot.* 2005 Jan;56(411):461-8.
09. Croce R, **Morosinotto T**, Ihalainen JA, Chojnicka A, Breton J, Dekker JP, van Grondelle R, Bassi R. Origin of the 701-nm fluorescence emission of the Lhca2 subunit of higher plant photosystem I. *J Biol Chem.* 2004 Nov 19;279(47):48543-9.
08. **Morosinotto T**, Breton J, Bassi R, Croce R. The nature of a chlorophyll ligand in Lhca proteins determines the far red fluorescence emission typical of photosystem I. *J Biol Chem.* 2003 Dec 5;278(49):49223-9.
07. Matsubara S, **Morosinotto T**, Bassi R, Christian AL, Fischer-Schliebs E, Lüttge U, Orthen B, Franco AC, Scarano FR, Förster B, Pogson BJ, Osmond CB. Occurrence of the lutein-epoxide cycle in mistletoes of the Loranthaceae and Viscaceae. *Planta.* 2003 Oct;217(6):868-79.
06. **Morosinotto T**, Caffarri S, Dall'Osto L and Bassi R. "Mechanistic aspects of the xanthophyll dynamics in higher plant thylakoids". 2003 *Physiologia Plantarum* 119 (3): 347-354.
05. Jennings RC, M Garlaschi F, **Morosinotto T**, Engelmann E, Zucchelli G.: "The room temperature emission band shape of the lowest energy chlorophyll spectral form of LHCI" *FEBS Lett.* 2003 Jul 17;547(1-3):107-10.
04. Castelletti S §, **Morosinotto T** §, Robert B, Caffarri S, Bassi R, Croce R. Recombinant Lhca2 and Lhca3 subunits of the photosystem I antenna system. *Biochemistry.* 2003 Apr 15;42(14):4226-34. § Equal contribution
03. Croce R, **Morosinotto T**, Castelletti S, Breton J, Bassi R. The Lhca antenna complexes of higher plants photosystem I. *Biochim Biophys Acta.* 2002 Oct 3;1556(1):29-40.
02. **Morosinotto T**, Baronio R, Bassi R. Dynamics of chromophore binding to Lhc proteins in vivo and in vitro during operation of the xanthophyll cycle. *J Biol Chem.* 2002 Oct 4;277(40):36913-20.
01. **Morosinotto T**, Castelletti S, Breton J, Bassi R, Croce R. Mutation analysis of Lhca1 antenna complex. Low energy absorption forms originate from pigment-pigment interactions. *J Biol Chem.* 2002 Sep 27;277(39):36253-61.

BOOK CHAPTERS:

09. Perin G and **Morosinotto T***, Optimization of Microalgae Photosynthetic Metabolism to Close the Gap with Potential Productivity. Ch. 6 of *Grand Challenges in Algae Biotechnology* Editors: Hallmann, Armin, Rampelotto, Pabulo H. Springer, Berlin, Heidelberg (2019).
https://doi.org/10.1007/978-3-030-25233-5_6 *Author for correspondence

08. Perin G and **Morosinotto T***, Potential of Microalgae Biomass for the Sustainable Production of Bio-commodities, In: Progress in Botany. Springer, Berlin, Heidelberg, 10.1007/124_2019_30, (2019). *Author for correspondence
07. **Morosinotto T** and Bassi R. Molecular Mechanisms for Activation of Non-Photochemical Fluorescence Quenching: From Unicellular Algae to Mosses and Higher Plants. Chapter 14 of the book “Non-Photochemical Quenching and Energy Dissipation in Plants, Algae and Cyanobacteria” Series: Advances in Photosynthesis and Respiration, Vol. 40. Demmig-Adams, B., Garab, G., Adams III, W., Govindjee, U.o.I. (Eds.) 2014 pp 315-331
06. Giacometti GM. and **Morosinotto T.**, Photoinhibition and Photoprotection in Plants, Algae and Cyanobacteria. 2013 Chapter 229 of Encyclopedia of Biological Chemistry 2nd Edition. Encyclopedia of Biological Chemistry. Pages 482–487, Edited by William J. Lennarz and M. Daniel Lane, ISBN: 978-0-12-378631-9
05. **Morosinotto T** and Bassi R, Assembly of light harvesting pigment – protein complexes in photosynthetic eukaryotes. Chapter 5 of the book: Photosynthesis: Plastid Biology, Energy Conversion and Carbon Assimilation. Series: Advances in Photosynthesis and Respiration, Vol. 34. Pag. 113-126. Eaton-Rye, Julian J.; Tripathy, Baishnab C.; Sharkey, Thomas D. (Eds.) 2012, ISBN 978-94-007-1578-3
04. **Morosinotto T**, Bonente G, Govoni C, Bassi R, Biocombustibili da alghe unicellulari (in Italian). 2009. In “Le piante industriali per la multifunzionalità e sostenibilità dell’agricoltura italiana nel terzo millennio” edited by Ranalli P.
03. Govoni C, **Morosinotto T**, Giuliano G and Bassi R, Exploiting Photosynthesis for biofuel production, in BIOPHOTONICS, Book Series: BIOLOGICAL AND MEDICAL PHYSICS, BIOMEDICAL ENGINEERING, Springer Verlag, Pag 15-28, 2008
02. **Morosinotto T** and Bassi R, The antenna system of higher plants Photosystem I and its interactions with the core complex. in “Photosystem I: The Light-Driven Plastocyanin: Ferredoxin Oxidoreductase”, G. Ranger ed. in the series “Comprehensive Series in Photosciences, Hader and Jori eds. 2007
01. Croce R, **Morosinotto T**, Bassi R, LHCI: the antenna complex of Photosystem I in plants and green algae. Chapter 10 of the book: 'Photosystem I: The Plastocyanin:Ferredoxin Oxidoreductase in Photosynthesis' J.H. Goldbeck ed. in the series 'Advances in Photosynthesis in Respiration' by Kluwer Academic Publishers, B.V. 2006.

PROCEEDINGS

05. Sforza, E., Gris, B., De Farias Silva, C.E., **Morosinotto, T.**, Bertucco, A. Effects of light on cultivation of *scenedesmus obliquus* in batch and continuous flat plate photobioreactor Chemical Engineering Transactions 2014 38, pp. 211-216
04. Perin G, Segalla A, Basso S, Simionato D, Meneghesso A, Sforza E, Bertucco A, **Morosinotto T.** Biotechnological optimization of light use efficiency in *Nannochloropsis* cultures for biodiesel production Chemical Engineering Transactions 2014 37, pp. 763-768
03. Bernardi A, Perin G, Galvanin F, **Morosinotto T**, Bezzo F. Modeling the effect of light intensity in microalgae growth. Sustainable Engineering Forum 2013 - Core Programming Area at the 2013 AIChE Annual Meeting: Global Challenges for Engineering a Sustainable Future pp. 349-350
02. Morosinotto T and Simionato D, Light use efficiency and biodiesel production from algae (in Italian). 2013 Quaderno IX, Accademia dei Georgofili, Firenze.

01. Sforza E., Bertucco A., **Morosinotto T.**, Giacometti GM., Vegetal oil from microalgae: species selection and optimization, 2010. Chemical Engineering Transactions vol. 2 pag 199-204, proceedings of the "2nd International Conference On Industrial Biotechnology"

AWARDS:

2014: - "Baccarani-Melandri" award presented by the Italian Society of Plant Biology to "a young researcher providing a personal, relevant, contribution to the development of plant physiology in Italy"

2010: - "Vincenzo Caglioti" award presented by the Accademia Nazionale dei Lincei as a young researcher in Chemistry.

- "Robin Hill" award presented by the International Society of Photosynthesis as a young scientist (under 40) in photosynthesis.

2002: "Laura Polo" award presented by the Italian Society of Photobiology attributed for the best Master thesis in Photobiology in 2000-2001

GRANTS:

2017-2020: PI of a research contract with ENI spa, entitled "Selection of algae strains/consortia for production of biofuels". The aim of the work is isolating strains with higher biomass and lipids productivity.

2017-2020: PI of a research contract with TINCI spa entitled "*photobioreactors for microalgae large scale cultivation.*" The aim of the research is the development of large scale cultivation of algae for food applications.

2016: PI of FSE project from Regione Veneto, no 2121/2015, entitled: "Use of microalgae for a sustainable aquaculture. AlgaAqua", supporting a collaboration with Alghitaly srl.

2015-2016: Participant to a contract with a company (SABA srl) aiming to explore the possibility of using algae for high added value molecules production.

2014-2016: National coordinator of a PRIN project founded by the Italian Ministry of University and Research entitled "Improving biofuels and high added value molecules production from unicellular algae".

2012-2017: ERC Starting Grant with a project entitled : "BioLEAP— Biotechnological optimization of light use efficiency in algae photobioreactors"

2012: Mobility grant from University of Padova to support networking activities of young investigators

2012: FSE project from Regione Veneto, no 2105/1/5/1739/2011, entitled: "Bio-oil production from algae: biotechnological optimization and development of and industrial process"

2010-2013. Participant to a contract with a company (undisclosed name) aiming at the design and installation of a photobioreactor for biomass production from algae. Phase I (2010-2011), aimed to the selection of a suitable species for growth in the conditions identified by the contractor. Phase II (2012-2013) aims to design and install a pilot scale photobioreactor.

2010 – Responsible of a research unit in a program "Biofuels from Seaweed"; sub-programme 1, "Biofuels from Algae", EERA (European Energy Research Alliance).

2009: - Responsible of a research unit on a project entitled "development of methods for microalgae exploitation for biofuels production" financed by CUIA (Consorzio Universitario Italiano per l'Argentina), coordinated by Prof. Pancaldi, University of Ferrara.

- Grant from University of Padova on a research proposal entitled: "*Physcomitrella patens: a new model organisms for the study of photosynthesis*"

2008 – 2010: National coordinator of a PRIN project founded by the Italian Ministry of University and Research entitled "Protein accumulation and turnover in plants".

2007: Grant from CARIPARO foundation to support a PhD student working on a project entitled: “*Physcomitrella patens*: a new model organism for the study of photosynthesis”

2005: Grant for a Post-doc position at LBC (Cadarache, France) awarded by the French Ministry of Research on a project entitled “Structural studies of carotenoid binding proteins involved in protection from oxidative stress”

ORAL PRESENTATIONS IN CONFERENCES.

2018: - Invited Speaker at First European Congress on Photosynthesis Research, ePS-1, Uppsala Sweden (<http://eps1.org/Start/>)

- Invited Speaker at SIBV meeting (Italian Society of Plant Biology)
- Invited Speaker at NanoInnovation 2018

2017: - Keynote lecture a “Algae genetic engineering to improve productivity in industrial cultivation” at FITEMI – 1° Italian Workshop on Microalgal technologies (<http://www.aidic.it/fitemi/>). Palermo (Italy)

- Conference of the International Society of Applied Phycology, Nantes (France)

2016: - ALGAEUROPE, Conference organized by EABA (European Algae Biomass Association), Madrid, December 2016

- Photosynthetic electron and proton transport in plants and algae; operation, regulation and function. Satellite meeting of International Congress of Photosynthesis, The Netherlands, August 2016

2015: - EPC6 (European Phycological Congress), London August 2015

2014:- Invited speaker at Third Asia Oceania Algae Innovation Summit (AOAIS2014), Daejeon, South Korea, November 17-20.

- Invited talk to SIBV (Italian Society of Plant Biology) general assembly in occasion of the Baccarani Melandri award. September 2014

- CeBiTec Research Conference 2014 Advances in Industrial Biotechnology. Prospects and challenges for the development of algal biotechnology, Bielefeld (Germany), September 2014

- “ALG’N’CHEM 2014- Algae, new resources for Industry ?” March 31 - April 3, 2014 Montpellier - France

- iconBM: international conference on BioMass 4-7 May 2014, Florence, Italy

2012: - Giornata di studio: IL CLOROPLASTO E LA RICERCA BIOLOGICA PER LA PRODUZIONE DI CIBO ED ENERGIA, Accademia dei Georgofili, Firenze, 17th May 2012

- 2nd International Conference on Algal Biomass, S. Diego, USA, 11-15th June 2012
- Lecture on Photosynthesis, Summer School of Photobiology organized by ESP (European Society of Photobiology), June 2012
- Invited speaker at ALGAE EUROPE “From Food to bio-fuel: the algal value chain”. Rome, 7th September 2012

- Invited Speaker at the SIBPA meeting (Italian Society for pure and applied biophysics), September 2012

2011: - Invited speaker at Western Photosynthesis Conference, Asilomar, CA, USA, 6-9th January.

- Joint meeting of French, Italian, Swiss, Belgian societies of Photosynthesis, Paris (France) 16-17th May

2010: - Invited speaker to International Congress of Photosynthesis, Beijing China 22-27th August

- Invited to attend as Italian representative for Young Scientists to World Economic Forum “Summer Davos – Annual Meeting of the New Champions”, on the theme “Driving Growth through Sustainability” Tianjin, People’s Republic of China 13-15 September 2010
- IBIC (Industrial Biotechnology International Congress), Padova 11-14th April 2010
- Meeting of the Italian Society of Plant Biology, Rome 29th June- 1st July 2010
- Meeting of the Phycology group of the Botanical Italian Society, Padova, 22-23rd October
- 2009: - European Biophysics Congress Genoa 11-15th July 2009, G e n o a , Italy
- International workshop on Photoprotection and Non Photochemical Quenching, Parsberg, Germany
- Meeting of the Italian Society of Photobiology, Locorotondo (BA), Italy
- 2008: - Invited Speaker at the International Workshop on Photosynthesis, Bichl, Germany 28th September – 1st October 2008
- Meeting of the Italian Society of Plant Physiology, Pisa (Italy)
- Italian Society of Evolutionary Biology, Alghero (SS), Italy
- 2007: - Photosynthesis 2007 Antenna Satellite meeting, Drymen, Scotland
- 2006: - Meeting of the French society of Photosynthesis
- 2004: - PS 2004 Light-Harvesting Systems Workshop A Satellite Meeting to the 13th International Congress on Photosynthesis/Montréal 26th – 29th August 2004.
- 2003: - Tetrapyrrole conference Passau (Germany), 6-10 October 2003.
- 2002: - Meeting of the Italian Society of Photobiology, Padova, 2002.

ORGANISATION OF SCIENTIFIC MEETINGS

2019:

2017: Chair of the session (Physiology and Genetics of plant-environment interactions) joint SIBV-SIGA (Italian societies of plant biology and plant genetics) meeting, Pisa (Italy)

- Session Chair for International CeBiTec Research Conference 2017 on Algae Biotechnology, Bielefeld (Germany).

2016 - International school for PhD/post doc students on photosynthesis “Molecular and biophysical aspects of photosynthesis”, Venice 25-29th January

2013 – International school for PhD/post doc students on biological production of fuels entitled “Renewable energy and biofuels: a biophysical and biochemical approach”, Venice 28th January-1st February

2011 - Chair of the session “Crop Productivity: Physiology and genetics” of the joint SIBV-SIGA (Italian societies of plant biology and plant genetics) meeting

INSTITUTIONAL ACTIVITIES.

2020 – *date* : Responsible of the Facility in plant Genome editing at the Department of Biology

2015 – *date* : Deputy director of PhD school in Biosciences, Department of Biology

2014 – *Date*: Coordinator of PARLab (Padova Algae Research Laboratory, <http://www.parlab.biologia.unipd.it/>) an interdisciplinary group merging competences from the Departments of Biology and Industrial Engineering aiming to develop algae biotechnological applications.

2018 – *date*: Coordinator of the Research unit in Plant Biology at the Department of Biology composed by 9 permanent researchers, 5 technicians and ≈ 30 PhD students and post-docs.

2013 - 2018: Coordinator of the Research unit in Photosynthesis and Plant Biotechnology at the Department of Biology composed by 4 permanent researchers, one technician and \approx 15 PhD students and post-docs.

2006 – present : Supervisor of 10 PhD students: Caterina Gerotto (2008-2010), Diana Simionato (2009-2011), Stefania Basso (2011-2013), Andrea Meneghesso and Giorgio Perin (2013-2015), Pascal Albanese (2014-2016), Alessandra Bellan (2014-17), Mattia Storti (2015-2018), Marco Mellon and Niccolò Fattore (2017-2020).

EVALUATION/REVIEWER /EDITORIAL DUTIES

2016, 2017, 2017 - Member of the evaluation committee of ANR (French National Research Agency), Panel on Energy and sustainable development / bioeconomy

2019 – present : Associate Editor for Biotechnology for Biofuels and Frontiers in plant sciences (section Marine and Freshwater Plants).

2014 – 2019: Associate Editor, BMC plant Biology;

2012 – present : Jury Member for French, Italian, Belgian, Dutch PhDs defences

2008 – present Reviewer for Italian Ministry of research, DOE (US Department of Energy), Deutsche Forschungsgemeinschaft (German Research Foundation), ANR (French National Research Agency), NWO (Netherlands Organisation for Scientific Research), National Science Center Poland, Czech Science Foundation.

2007 – present Reviewer for many international journals of the field including PNAS, Plant Cell, Nature Communication, Plant Journal, Plant Physiology, Trends in Biotechnology, BBA-Bioenergetics, Molecular Plant, Bioresource Technology, Current Opinion in Biotechnology, Biophysical Journal, Frontiers in Plant Genetics and Genomics, Planta, FEBS Letters, Eukaryotic Cell, Plant Cell Physiology, Applied Energy, Philosophical Transactions of the Royal Society B, Plant Molecular Biology, Biotechnology and Bioengineering, Journal of Visualized Experiments, Metabolomics, Journal of Phycology, Biomass & Bioenergy, Plant Physiology and Biochemistry, Journal of Integrative Plant Biology, Molecular Biology Reports, Algal Research, European Journal of Biophysics, European Journal of Phycology, European Journal of Lipid Science and Technology, ACS Sustainable Chemistry & Engineering, Photochemistry and Photobiology, Applied Microbiology and Biotechnology.

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

Member of the International Society of Photosynthesis Research; Italian Society of Photobiology; Italian Botanical Society (Phycology group); Italian Society of Plant Biology (2015-2019 elected member of the steering board);

EDUCATION :

31st January 2005. Defence of PhD thesis entitled: “Light Harvesting Complexes In Higher Plants: Role, Organisation And Regulation”.

2002 - 2004. PhD thesis shared between the Science Faculty of university of Verona (course in “industrial and environmental biotechnologies”) and the Université de la Méditerranée in Marseille, France (course in “life and health sciences”).

2001: Master degree in Biotechnology at the University of Verona, Faculty of Sciences. Thesis: "Functional Architecture of Lhca1: mutational analysis of higher plants Photosystem I antenna complex. Supervisor: Prof. Roberto Bassi.

LANGUAGES:

Italian, English and French