

Luca Dall' Osto

curriculum vitae et studiorum

1. CONTACT DETAILS

University of Verona
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2. EDUCATION

- (2003 - 2006) PhD in “Environmental and Industrial Biotechnology” at the University of Verona, Faculty of Sciences, IT.
(1996 - 2002) Master's degree, summa cum laude in Biotechnology, University of Verona, IT.

3. ACADEMIC CURRICULUM

- (2020 -) Full Professor in Plant Physiology (SSD BIO/04) at the University of Verona
(2011 - 2020) Associate Professor in Plant Physiology (SSD BIO/04) at the University of Verona
(2007 - 2011) Assistant Professor in Plant Physiology (SSD BIO/04) at the University of Verona
(2006) Post-doctoral fellow. Department of Science and Technology, University of Verona Fellowship from the FIRB project “Research on abiotic stress resistance of higher plants”.

4. RESEARCH ACTIVITY

My research focuses on the molecular physiology of abiotic stress response in photosynthetic organisms, plants, and unicellular algae, allowing counteracting adverse environmental conditions. These studies include mechanisms of sensing overexcitation and transducing stress signals into tuning cell metabolism. These mechanisms determine crop productivity and light use efficiency in microalgal growth. I have used the

knowledge obtained in these studies to implement strategies for algal strain domestication for enhanced biomass yield in photobioreactors. This is part of the development of “3rd generation” biofuel products. The research approach is multidisciplinary in that it crosses various disciplines and uses combined analytical methods, including genetics, molecular biology, physiology, biochemistry, and biophysics. The study's scale is vast, from isolated pigment-binding proteins to organelles, intact cells, and whole organisms.

The biological systems currently employed for this research:

- *Arabidopsis thaliana* and *Nicotiana tabacum* (higher plants), valid for reverse genetics, photoprotection and excess-light acclimation analysis, and the production of recombinant proteins
- *Chlorella vulgaris* and *Chlamydomonas reinhardtii* (green algae), for developing strains with enhanced light-use efficiency and for studying the conversion of solar energy into CO₂-neutral biofuels

Detailed research subjects:

A. Reverse genetics of carotenoid biosynthesis pathway: elucidation of individual xanthophylls in the photoprotection.

- isolation of *Arabidopsis* mutant lines with altered xanthophylls composition and their physiological/biophysical/biochemical characterization
- effects of photooxidative stress on chloroplast biological structures, assessment of reactive oxygen species (ROS) release, ROS scavenging activity, excess energy dissipation by regulative quenching of chlorophyll excited states
- control of chloroplast mRNA translation by xanthophyll species

B. Differential role of the Lhc (light-harvesting complexes) gene family members in defense of chloroplast against photooxidative stress.

- excitation energy transfer pathways in light-harvesting proteins and photosystem supercomplexes
- molecular mechanisms of non-photochemical fluorescence quenching
- structural organization of photosynthetic supramolecular complexes
- genome editing of Lhcb antenna proteins in *Arabidopsis* with particular reference to their role in resistance to abiotic stresses

C. Triggering molecular responses for chloroplast acclimation to excess light

- ROS effect in modulating expression of target genes, determinant for cell response to photooxidative damage

- comparative analysis of mechanisms by which plants undergo acclimation to different light and temperature conditions

D. Selection of algal strains optimized for biofuel production

- identification of genes controlling biomass yield in green algae
- focus on engineering light penetration in dense cultures typical of photobioreactors and modulation of photoprotective mechanisms responsible for resistance to excess light

E. Optimization of lignocellulose degradation processes by exploiting thermostable cell wall hydrolytic enzymes

- isolation of transgenic algal strains producing thermostable cell wall-degrading enzymes
- development of auto-catalytic transgenic tobacco plants accumulating high-temperature activated cell wall-degrading enzymes

Research projects

(2022 - 2024)	Principal investigator, PRIN 2022 “driveALGAE: Molecular improvements towards highly productive algal strains of industrial potential” (prot. 2022FXRZBF).
(2019 - 2022)	Coordinator of research unit VR, PRIN 2017 “From natural to artificial light-harvesting systems: unveiling fundamental processes towards a bio-inspired materials design” (prot. 201795SBA3_004).
(2017 - 2019)	Project “HuntingLight” (Programma Ricerca di Base), granted by UniVR. Principal Investigator.
(2017 - 2018)	Project “Espressione di enzimi termostabili degradativi della parete cellulare nell’alga verde <i>C. reinhardtii</i> attraverso trasformazione cloroplastica” (FSE 2017), granted by Regione Veneto. Principal Investigator.
(2016 - 2017)	Project “Espressione di idrolasi termostabili della parete cellulare in <i>N. tabacum</i> ” (FSE 2016), granted by Regione Veneto. Principal Investigator.
(2014 - 2017)	Project “HyperCell” (Joint Project 2014), granted by UniVR and Zuccato Energia srl. Principal Investigator
(2013)	Research activity – Project “Selection of unicellular algal strains optimized for biofuel production and CO ₂ fixation in photobioreactors”, granted by Algasoil srl.
(2010 - 2013)	Research activity – EU project (7 th Framework Programme) “SunBioPath”, grant agreement n. 245070, at the Department of Biotechnology, University of Verona. Supervisor: Prof. R. Bassi.

- (2010 - 2012) Research activity on the mechanism of photoprotection in higher plants, PRIN 2008 “Productivity and molecular mechanisms of photoprotection in photosynthetic organisms” (prot. 2008XB774B).
- (2008 - 2010) Coordinator of research unit VR3, PRIN 2007 “Regulation of protein turnover in chloroplasts and chromoplasts” (prot. 20073YHRLE_003).
- (2007 – 2008) Research on drought stress in higher plants, PRIN 2006 project “Structural and functional analysis of the photosynthetic apparatus on genotypes of *Z. mays* during cold and drought stress”, (prot. 2006073258_002).
- (2006 – 2007) Research within the framework of FIRB project “National laboratory of genomic and post-genomic of organisms of agricultural interest” (prot. RBLA0345SF_002) at the Department of Science and Technology, University of Verona.
- (2006) Research fellow, research on abiotic stress resistance of higher plants - FIRB project “Research network on genomic of plant response to environmental stress” (prot. RBNE01LACT_002).

Research visits

- (2014) Visiting scientist at the University of Lund, Sweden – Dept. of Chemical Physics (Prof. D. Zigmantas). Research on the roles of major light-harvesting complexes in the mechanism of thermal energy dissipation, measured through ultrafast transient absorption spectroscopy (funded by LaserLab Europe 7th FP and UniVR CooperInt 2014).
- (2013) Visiting scientist at the Weizmann Institute of Science, Rehovot, Israel (Prof. Z. Reich). The research dealt with the characterization of thylakoid membrane dynamics in a new Lhcb knock-out mutant in *A. thaliana*.
- (2012 - 2013) Visiting scientist at the University of California, Berkeley – Dept. of Plant and Microbial Biology (Prof. K.K. Niyogi). Research on the roles of light-harvesting complexes in modulating excitation energy dissipation was conducted using transient absorption techniques (ps timescale) (funded by UniVR CooperInt 2012).
- (2012) Visiting scientist at the University of Groningen, Faculty of Mathematics and Natural Sciences, The Netherlands (Prof. E. Boekema), and at the Laboratory of Biophysics, Wageningen University, The Netherlands (Prof. H. van Amerongen). Characterization of a new Lhcb knock-out mutant in *A. thaliana*.
- (2009 & 2010) Visiting scientist at the Max Planck Institute of Molecular Plant Physiology Potsdam – Golm, Germany (Dr. M. Piques). Characterization of a xanthophyll-mediated, post-transcriptional regulation of chloroplastic genes expression in *A. thaliana*.
- (2005 & 2007) Visiting scientist at the LGBP (Laboratoire de Biophysique et Genetique des Plantes), Faculté des Sciences de Luminy, Marseille, France (Prof. R. Hienerwadel). Research on the

spectroscopic investigation of triplet excited states of carotenoids on both purified proteins and intact leaves, through transient absorption techniques (ns timescale).

(2003) Visiting student at the Institute de Biologie Physico-Chimique, Paris, France (Prof. G. Finazzi). The project concerned the spectroscopic characterization of the mechanism of thermal energy dissipation on WT e mutant *Arabidopsis* plants.

Collaborations

Dr. Michel Havaux, Département de Ecophysiologie Végétale et de Microbiologie, Laboratoire d'Ecophysiologie de la Photosynthèse, Saint-Paul-lez-Durance, France.

Prof. Alexander Ruban, The School of Biological and Chemical Sciences, Queen Mary University of London

Dr. Emilie Wientjes, Laboratory of Biophysics, Wageningen University, The Netherlands.

Dr. Giovanni Giuliano, Ente per le Nuove tecnologie, l'Energia e l'Ambiente (ENEA), Unità Biotecnologie, Centro Ricerche Casaccia, Roma.

Prof. Krishna K. Niyogi, University of California at Berkeley, Dept. of Plant and Microbial Biology, Berkeley, CA.

Prof. Alfred Holzwarth, Max Plank Institute for Bioinorganic Chemistry, Mülheim an der Ruhr, Germany.

Prof. Christophe Robaglia e Dr. Reiner Hienerwadel, Laboratoire de Génétique et Biophysique des Plantes (LGBP), Département d'Ecophysiologie Végétale et Microbiologie – CEA-CNRS Université de la Méditerranée Aix-Marseille II, France.

Dr. Giovanni Finazzi, Institut de Recherches en Technologies et Sciences pour le Vivant, CEA Grenoble, France.

Prof. Roberta Croce, Vrije Universiteit Amsterdam, The Netherlands.

Prof. Donatas Zigmantas, Chemical Physics, Lund University, Sweden.

Prof. Herbert van Amerongen, Laboratory of Biophysics, Wageningen University, The Netherlands.

Dr. Shizue Matsubara, Forschungszentrum Jülich ICG-3 (Phytosphäre), Jülich, Germany

Prof. Ziv Reich, Weizmann Institute of Science, Rehovot, Israel

Prof. Masamitsu Wada, Department of Biology, Graduate School of Science, Kyushu University, Fukuoka, Japan

Prof. Donatella Carbonera, Dipartimento di Scienze Chimiche, Università di Padova, Italy

Prof. Massimo Maffei, Dipartimento di Scienza della Vita, Università di Torino, Italy

Prof. Joseph Hirschberg, Dept. of Genetics, The Hebrew University of Jerusalem, Israel

Dr Johannes Stuttmann, Martin-Luther-Universität Halle-Wittenberg, Halle, Germany

Prof. Gabriela Schlau-Cohen, Massachusetts Institute of Technology, MA

Prof. Mei Li, Institute of Biophysics, Chinese Academy of Sciences, Beijing, P.R. China

5. PARTICIPATION TO INTERNATIONAL/NATIONAL MEETINGS

International/National congress participation as invited speaker

International

Dall'Osto L. “Mapping light-harvesting function, photoprotection responses, and thylakoid stacking efficiency in the Photosystem II antenna system of plants”. Plant Biology Europe 2025, Budapest (Hungary) June 25th – 28th, 2025. *Contributed talk.*

Dall'Osto L. “Tuning the outer antenna system of Photosystem II: structural and functional insights”. International Satellite meeting, Photosynthesis: from fundamental mechanisms to applications, Gardony (Hungary) June 29th – July 2nd, 2025. *Invited speaker.*

Dall'Osto L. “Photosynthesis: how to convert physics to (bio)chemistry”. International Congress GCS22, Photosynthetic microorganisms for sustainable development (online conference), December 6th-7th, 2022. *Invited speaker.*

Dall'Osto L. “Complementary roles of LHCs in the rapid dissipative response to excess light”. International Congress, Biophysics of Photosynthesis: from molecules to the field, Rome, October 2nd-4th, 2019. *Invited speaker.*

Dall'Osto L. “Searching for pigment clusters catalyzing photoprotective response in the antenna system of higher plants”. 17th International Congress on Photobiology, Barcelona, August 25th-30th, 2019. *Contributed talk.*

Dall'Osto L. “*In vivo* functional architecture of carotenoid-chlorophyll clusters regulating fast photoprotection response in higher plants”. Gordon Conference Research on Carotenoids, Newry (ME), June 17th-22nd, 2018. *Invited speaker.*

Dall'Osto L. “Improving light-use-efficiency and biomass yield of plants by modulating photoprotective mechanisms”. 17th Congress of the European Society of Photobiology, Pisa, September 4th-8th, 2017. *Contributed talk.*

Dall'Osto L. “Green biotechnology: improving ROS resistance leads to improved light energy conversion efficiency for biomass and biofuels”. 12th International Conference on Reactive Oxygen and Nitrogen species in plants, Verona, June 24th-26th, 2016. *Contributed talk.*

Dall'Osto L. “Domestication of *Chlorella sorokiniana* strains for improved light use efficiency in photobioreactors”. 13th FISV Congress, Pisa, September 24th-27th, 2014. *Contributed talk.*

Dall'Osto L. “Control of thylakoid membrane composition by xanthophylls”. 16th International Congress on Photosynthesis – St. Louis (MI), August 11th-16th, 2013. *Invited speaker.*

Dall'Osto L. “Plant xanthophylls: specific roles in the organization and photoprotection capacity of the photosynthetic apparatus”. International Congress of Photosynthesis, Société Française de Photosynthèse, Paris - May 16th – 17th, 2011. *Contributed talk.*

Dall'Osto L. “Functional genomics of carotenoid biosynthetic pathway reveals specific function for xanthophylls species in photosynthesis and photoprotection”. International Workshop on Photosynthesis, Ried bei Kochel am See – München (Germany), September 28th – October 1st, 2008. *Contributed talk.*

Dall'Osto L. “Identification of gene products involved in feed-back de-excitation”. XIV International Congress on Photosynthesis – Glasgow (UK), July 17th-22nd, 2007. *Invited speaker.*

Dall'Osto L. “Photosynthesis without Lutein”. 14th International Symposium on Carotenoids – Edimburgh (UK), July 17th-22nd, 2005. *Invited speaker.*

Dall'Osto L. “Photosynthesis without Lutein”. Les journées de la société française de photosynthèse (SFF), Paris – June 2nd, 2004. *Contributed talk.*

National

Dall'Osto L. “Biogas con enzimi termofili ricombinanti per la degradazione della cellulosa”. Convegno Seci Energia / Gruppo Maccaferri “JCUBE – Open Innovation Call” – Zola Predosa (BO), April 6th, 2018. *Contributed talk.*

Dall'Osto L. “Prospettive della domesticazione di alghe unicellulari per la produzione di biocombustibili”. Convegno dell'Accademia dei Lincei “La sfida dei Terawatt: quale ricerca per l'energia del futuro?” - Roma, November 5th-6th, 2013. *Invited speaker.*

Dall'Osto L. “Interaction between chloroplast relocation and xanthophyll cycle in regulation of photosynthesis and photoprotection of *Arabidopsis thaliana*”. Congresso della Società Italiana di FotoBiologia – Pisa, June 13th – 14th, 2013. *Contributed talk.*

Dall'Osto L. “Functional genomics of carotenoid biosynthetic pathway reveals specific function for xanthophylls species in photosynthesis and photoprotection”. XLVII Congresso della Società Italiana di Fisiologia Vegetale – Pisa, June 30th – July 2nd, 2008. *Contributed talk.*

International/National congress participation

14th Congress of the Italian Society of Plant Biology – Palermo, September 16th-19th, 2025

2nd European Congress on Photosynthesis Research – Padova, June 25th-28th, 2024

I-be-c International Bioenergy and Environment Congress – Virtual Conference, February 16th-18th, 2021

15th FISV Congress - Roma, September 18th-21st, 2018

SIBV-SIGA Congress – Pisa, September 19th-22nd, 2017

17th International Congress on Photosynthesis – Maastricht (Netherlands), August 7th-12th, 2016.

SIBV-SIGA Congress – Milan, September 8th-11th, 2015

12th FISV Congress - Roma, September 24th-27th, 2012

1st SIBV congress – Verona, June 30th – July 2nd, 2009

13th International Congress of Photosynthesis – Palais des Congrès, Montreal (Canada) – August 29th – September 3rd, 2004.

6. SCIENTIFIC PUBLICATIONS

Global H-index: 43/49 (scopus.com/Google Scholar, updated at 20/01/2026)

<https://scholar.google.it/citations?user=35rDLmgAAAAJ>. Luca Dall'Osto authored more than 80 articles in peer-reviewed journals and 5 book chapters. These were cited 6573/9159 times (according to Scopus/Google Scholar). He is part of the “Top Italian Scientists” category “Natural & Environmental Sciences” (https://topitalianscientists.org/tis/49040/Luca_Dall). Luca Dall'Osto has been included in the PLOS BIOLOGY publicly available database of 100,000 top scientists “A standardized citation metrics author database annotated for scientific field” (top 2% for biology subfield).

1. Guardini Z.^{1st}, **Dall'Osto L.^{1st}**, Gomez R., Caferri R., Joliot P., Bassi R. (2025) Mapping light-harvesting and photoprotection responses in the Photosystem II antenna system of higher plants. *Plant Physiology*, 199 (4). ISSN: 0032-0889. PMID: 41230886. SCOPUS: 105023543653. IF: 6.9.
2. Amelii A., Cutolo E. A., Montepietra D., Battarra C., Caferri R., Capaldi S., Guardini Z., Dall'Osto L., Bassi R. (2025) Photosynthesis under far-red light: evolutionary adaptations and bioengineering of Light-Harvesting Complexes. *FEBS Letters*, *In The Press*. ISSN: 1873-3468. PMID: 41147650. SCOPUS: 105020599374. IF: 3.3.
3. Capaldi S., Guardini Z., Montepietra D., Pagliuca V.F., Amelii A., Betti E., John C., Pedraza-González L., Cupellini L., Mennucci B., Bonnet D.M.V., Chaves-Sanjuan A., **Dall'Osto L.** and Bassi R. (2025) Structural determinants for red-shifted absorption in higher plants Photosystem I. *New Phytologist*, 248(5):2331-2346. ISSN: 1469-8137. PMID: 40955088. SCOPUS: 105016140752. IF: 8.10.
4. Caferri R., **Dall'Osto L.**, Zhou Q., Amelii A., Shan J., Liu Z., Bassi R. (2025) A stress-induced paralog of Lhcb4 controls the photosystem II functional architecture in *Arabidopsis thaliana*. *Nature Comm.* 16(1):6910. ISSN: 2041-1723. PMID: 40715075. SCOPUS: 105011766204. IF: 14.70.
5. Canteri P., Battarra C., Mandalà G., Monti F., Bellini E., Hidasi N., Guardini Z., Ferrari S., Bassi R. and **Dall'Osto L.** (2025) *Chlorella vulgaris* mutants with altered cell walls show increased permeability and enhanced extractability of intracellular molecules. *Biotechnology for Biofuels*, 18:59. ISSN: 1754-6834. PMID: 40474295. SCOPUS: 105007521928. IF: 6.10.
6. Battarra C., Angstenberger M., Bassi R. and **Dall'Osto L.** (2024) Efficient DNA-free co-targeting of nuclear genes in *Chlamydomonas reinhardtii*. *Biology Direct*, 19:108. ISSN: 1745-6150. PMID: 39529073. SCOPUS: 2-s2.0-85209479894. IF: 5.50.
7. Saraceno P., Sardar S., Caferri R., Camargo F., **Dall'Osto L.**, D'Andrea C., Bassi R., Cupellini L., Cerullo G., Mennucci B. (2024) Probing the effect of mutations on light harvesting in CP29 by transient absorption and first-principles simulations. *J. Phys. Chem. Lett.*, 15(24):6398-6408. ISSN: 1948-7185. PMID: 38861672. SCOPUS: 2-s2.0-85196027002. IF: 5.70.
8. Sardar S., Caferri R., Camargo F., Capaldi S., Ghezzi A., **Dall'Osto L.**, D'Andrea C., Cerullo G., Bassi R. (2024) Site-directed mutagenesis of the chlorophyll-binding sites modulates excited states lifetime and chlorophyll-

- Xanthophyll energy transfer in the monomeric light-harvesting complex CP29. *J. Phys. Chem. Lett.*, 15(11):3149-3158. ISSN: 1948-7185. PMID: 38478725. SCOPUS: 2-s2.0-85187645305. IF: 5.70.
9. Sulli M., **Dall'Osto L.**, Ferrante P., Guardini Z., Gomez R.L., Mini P., Demurtas O.C., Aprea G., Nicolia A., Bassi R., Giuliano G. (2023) Generation and physiological characterization of genome-edited *Nicotiana benthamiana* plants containing zeaxanthin as the only leaf xanthophyll. *Planta*, 258 (5):93. ISSN: 0032-0935. PMID: 37796356. SCOPUS: 2-s2.0-85173148632. IF: 4.30.
 10. Cutolo E.A., Caferri R., Guardini Z., **Dall'Osto L.**, Bassi R. (2023) Analysis of state 1—state 2 transitions by genome editing and complementation reveals a quenching component independent from the formation of PSI-LHCI-LHCII supercomplex in *Arabidopsis thaliana*. *Biology Direct*, 18(1):49. ISSN: 1745-6150. PMID: 37612770. SCOPUS: 2-s2.0-85168593990. IF: 5.50.
 11. Cutolo E.A., Guardini Z., **Dall'Osto L.**, Bassi R. (2023) A paler shade of green: engineering cellular chlorophyll content to enhance photosynthesis in crowded environments. *New Phytologist*, 239(5), 1567–1583. ISSN: 1469-8137. PMID: 37282663. SCOPUS: 2-s2.0-85161551609. IF: 10.32.
 12. Parmagnani A.S., Mannino G., Brillada C., Novero M., **Dall'Osto L.**, Maffei M. (2023) Biology of two-spotted spider mites (*Tetranychus urticae*): ultra-structure, photosynthesis, guanine transcriptomics, carotenoids and chlorophylls metabolism, and acaricidal potential of Decoyinine. *Int. J. Mol. Sci.*, 24(2): 1715. ISSN: 1422-0067. PMID: 36675229. SCOPUS: 2-s2.0-85146516020. IF: 6.21.
 13. Carbonera D., Agostini A., Bortolus M., **Dall'Osto L.**, Bassi R. (2022) Violaxanthin and zeaxanthin may replace lutein in L1 site of LHCII, conserving the interactions with surrounding chlorophylls and the capability of triplet-triplet energy transfer. *Int. J. Mol. Sci.*, 23(9):4812. ISSN: 1422-0067. PMID: 35563202. SCOPUS: 2-s2.0-85128734080. IF: 6.21.
 14. Sardar S., Caferri R., Camargo F. V. A., Serrano J. P., Ghezzi A., Capaldi S., **Dall'Osto L.**, Bassi R., D'Andrea C., Cerullo G. (2022) Molecular mechanisms of light harvesting in the minor antenna CP29 in near-native membrane lipidic environment. *J. Chem. Phys.*, 156(20):205101. ISSN: 0021-9606. PMID: 35649882. SCOPUS: 2-s2.0-85131075433. IF: 4.30.
 15. Guardini Z., Gomez R., Caferri R., **Dall'Osto L.**^{ca}, Bassi R. (2022). Loss of a single chlorophyll in CP29 triggers re-organization of the Photosystem II supramolecular assembly. *Biochim. Biophys. Acta*, 1863(5):148555. ISSN: 0005-2728. PMID: 35378087. SCOPUS: 2-s2.0-85127695036. IF: 4.43.
 16. Cutolo E. A., Mandalà G., **Dall'Osto L.**, Bassi R. (2022) Harnessing the algal chloroplast for heterologous protein production. *Microorganisms*, 10(4):743. ISSN: 2076-2607. PMID: 35456794. SCOPUS: 2-s2.0-85127382695. IF: 4.93.
 17. Su X., Cao D., Pan X., Shi L., Liu Z., **Dall'Osto L.**, Bassi R., Zhang X., Li M. (2022) Supramolecular assembly of chloroplast NAD(P)H dehydrogenase-like complex with photosystem I from *Arabidopsis thaliana*. *Molecular Plant*, 15(3), 454-467. ISSN: 1752-9866. PMID: 35123031. SCOPUS: 2-s2.0-85125130748. IF: 21.95.
 18. Schiphorst C., Achterberg L., Gomez R., Koehorst R., Bassi R., van Amerongen H., **Dall'Osto L.**, Wientjes E. (2022) The role of LHCI in excitation-energy transfer from LHCII to photosystem I in *Arabidopsis*. *Plant Physiology*, 188(4), 2241-2252. ISSN: 0032-0889. PMID: 34893885. SCOPUS: 2.0-85127482369. IF: 8.00.
 19. Cutolo E., Tosoni M., Barera S., Herrera-Estrella L., **Dall'Osto L.** and Bassi R. (2021) A chimeric hydrolase-PTXD transgene enables chloroplast-based heterologous protein expression and non-sterile cultivation of *Chlamydomonas reinhardtii*. *Algal Research*, 59, 102429. ISSN: 2211-9264. SCOPUS: 2-s2.0-85111693311. IF: 5.276.

20. Guardini Z.^{1st}, **Dall'Osto L.^{1st}**, Barera S., Jaber M., Cazzaniga S., Vitulo N., Bassi R. (2021) High carotenoid mutants of *Chlorella vulgaris* show enhanced biomass yield under high irradiance. **Plants**, 10 (5):911. ISSN: 2223-7747. PMID: 34062906. SCOPUS: 2-s2.0-85104991090. IF: 4.66.
21. Bassi R., **Dall'Osto L.** (2021) Dissipation of light energy absorbed in excess: the molecular mechanisms. **Ann. Rev. Plant Biology**, 72:47-76. ISSN: 1543-5008. PMID: 34143647. SCOPUS: 2-s2.0-85108374109. IF: 28.310.
22. Barera S., **Dall'Osto L.**, Bassi R. (2021) Effect of *lbcsl* gene dosage on oxidative stress and light use efficiency by *Chlamydomonas reinhardtii* cultures. **J. Biotech.**, 328:12-22. ISSN: 0168-1656. PMID: 33434600. SCOPUS: 2-s2.0-85099303742. IF: 3.595.
23. Benedetti M., Barera S., Longoni P., Guardini Z., Herrero Garcia N., Bolzonella D., Lopez-Arredondo D., Herrera-Estrella L., Goldschmidt-Clermont M., Bassi R., **Dall'Osto L.** (2021) A microalgal-based preparation with synergistic cellulolytic and detoxifying action towards chemical-treated lignocellulose. **Plant Biotechnology J.**, 19(1):124-137. ISSN: 1467-7652. PMID: 32649019. SCOPUS: 2-s2.0-85090091562. IF: 13.263.
24. Benedetti M., Vecchi V., Guardini Z., **Dall'Osto L.**, Bassi R. (2020) Expression of a hyperthermophilic cellobiohydrolase in transgenic *Nicotiana tabacum* by protein storage vacuole targeting. **Plants** 9(12), 1799. ISSN: 2223-7747. PMID: 33353085. SCOPUS: 2-s2.0-85098156644. IF: 3.935.
25. Angstenberger M., De Signori F., Vecchi V., **Dall'Osto L.**, Bassi R. (2020) Cell synchronization enhances nuclear transformation and genome editing via Cas9 enabling homologous recombination in *Chlamydomonas reinhardtii*. **ACS Synthetic Biology**, 9(10):2840-2850. ISSN: 2161-5063. PMID: 32916053. SCOPUS: 2-s2.0-85093538827. IF: 5.110.
26. Cutolo E.A., Tosoni M., Barera S., Herrera-Estrella L., **Dall'Osto L.**, Bassi R. (2020) A phosphite dehydrogenase variant with promiscuous access to nicotinamide cofactor pools sustains fast phosphite-dependent growth of transplastomic *Chlamydomonas reinhardtii*. **Plants**, 9(4):473. ISSN: 2223-7747. PMID: 32276527. SCOPUS: 2-s2.0-85083992844. IF: 3.935.
27. Guardini Z., Bressan M., Cafè R., Bassi R., **Dall'Osto L.** (2020) Identification of a pigment cluster catalyzing fast photoprotective quenching response in CP29. **Nature Plants**, 6(3):303-313. ISSN: 2055-026X. PMID: 32170280. SCOPUS: 2-s2.0-85082020159. IF: 15.793.
28. Vecchi V., Barera S., Bassi R., **Dall'Osto L.** (2020) Potential and challenges of improving photosynthesis in algae. **Plants**, 9(1):67. ISSN: 2223-7747. PMID: 31947868. SCOPUS: 2-s2.0-85078626339. IF: 3.935.
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Book chapters

1. Caferri R., Guardini Z., **Dall'Osto L.***, Bassi R. (2022) Assessing photoprotective functions of carotenoids in photosynthetic systems of plants and green algae, Chapter 2, in “Carotenoids: Biological functions of carotenoids and apocarotenoids in natural and artificial systems”, Wurtzel E. T. (eds.), Academic Press, Elsevier. ISSN 0076-6879. ISBN 978-0-323-91351-5.
2. Guardini Z., Gomez L. R., **Dall'Osto L.** (2022) Improving light harvesting. Photosynthesis in action, Chapter 7, in “Photosynthesis in action”, Ruban A., Foyer C. H., Murkie E. (eds.), Academic Press, Elsevier. ISBN 978-0-12-823781-6.
3. **Dall'Osto L.**, Barera S. (2020) Domesticazione di microalghe per la produzione di biocombustibili di terza generazione. Fisiologia Vegetale Applicata, Chapter 5, Lionetti V and Bellincampi D. (eds.). Piccin Nuova Libreria, Padova. ISBN 978-88-299-3113-2.
4. **Dall'Osto L.**, Bassi R., Ruban A. (2014) Photoprotective mechanisms: carotenoids. *Plastid Biology*, Advances in Plant Biology 5, Chapter 15, S. Theg, F.-A. Wollman (eds.). Springer Science+Business Media New York 2014. ISBN 978-1-4939-1136-3.
5. Bonente G., **Dall'Osto L.**, Bassi R. (2008) In between photosynthesis and photoinhibition: the fundamental role of carotenoids and carotenoid-binding proteins in photoprotection. Biophotonic book, Chapter 3, L. Pavesi, P.M. Fauchet (eds.), Springer-Verlag 2008. ISBN 978-3-540-76779-4.

Publications without peer-review

1. **Dall'Osto L.**, Bassi R. (2013) Prospettive della domesticazione di alghe unicellulari per la produzione di biocombustibili. *Accademia dei Lincei*, Estratti dal Convegno Internazionale “La sfida dei Terawatt: quale ricerca per l'energia del futuro?”.
2. Bassi R., Berteotti S., Ballottari A., Alboresi A., Betterle N., **Dall'Osto L.** (2012) Domesticazione delle alghe unicellulari per la produzione di biocombustibili in fotobioreattore. *Accademia dei Georgofili*, Quaderni 2012-IX, 9 supp. 9, 69-85.

7. REVIEWER

International journals

Nature Plants, Nature Communications, Molecular Plant, PNAS, Plant Physiology, Plant Journal, BMC Plant Biology, BBA Bioenergetic, Plant BioSystems, Scientific Reports, Cell Research, Journal of Integrative Plant Biology, Environmental & Experimental Botany, New Phytologist, Plant Biology, J. Photochem. Photobiol., J. Plant Interaction, J. Phycology, Photosynthesis Research, Planta.

Review panel membership

Chilean National Science and Technology Commission

Academy of Finland

Independent Research Fund (DRF), Denmark

Member of the scientific evaluation PLANT panel, Academy of Finland/ Research Council of Finland

Agence Nationale de la Recherche, France

Deutsche Forschungsgemeinschaft (DFG), Germany

Czech Science Foundation

National Science Centre (NCN), Poland

MIUR / ANVUR, Italy

Government College University, Faisalabad, Pakistan

Indian Institute of Technology, Kharagpur, India

Editorial Board membership

(2019 -) Review Editor, Frontiers in Plant Science

(2019) Editorial Board member and Academic Editor for “Plants”

8. MEMBERSHIPS OF SCIENTIFIC SOCIETIES

- (2013 -) Italian Society of Plant Biology (SIBV)
 (2013 -) International Society of Photosynthesis

9. ACADEMIC TEACHING ACTIVITIES

- (2016 - 2019) Lecturer, ESP Photobiology School, Brixen
 (2021 -) Lecturer in “Synthetic biology of plant productivity”, MSc in Biotechnology LM7, University of Verona. 6 CFU.
 (2011 -) Lecturer in “Cell biology”, BS in Biotechnology L2, University of Verona. 6 CFU.
 (2009 -) Lecturer in “Plant secondary metabolism and metabolic engineering”, MSc in Biotechnology LM7, University of Verona. 6 CFU.
 (2007 - 2009) Lecturer in "Plant Biochemistry", BS in Biotechnology, Faculty of Science, University of Verona. 4 CFU.
 (2002 - 2007) Member of the examination committee for courses of “Plant Biochemistry” and “Biotechnology and abiotic stress”, Faculty of Science, University of Verona.
 (2002 - 2007) Teaching assistant for courses on “Plant Biochemistry” and “Biotechnology and abiotic stress” at the Faculty of Science, University of Verona, held by Prof. Roberto Bassi.

Supervisor of undergraduate/PhD students

- (2006 -) Ph.D. student supervision, as principal supervisor: Michela Ronzani, Mauro Bressan, Valeria Vecchi, Paolo Canteri; as co-supervisor: Stefano Cazzaniga, Silvia de Bianchi, Joannis Dikaïos, Christo Schiphorst, Zeno Guardini, Mehrdad Jaberì, Roberto Caferri.
 (2006 -) Supervision of undergraduate students: supervisor of 7 B. Sc. (Massimo Leonardi, Zeno Guardini, Gianluca Zorzi, Edoardo Righetti, Francesco de Signori, Federico Aimi, Dario Verzin); supervisor of 15 M. Sc. students, 9 as primary supervisor (Ernesto Mitrucchio, Enrico Rancan, Mauro Bressan, Roberto Caferri, Antonello Ameliì, Rachele Gobbi, Simone Paris, Federico Alvaro, Guido Cotti), 6 as co-supervisor (Silvia de Bianchi, Michela Ronzani, Stefania Paltrinieri, Francesca Papini, Ilaria Ragnoli, Luca Dalla Riva).
 (2017 -) Primary supervisor, research activities of Stefano Cazzaniga, Mauro Bressan, Simone Barera, Manuel Benedetti, Rodrigo L. Gomez, Giulia Mandalà (post-doc).
 (2006 - 2017) Contributions to scientific training of bachelor's/M.Sc. thesis of Sara Frigerio, Sara Modena, Francesca Passarini, Nico Betterle.

10. INSTITUTIONAL RESPONSABILITIES

- (2016 -) Referente CdS (coordinator), MSc LM-7 Agri-food Biotechnology.

- (2013 -) Member of Teaching staff, PhD in Biotechnology.
- (2007 - 2013) Member of teaching staff at Doctoral School in Molecular, Environmental, and Industrial Biotechnology.
- (2007 -) Member of Biotechnology Dept. Council.

11. OTHER ACADEMIC ACTIVITIES

- (2018) Pre-examinator of PhD thesis: “Study of carbon metabolism in plants: from enzymes to the organism, from physiology to stress”, Dr. L. Guerrieri (University of Bologna); “Defining the GUN1-FtsH interactions in chloroplast biogenesis in *Arabidopsis thaliana*”, Dr. C. Peracchio (University of Milano).
- (2017 -) Supervisor, research activities of Ernesto Mitrucchio, Dario Zappone, Mauro Bressan (post-doc), Simone Barera (post-doc), Manuel Benedetti (post-doc), Edoardo Cutolo (post-doc), Giulia Mandalà (post-doc), Max Angstenberger (post-doc).
- (2017) Member, Organizing Committee – Winter School “Plant biotechnology and environmental sustainability”, Canazei – January 15th-20th
- (2016) Opponent in PhD defenses: Dr. N. Di Giacinto, University of Bologna, “Cysteine-based redox modifications in the regulation of Calvin-Benson cycle enzymes from *Chlamydomonas reinhardtii*”; Dr. C. Pirone, University of Bologna, “Disentangling the role of transitory starch storages in plant development and in osmotic stress response”.
- (2013 - 2017) Counsellor, Italian Society of Plant Biology.
- (2007 - 2012) Lecturer at the “Research Days” organized by the Faculty of Science, University of Verona, Degree in Biotechnology

12. OTHER ACTIVITIES

- (2018 -) Co-founder and partner in the innovative start-up “Enerzyme srl”
- (2017) Talk about photosynthesis and bioenergy, MEMEX interview series, Rai Scuola (<http://www.univrmagazine.it/2017/11/22/la-ricerca-delluniversita-di-verona-su-rai-scuola/>)
- (2017) Member, Scientific Committee – Joint Congresses SIBV-SIGA, Pisa 2017
- (2015) Member, Scientific Committee – Joint Congresses SIBV-SIGA, Milan 2015

Verona, June 18th, 2025

Luca Dall’Osto

Freeb

Dichiarazione sostitutiva di certificazione (art. 46 e 47 D.P.R. nr 445 del 28/12/2000). Il sottoscritto Luca Dall'Osto, CF DLLLCU77A05H829P nato a Sandrigo (VI) il 05/01/1977, consapevole delle sanzioni penali, nel caso di dichiarazioni mendaci, di formazione o uso di atti falsi, richiamate dall'articolo 76 del D.P.R. 445/2000, dichiara che tutto quanto indicato nel presente curriculum vitae corrisponde a verità.

Verona, 18/06/2025

Luca Dall'Osto

A handwritten signature in black ink, appearing to read 'Luca Dall'Osto', with a stylized, cursive script.