

CURRICULUM VITAE



name: **Roberto Bassi**

date/place February 22nd, 1955

of birth Vicenza, Italy

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Member of: The Accademia Nazionale dei Lincei (National Academy of Sciences of Italy)

The Academia Europaea

The EMBO (European Molecular Biology Organization).

The Accademia dei Georgofili (National Academy of Agriculture).

Languages: Italian, French, English

Present positions:

2005– Full Professor of Plant Physiology and Biochemistry – Department of Biotechnology, University of Verona.

2019 -Dean of the Doctoral School in Natural Sciences and Engineering.

Academic curriculum

2005 -) Full Professor in Plant Physiology – Department of Biotechnology, University of Verona.

(2019-) Dean of the Doctoral School in Natural Sciences and Engineering.

(2002 - 2005) Full Professor of Biochemistry and Molecular Biology –Faculty of Sciences, University of Aix-Marseilles (Fr).

(1993-2002) Associate Professor of Plant Physiology. Department of Science and Technology, University of Verona.

(1996-1998) Lecturer of Photobiology at the University of Lausanne, Switzerland.

(1993-2000) Associated professor of "Plant Biochemistry", University of Verona.

(1991-1992) Associated professor in "Plant Physiology and Biochemistry", University of Urbino.

(1986 to 1991) Assistant Professor at the Department of Biology, Padua.

(1983-1986) Assistant Professor. Institute of Botany. Botanical Garden, University of Padua.
(1978-1979): assistant professor. Institute of Microbiology, University of Padua.

Further Academic Appointments

(1984-1985) Visiting scientist at the Dept. of Physiology, Carlsberg Laboratory (Denmark).
(1987) Visiting scientist at the Institute de Biologie Physico-Chimique. Paris.
(1989-1990) Visiting scientist at the Department of Molecular Biology, University of Geneva (CH).
(2012) Visiting Research Professor. Institute of Biophysics of Proteins, Chinese Academy of Sciences.
(2017) Miller Visiting Professor. Department of Plant and Microbial Biology, University of California- Berkeley- USA.
(2018-2022): Guest professor LMBB of Qingdao National Laboratory for Marine Science and Technology.

Education

1977: Laurea, cum laude, in Biology at the University of Padua, Faculty of Sciences. Thesis: "The effect of continuous illumination on plastid ultrastructure and carbon metabolism in *Zea mays* leaf". Supervisor: Prof. Mario Orsenigo.
1979-1983: graduate student. Institute of Botany and Plant Physiology, University of Padua.
1976. Course on Idrobiology. Chioggia (Venice),
1984. Cryotechnics in Electron microscopy and their biological applications. Istituto Superiore di Sanità-Rome,
1986. E.M.B.O. course on: Modern analysis of Biological Structures. Pavia,

Entrepreneurship and patents

2018 - Co-founder and partner in the innovative start-up company "Enerzyme srl"

2017 : Domanda di brevetto USA : A PROCEDURE FOR ENHANCING GROWTH RATE AND HIGH LIGHT TOLERANCE OF CHLORELLA VULGARIS THROUGH DIRECTED EVOLUTION.

2019 - Domanda di brevetto n. 10 2 0 180 0 0 0 0 9867. "TRANSGENIC MICROALGAE FOR THE PRODUCTION OF DEGRADATIVE ENZYMES OF THE PLANT CELL WALL HAVING A HEAT-STABLE CELLULOLYTIC ACTIVITY" pending.

Publications

250 papers in ISI journals, 38 book chapters, H-index: 88, citations: 21.000 (Skopus, Hf=71, IWS, hF=77).

<http://scholar.google.it/citations?user=-SNflwMAAAAJ&hl=it>

Selected papers

Guardini, Z., L. Dall'Osto, M. Bressan, R. Caferri and **R. Bassi** (2020). Identification of a pigment cluster catalysing fast photoprotective quenching response in CP29. **Nature Plants**, in the press.

Girolomoni, L., Cazzaniga, S., Pinnola, A., Ballottari, M. and **Bassi, R.** (2019) LHCSR3 is a Non-Photochemical Quencher of both photosystems in *Chlamydomonas reinhardtii*. **Proc. Natl. Acad. Sci USA**, 116(10):4212-4217. doi: 10.1073/pnas.1809812116

Kondo, T., A. Pinnola, John Ogren, **R. Bassi** and G. Schlau-Cohen (2017) Single-molecule spectroscopy of LHCSR1 protein dynamics identifies two distinct states responsible for multi-timescale photosynthetic photoprotection. **Nature Chemistry** 9 (8), 772-778.

Dall'Osto, L., S. Cazzaniga, M. Bressan, D. Paleček, K. Židek, K. K. Niyogi, G. R. Fleming, D. Zigmantas and **R. Bassi** (2017) Dissipative response to excess light is catalyzed in monomeric and trimeric light-harvesting complexes by two independent mechanisms. **Nature Plants**. 2017 Apr 10;3:17033

Pinnola A, Cazzaniga S, Alboresi A, Nevo R, Levin-Zaidman S, Reich Z, **Bassi R.** (2015) Light-Harvesting Complex Stress-Related Proteins Catalyze Excess Energy Dissipation in Both Photosystems of *Physcomitrella patens*. **The Plant Cell**, (11):3213-27

Schlau-Cohen, G. S. Ishizaki, A. Calhoun, T. R. Ginsberg, N. S., Ballottari, M., **Bassi R.** & Fleming G. R Elucidation of the timescales and origins of quantum electronic coherence in LHCI (2012). **Nature Chemistry** 4(5):389-95.

Bonente, G., M. Ballottari, T. Truong, T. Morosinotto, T.-K. Ahn, G. Fleming, K. Niyogi and **R. Bassi** (2011) Analysis of LhcSR3, a protein essential for feed-back de-excitation in the green alga *Chlamydomonas reinhardtii*. **PLOS Biology** 9(1): e1000577

Alboresi, A., Gerotto, C., Giacometti, G. M. **Bassi, R***. and Morosinotto T. (2010) Heat dissipation in the moss *Physcomitrella patens* provides Insights on the evolution of protection mechanisms upon land colonization. **Proc. Natl. Acad. Sci. USA** 107 (24) 11128-11133.

Ahn, T.K., Avenson, T.J., Ballottari, M., Cheng, Y-C, Niyogi, K.K., **Bassi, R.**, and Fleming, G.R. (2008) Architecture Of A Charge-Transfer State Regulating Photosynthetic Light Harvesting In Plants. **Science** 320, 794-797.

de Bianchi S., Dall'Osto L., Tognon G., Morosinotto T. and **Bassi R.** (2008) The minor Antenna Proteins CP24 and CP26 control the interactions between Photosystem II subunits and the electron transport rate within grana membranes. **The Plant Cell**. 20 1012-1028

Dall'Osto L., Cazzaniga S., North, H., Marion-Poll A., and **Bassi R.** (2007) The *aba4* mutant of *Arabidopsis thaliana* reveals a specific function for neoxanthin in protection against photooxidative stress. **The Plant Cell**, 19: 1048-1064.

Dall'Osto, L., Caffarri, S., **Bassi, R.** (2005) A mechanism of non-photochemical energy dissipation, independent from PsbS, revealed by a conformational change in the antenna protein CP26. **The Plant Cell**. 17(4):1217-32.

Finazzi, G., Johnson, G. N., Dall'Osto, L., Joliot, P., Wollman, F.-A., **Bassi, R.** (2004) A zeaxanthin-independent non-photochemical quenching mechanism localized in the Photosystem II core complex. **Proc. Natl. Acad. Sci. USA**, 101(33):12375-80

Bassi, R., Croce, R., Cugini, D., and Sandonà, D. (1999) Mutation analysis of a higher plant antenna protein provides identification of chromophores bound into multiple sites. **Proc. Natl. Acad. Sci. USA**. 96, 10056-10061.

Awards and Honors

1996 - Baccarini-Melandri Award. From the Italian Society of Plant Physiology.

2009 - Helmholtz-Humboldt Research Award. From the Helmholtz Association and the Alexander von Humboldt Foundation.

2012 - Chinese Academy of Sciences: Visiting Research Award at the Institute of Biophysics-CAS (Beijing) 1/09-31/12/2012.

2012 - Elected to membership at the National Academy of Science of Italy "Accademia dei Lincei" (section of Biochemistry and Molecular Biology).

2015: Elected to Membership at the *Accademia Europaea* (section of Biochemistry and Molecular Biology).

2017: Elected to Fellow of the *International Carotenoid Society*.

2017: Elected to membership of the *Accademia dei Georgofili*.

2018: Herlitzka Award for Physiology.

2019: Elected to membership of the EMBO (European Molecular Biology Organization).

Editorial activity

Associated Editor of ***Molecular Plant***. Associated Editor of ***Plants***. Previously served as associate editor of ***BMC Plant Biology***, ***Journal of Phycology***, ***Planta*** and ***Journal of Integrative Plant Biology***.

Research: Organisation:

-1999 and 2002: supervisor of an applied Plant Biotechnology laboratory co-founded by the regional administration and by industrial partners for the development of transgenic crops with improved resistance to virus infection and cold stress and for the expression of recombinant proteins with pharmaceutical interest in plants.

-2000 to 2002: Chairman of the PhD program in "Plant Biotechnology", University of Verona.

-2009 to 2013: Chairman of the PhD program in "Molecular, Industrial and Environmental Biotechnology, University of Verona.

-2014-2016: Chairman of the PhD program in "Biotechnology", University of Verona.

-2019-ongoing : Dean of the PhD school in Natural Sciences and Engineering, University of Verona.

Funding (selected grants, since 2002):

- FIRB (Special fund for basic research) PHOTOSYNTHESIS (2002-2005).

- FIRB PLANT STRESS (2002-2005).

- FISR (Special fund for applied research) PLANT FUNCTIONAL GENOMIC (Genefun) (2003-2005)

- CARIVERONA Foundation: NON-TRANSMISSIBLE PLASTID TRANSFORMATION FOR VACCINE EXPRESSION IN PLANTS. (2002-2005).
- FISR HYDROGEN PRODUCTION IN MICRO ALGAE- Idrobio. (2005-2008).
- Trento Science Foundation: PHOTOSYSTEM II STRUCTURE AND FUNCTION (2005-2008).
- PRIN-(National Research Found) DROUGHT AND HEAT STRESS IN WT AND TRANSGENIC MAIZE (2006-2008).
- FIRB-PARALLELOMICS (2007-2011)
- FISR- IDROBIO (2005-2009)
- FIRB-GENOMICS OF SOLANACEAE (2005-2011).
- EEC FP7 "HARVEST" (2009-2013).
- EEC FP7 "SUNBIOPATHS" (2009-2013)
- Cariverona "WATER RESOURCES" (2010-2013)
- MIPAF (Ministry of agriculture-Italy): "BIOMASSVAL" (2011-2014)
- MIPAF: "BIOHYDROGEN" (2011-2013)
- PRIN 2008 "REGULATION OF PHOTOSYNTHESIS" (2009-2011)
- EEC FP7: "ACCLIPHOT" (2012-2015).
- EEC Horizon 2020: "S2B: SOLAR TO BIOMASS" (2016-2019).
- PON – ORIGAMI: RAFFINERIA INTEGRATA PER LA PRODUZIONE DI BIODIESEL DA MICROALGHE (2018-2021).
- ENAC- CARBURANTI ALTERNATIVI PER L'AVIAZIONE CIVILE (2017- 2022).

Participation to National and International Panels:

- (2007-2010).- Member of the Board of the ISPR (International Society of Photosynthesis Research)
- (2001-2003 and 2007-2009).- Member of the Board of the Italian Society of Plant Physiology
- (2007-2015) - Member of the Scientific Board of the Italian Biofuels Platform
- (2009- 2019).- Vice-President of the International Society of Photobiology
- (2012- 2016).-Member of the Italian Governmental Agency "National Committee for Biosafety, Biotechnology and Life Sciences"
- (2013).- Member of the Panel for "Less is More" call from Netherland Organization for Scientific Research
- (2014).- Member of the Panel for "ERA-CAPS"
- (2014- 2017).-Member of the Scientific Evaluation committee of the CREA (Agronomic Research Centre of Italy)
- 2013-2016.-Member of the Scientific Evaluation Committee of the CNR (National Research Council)
- (2016- ongoing).-Member of the Scientific Advisory Board of the Marine Experimental Station "ANTHON DORN", Naples
- 2017.-Member of the jury for the International Award "LOMBARDIA È RICERCA" Milan, Italy.
- 2018-Member of the jury for the International Award "LOMBARDIA È RICERCA", Milan, Italy.
- 2019-Member of the jury for the International Feltrinelli Award for PHYSIOLOGY, Rome, Italy.
- Member of the Jury for the Feltrinelli International Award for HUMANITARIAN 2019ACCOMPLISHMENT, Rome, Italy.
- Member of the CID (Centre Inter-Academique pour de Developement) on behalf of the Accademia dei Lincei.
- (2018-2020).-Head of the ASN (Abilitazione Scientifica Nazionale) Committee for Plant Physiology

Research field

Research focuses on the mechanisms of primary productivity of autotrophic organisms including plants (model and crop species), mosses and unicellular algae: **(A)** the fundamental principles of light energy harvesting, excitation energy management and use in photosynthetic systems; **(B)** the molecular mechanisms of plant resistance to environmental stress (cold, drought and excess light) and their evolution. **(C)** Carotenoid biosynthesis and physiology. **(D)** Engineering of unicellular algae for increasing efficiency in production of biomass and biofuels. **(E)** Use of hyperthermophilic enzymes for lignocellulosic biomass hydrolysis and biofuel production, and **(F)**: Engineering crops for enhanced albedo in order to decrease earth temperature and compensate global warming effect. In addition, collaborative research of the group has been devoted to: Engineering bacterial magnetic nanoparticles for enhanced radiotherapy of cancer.

Annex 1: Publication List

Papers published in international peer-reviewed journals

2020

251) Guardini, Z., L. Dall'Osto, M. Bressan, R. Caferri and **R. Bassi** (2020). Identification of a pigment cluster catalysing fast photoprotective quenching response in CP29. **Nature Plants**, in the press.

250) Benedetti, M., S. Barera, P. Longoni, N. Herrero Garcia, D. Bolzonella, D. Lopez-Arredondo, L. Herrera-Estrella, M. Goldschmidt-Clermont, L. Dall'Osto and **R. Bassi** (2020) Sustainable Production of A Microalgal-Based Preparation With Thermostable Cellulolytic Activity For Biofuel Production. **Plant Biotechnology Journal**, In the press.

251) Vecchi, V., Simone Barera, **R. Bassi** and Luca Dall'Osto (2020) Potential and Challenges of Improving Photosynthesis in Algae. **Plants**, 9(1), 67; <https://doi.org/10.3390/plants9010067>

2019

250) **Bassi R**, Bucci EM, Calogero RA, Carninci P, Ciliberto G, Conte P, De Luca M, Corbellini G, Giordano A, Marchionni L, Massaro Giordano G, Parini A, Sbardella G. (2019) Look for methods, not conclusions. **Cell Death Dis**. 2019 Dec 5;10(12):931. doi: 10.1038/s41419-019-2179-8 PMID: 31804462

249) L. Dall'Osto, S. Cazzaniga, Z. Guardini, S. Barera, M. Benedetti, G. Mannino, M. E. Maffei and **R. Bassi** (2019) Combined resistance to oxidative stress and reduced antenna size enhances light-to-biomass conversion efficiency in *Chlorella vulgaris* cultures. **Biotechnology for Biofuels**, 16;12:221. doi: 10.1186/s13068-019-1566-9.

248) Dall'Osto, L., S. Cazzaniga, D. Zappone, M. Benedetti and **R. Bassi** (2019)., Monomeric light harvesting complexes enhance excitation energy transfer from LHClI to PSII and control their lateral spacing in thylakoids, **Biochim. Biophys. Acta - Bioenergetics**, <https://doi.org/10.1016/j.bbabi.2019.06.007>

247) Ordon J, Bressan M, Kretschmer C, Dall'Osto L, Marillonnet S, **Bassi R**, Stuttmann J. (2019) Optimized Cas9 expression systems for highly efficient Arabidopsis genome editing facilitate isolation of complex alleles in a single generation. **Funct Integr Genomics**. 2019 Feb 23. doi: 10.1007/s10142-019-00665-4.

246) Benedetti, M. Vecchi, V., Betterle, N., Natali, A., **Bassi, R.** and Dall'Osto, L. (2019): Design of a highly thermostable hemicellulose-degrading enzymatic blend from *Thermotoga neapolitana* for the treatment of lignocellulosic biomass heterologously expressed in *Chlamydomonas reinhardtii*. **Journal of Biotechnology** 296, 42-52.

245) Dikaos, I., C. Schiphorst, A. Pinnola, L. Dall'Osto, A. Alboresi and **Bassi R.** (2019) Functional analysis of the LHCSR1 protein, catalyzing Excess Energy Dissipation in mosses, by heterologous expression in *Arabidopsis thaliana*. **Photosynthesis Research**, Jul 3. doi: 10.1007/s11120-019-00656-3.

244) Kondo, A. Pinnola, J. Ogren, L. Dall'Osto, **R. Bassi** and G. Schlau-Cohen (2019) "Dynamics on microsecond and millisecond timescales in the photosynthetic protein LHCSR1 observed by single-molecule fluorescence correlation spectroscopy" **Proc. Natl. Acad. Sci. USA** <https://doi.org/10.1073/pnas.1821207116>

243) Girolomoni, L., Cazzaniga, S., Pinnola, A., Ballottari, M. and **Bassi, R.** (2019) LHCSR3 is a Non-Photochemical Quencher of both photosystems in *Chlamydomonas reinhardtii*. **Proc. Natl. Acad. Sci USA**, 201809812

242) J.-D. Rochaix and R. Bassi (2019) LHC-like proteins involved in stress responses and biogenesis/repair of the photosynthetic apparatus. **Biochem. J.**, 476 (3), 581-593.

241) M. Son, A. Pinnola, **R. Bassi**, G. S. Schlau-Cohen (2019) The electronic structure of lutein 2 is optimized for light harvesting in plants. **CHEM**, 2019

2018

240) Pinnola, A., Alboresi, A., Rameez A., Trotta A., Kouril R., Dall'Osto L., Aro, E.-M. and **Bassi R.** (2018) A LHCB9-dependent Photosystem I megacomplex induced under low light in *Physcomitrella patens*. **Nature Plants** Nov;4(11):910-919. doi: 10.1038/s41477-018-0270-2

239) Park S, Fischer AL, Li Z, **Bassi R**, Niyogi KK, Fleming GR. (2018) Snapshot Transient Absorption Spectroscopy of Carotenoid Radical Cations in High-Light-Acclimating Thylakoid Membranes. **J Phys Chem Lett.** 2017 Nov 16;8(22):5548-5554. doi: 10.1021/acs.jpcclett.7b02486.

238) Taddei, L., V. U. Chukhutsina., B. Lepetit, G. R. Stella, **R. Bassi**, H. van Amerongen, Jean-Pierre Boulya, Marianne Jaubert, Giovanni Finazzi, Angela Falciatore (2018) Multiple LHCX-related quenching sites control short- and long-term high light acclimation in the diatom *Phaeodactylum tricorutum*. **Plant Physiol.** 2018 Jul;177(3):953-965. doi: 10.1104/pp.18.00448

237) Ordon, J., Bressan, M., Kretschmer, C., Dall'Osto, L., Marillonnet, S., **Bassi, R.** and Stuttmann, J. (2018) Optimized Cas9 expression systems for highly efficient Arabidopsis genome editing facilitate isolation of complex alleles in a single generation. ArXiv .

236) Mannucci, S., Tambalo, S., G., Conti, Ghin, L., Milanese, A., Carboncino, A., Nicolato, E., Marinozzi, M. R., Benati, D. **Bassi, R.**, Marzola P., and Sbarbati A. (2018) "Magnetosomes extracted from *Magnetospirillum gryphiswaldense* as theranostic agents in an experimental model of glioblastoma". **Contrast Media & Molecular Imaging**. Vol 2018, Article ID 2198703, 12 pages <https://doi.org/10.1155/2018/2198703>.

235) Perroud, P.F., Haas, F., Hiss, M., Ullrich K. K., Alboresi, A., **Bassi, R.**, Bonhomme S., Chen, H., Coates, J. Fujita, T., Lang, D., Guyon-Debast A., Nogué F., Oliver M., Ponce de León, I, Rameau C., Reiss B., Reski, R., Sun N., Saidi Y., Szovenyi, P., Sreedasyam, A, Grimwood J., Stacey G., Schmutz, J., Rensing, S. A., (2018). The *Physcomitrella patens* gene atlas project: large scale RNA-seq based expression data. **The Plant Journal.** 95(1):168-182. doi: 10.1111/tbj.13940.

234) Pinnola, A. and **Bassi, R.** (2018) Molecular Mechanisms Involved In Plant Photoprotection. **Biochemical Society Transactions.** Apr 17;46(2):467-482. doi: 10.1042/BST20170307.

233) Bressan, M., **R. Bassi**, L. Dall'Osto (2018) A complete PSI-LHCI supercomplex is essential for the dynamic regulation of Photosynthetic redox homeostasis. **Environmental Experimental Botany.** DOI: 10.1016/j.envexpbot.2018.03.003

2017

232) Moejes FW, Matuszynska A, Adhikari K, **Bassi R**, Cariti F, Cogne G, Dikaios I, Falciatore A, Finazzi G, Flori S, Goldschmidt-Clermont M, Magni S, Maguire J, Le Monnier A, Müller K, Poolman M, Singh D, Spelberg S, Stella GR, Succurro A, Taddei L, Urbain B, Villanova V, Zabke C, Ebenhöf O. (2017) [A systems-wide understanding of photosynthetic acclimation in algae and higher plants](#). **Journal of Experimental Botany.**;68(11):2667-2681

231) Park S., Fischer, A.L., Li, Z., **Bassi, R.**, Niyogi, K. K., and G. R. Fleming (2017) Snapshot Transient Absorption Spectroscopy of Carotenoid Radical Cations in High Light Acclimating Thylakoid Membranes. **The Journal of Physical Chemistry Letters**. doi: 10.1021/acs.jpcclett.7b02486.

230) Pinnola, A., M. Ballottari, M. Alcocer, G. Cerullo and **R. Bassi** (2017). Functional modulation of LHCSR1 protein from *Physcomitrella patens* by zeaxanthin binding and low pH. **Scientific Reports**, 7, 11158.

229) Bressan, M. **Bassi***, R. Dall'Osto L. (2017) Loss of LHCI system impairs the dynamics of LHCII re-distribution between thylakoid domains. **Photosynthesis Research**, doi: 10.1007/s11120-017-0444-1.

228) Zhao, L. Cheng, D., Huang, X., Chen, M., Dall'Osto, L., Xing, J., Gao, L., Li, L., Wang, Y., **Bassi, R.**, Peng, L., Wang, Y., Rochaix, J-D. and Huang, F. (2017) "LHC-Like Protein Required for Maintenance of Specific Photosynthetic Components in *Chlamydomonas*". **Plant Physiology**. pp.01465.2016. doi: 10.1104/pp.16.01465

227) Kondo, T., A. Pinnola, J. Ogren, L. Dall'Osto, **R. Bassi** and G. Schlau-Cohen (2017) Single-molecule spectroscopy of LHCSR1 protein dynamics identifies two distinct states responsible for multi-timescale photosynthetic photoprotection. **Nature Chemistry**, DOI: 10.1038/nchem.2818.

226) Dall'Osto, L., S. Cazzaniga, M. Bressan, D. Paleček, K. Židek, K. K. Niyogi, G. R. Fleming, D. Zigmantas and **R. Bassi** (2017) Dissipative response to excess light is catalyzed in monomeric and trimeric light-harvesting complexes by two independent mechanisms. **Nature Plants**. 2017 Apr 10; 3:17033

223) Betterle, N., A. Rosa, R. Sharma Poudyal, Guangxi Wu, **R. Bassi**, and C.-H. Lee (2017) The STN8 kinase-PBCP phosphatase system is responsible for high-light-induced reversible phosphorylation of the PSII inner antenna subunit CP29 in rice. **The Plant Journal**, .89(4):681-691.

225) Girolomoni, L., P. Ferrante, S. Berteotti, G. Giuliano, **R. Bassi**, and M. Ballottari (2017). The Function of Lhcbm4-6-8 Antenna Proteins In *Chlamydomonas reinhardtii*. **J. Exp. Botany** 68(3):627-641 .

2016

224) Pinnola, A., H. Staleva-Musto, S. Capaldi, M. Ballottari, **R. Bassi** and T. Polívka (2016) Electron transfer between carotenoid and chlorophyll contributes to quenching in the LHCSR1 protein from *Physcomitrella patens*. **Biochim Biophys Acta** 1857(12):1870-1878.

222) Nicholas L., H. C., N. L. Gruenke, T. A. A. Oliver, M. Ballottari, **R. Bassi** and G. R. Fleming (2016) Observation of Electronic Excitation Transfer in Light Harvesting Complex II Using Two-Dimensional Electronic-Vibrational Spectroscopy. **J. Phys. Chem. Lett.**, 2016, 7 (20), pp 4197–4206

221) Bressan, M., L. Dall'Osto, I. Bargigia, M. J. P. Alcocer, D. Viola, G. Cerullo, C. D'Andrea, **R. Bassi**, M. Ballottari (2016) LHCII can substitute LHCI as an antenna for Photosystem I although with a reduced light harvesting capacity. **Nature Plants**, 2, 16131.

220) Ballottari M., T. B. Truong, E. De Re, E. Erickson, G. R. Stella, G. R. Fleming, **R. Bassi** and K. K. Niyogi (2016) Identification of pH-sensing sites in the Light Harvesting Complex Stress-Related 3 protein essential for triggering non-photochemical quenching in *Chlamydomonas reinhardtii*. **Journal of Biol. Chem.** 291(14):7334-46

219) *Berteotti, S., Ballottari, M. and **Bassi R.** (2016) Increased biomass productivity in green algae by tuning Non-Photochemical-Quenching. **Scientific Reports**. 6:21339. (*retracted article)

218) Wobbe L, **Bassi R**, Kruse O. (2016) Multi-Level Light Capture Control in Plants and Green Algae. **Trends Plant Sci.** (15) 1360-1385. PMID: 26545578.

217) Orlando T, Mannucci S, Fantechi E, Conti G, Tambalo S, Busato A, Innocenti C, Ghin L, **Bassi R**, Arosio P, Orsini F, Sangregorio C, Corti M, Casula MF, Marzola P, Lascialfari A, Sbarbati A. (2015) Characterization of magnetic nanoparticles from *Magnetospirillum gryphiswaldense* as potential theranostics tools. **Contrast Media Mol Imaging**. 11 (2), 139-145.

2015

216) Pinnola A, Ghin L, Gecchele E, Merlin M, Alboresi A, Avesani L, Pezzotti M, Capaldi S, Cazzaniga S, **Bassi R.** (2015) Heterologous Expression of Moss Light-harvesting Complex Stress-related 1 (LHCSR1), the Chlorophyll a-

Xanthophyll Pigment-protein Complex Catalyzing Non-photochemical Quenching, in *Nicotiana sp.* **J. Biol Chem.** 290 (40): 24340-54.

215) Borisova-Mubarakshina MM, Ivanov BN, Vetoshkina DV, Lubimov VY, Fedorchuk TP, Naydov IA, Kozuleva MA, Rudenko NN, Dall'Osto L, Cazzaniga S, **Bassi R.** (2015) Long-term acclimatory response to excess excitation energy: evidence for a role of hydrogen peroxide in the regulation of photosystem II antenna size. **J. Exp. Bot.** Aug 31. pii: erv410PMID: 26324464

214) Pinnola A, Cazzaniga S, Alboresi A, Nevo R, Levin-Zaidman S, Reich Z, **Bassi R.** (2015) Light-Harvesting Complex Stress-Related Proteins Catalyze Excess Energy Dissipation in Both Photosystems of *Physcomitrella patens*. **Plant Cell**, (11):3213-27

213) Goldschmidt-Clermont, M. and **Bassi, R.** (2015) Sharing light between two photosystems: mechanism of state transitions. **Current Opinion in Plant Biology.** 25:71-78.

212) Dall'Osto, L., Bressan, M. and **Bassi, R.** (2015) Biogenesis of LHC proteins (2014) **Biochim. Biophys. Acta.** 1847(9):861-71

211) Betterle, N., Ballottari, M., Baginsky S. and **Bassi R.** (2015) High light-dependent phosphorylation of Photosystem II inner antenna CP29 in monocots is STN7-independent and enhances Non Photochemical Quenching. **Plant Physiology** 167: 457-471.

2014

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34) Luca Dall'Osto, **Roberto Bassi** and Alexander Ruban (2012) Photoprotective mechanisms: carotenoids. In : " **PLASTID BIOLOGY**" S. M. Theg and Francis-André Wolman, Editors pp: 393-436.

33) Tomas Morosinotto* and **Roberto Bassi** (2013) Molecular mechanisms for activation of non-photochemical quenching: from unicellular algae to mosses and higher plants. In Demmig-Adams Ed. The NPQ book) pp: 315-331.

2012

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2006

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18) Pesaresi, P., Morales, F., Moya, I. and Bassi, R. (1995) Distribution of Xanthophyll cycle pigments in WT Arabidopsis and in a mutant blocked in zeaxanthin deepoxydation. in: P. Mathis, ed. " Photosynthesis: from Light to biosphere" IV, 95-98.

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14) Bassi, R., Giuffra, E., Croce, R., Dainese, P. and Bergantino, E. (1996) Biochemistry and Molecular Biology of Pigment Binding Proteins. in: Jennings, Zucchelli, Ghetti, Colombetti, Eds. Light as Energy source and Information Carrier in Plant Photophysiology. NATO-Asi series pp. 41-63 Plenum-Press. NY.

Dainese, P., Bergantino, E., Sechi, S., Bassi, R. and Pichersky, E. (1995) cDNA-deduced sequences of maize CP24 and CP26, the two major zeaxanthin-binding proteins of Photosystem II. in: P. Mathis, ed. "Photosynthesis: from light to biosphere", 1,199-202.

12) Yamamoto, H.Y and. Bassi, R. (1996) Carotenoids: Localization and function. In :Oxygenic Photosynthesis: the light reactions (D.R. Ort and C.F. Yokum Eds.)Advances in Photosynthesis pp539-563. Kluwer Acad. Publishers, Dordrecht. 1992

11) Dainese, P., Santini, C., Ghiretti-Magaldi, A., Marquardt, J., Tidu, V., Mauro, S. and Bassi, R. (1992) The organization of Pigment-proteins within photosystem II. In: N. Murata Ed. " Developments in Photosynthesis Research" pp. 13-20.

10) Jennings,R., Bassi, R., Zucchelli, G., Dainese, P. and Garlaschi, F.M. (1992) Equilibrium distribution of excited states in photosystem II antenna. In: N. Murata Ed. " Developments in Photosynthesis Research".pp.291-294.

9) Dainese,P., Marquardt, J., Pineau, B. and Bassi,R. (1992) Identification of Violaxanthin and Zeaxanthin binding proteins in maize photosystem II. In: N. Murata Ed. " Developments in Photosynthesis Research" pp.287-290.

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8) Bassi R. and Dainese P. (1989): The role of the light Harvesting Complex II and of the minor chlorophyll a/b proteins in the organization of the Photosystem II antenna system. In: M.Baltscheffsky (ed) Current Research in Photosynthesis 2, 209-216.

7) Dainese P., Di Paolo M.L., Silvestri M. and Bassi R. (1989): Proprieties of the minor chlorophyll a/b proteins CP29, CP26, CP24 from Zea mays Photosystem II membranes. In: M. Baltscheffsky (ed) Current Research in Photosynthesis 2, 249- 252. 1988

6) Simpson D.J., Bassi, R., Vallon O. and Hoyer-Hansen G. (1988): Location and organization of the chlorophyll-proteins of photosynthetic reaction centres in higher plants. In: D.O.Hall and Grassi (Eds) Photocatalitic production of energy rich compounds Elsevier Appl. Sci. Publ. Barking. pp. 195-209.

- 5) Rigoni F., Bassi R. and Giacometti G.M. (1988): Spectroscopic Characterization of Purified Chlorophyll a/b proteins CP29, CP26, CP24 from maize PSII antenna complex. In: Barber J. and Malkin R. (Eds) "Techniques and new developments in Photosynthesis research" Plenum Press, New York. 1987
- 4) Bassi, R., Simpson D., Barbato R., Hoyer-Hansen G., Hinz U. and Giacometti G.M. (1987): The role of LHCII in Thylakoid membranes. *Progr. Photosynth. Res.* vol. 2, 277-280.
- 3) Bassi, R. and Simpson D.J. (1987): Light Harvesting Chlorophyll-proteins of Barley photosystem I. *Progr. Photosynth. Res.* vol.2, 61-64.
- 2) Bassi, R. and Simpson D.J. (1987): The organization of Photosystem II chlorophyll-proteins. *Progr. Photosynth. Res.* vol.2, 81/88.
- 1) Simpson D.J., Bassi R. and Hinz U.G. (1987): Cell specific expression of LHCII and the organization of the photosynthetic reaction centre in chloroplast thylakoids. In: D. von Wettstein and N.H. Chua (Eds) *Plant Molecular Biology*. NATO ASI Series A. Plenum Publ. Corp. New York vol. 140, 93-104.

Popular science

Bassi R (1982): Miglioramento genetico dei vegetali e protezione della natura. **Ambiente, Risorse, Salute** 8, 24-28.

Bassi, R. Morelli, G and Salamini, F (2016) L'epidemia di Xylella in Puglia. **Sapere**, october 2016.

Annex 2: Invited Lectures at international Conferences

Before 1993

- Seventh International Congress on Photosynthesis. Providence 1986.
- EMBO workshop on Dynamics of Photosystem II. Jerusalem 1987.
- Eight International Congress on Photosynthesis. Stockholm 1989.
- International Congress on Chloroplast Development. Iraklion (Gr)1991.
- IXth International Congress on Photosynthesis. Nagoya 1992.

1993

- Breeding and Molecular Biology. Eucarpia. Bergamo 1993.
- Harden Conference on: Photoinhibition-Molecular Mechanisms to the field: Essex 1993.
- European Photobiology Congress. Marburg 1993.

1994

- N.A.T.O. Course: Light as energy source and information carrier in Plant Photophysiology. Volterra 1994.

1995

- Tetrapyrrole Photoreceptors. Freising (Ge) 1995.

1996

- 31st Wallenfels Meeting on : Modern Aspects of Photosynthesis Research. Wallenfels, (Ge) 1996
- Jacques Monod Conference on: "Synthesis and Function of Photosynthetic Complexes" Aussoi (Fr) 1996.
- European Science Foundation on: "Molecular Recognition in Photosynthesis" Jaca (SP) 1996.

1997

- Tetrapyrrole Photoreceptors. Blarney, (Ir) 1997.
- European Photobiology Congress. Stresa (I) 1997.
- European Congress of Plant Physiology. Firenze (I) 1997.

1998

- European Bioenergetic Conference. Goteborg (S) 1998.
- EUCHEM Conference on " Phosphorylation in Photosynthesis" Sigtuna (S) 1998.

-European Science Foundation on: "Photosynthetic antenna systems " Tata (Hu) 1998.

-Xth International Congress on Photosynthesis. Budapest, 1998.

- Jacques Monod Conference on:"Regulation of Photosynthesis " Aussoi (Fr) 1998

1999

-Congress of the Society for Experimental Biology. Edinburgh 1999.

-ESF conference on: "Interactions between chlorophylls and carotenoids in Photosynthesis" Antalya, Turkey, 1999.

-ESF conference on: "Non-Photochemical Quenching and the Xanthophyll Cycle - Mechanisms and Implications" Rehovot, Israel (1999).

2000

- International Symposium: Ion Coupled Vectorial Processes. Dusseldorf (Ge) 2000.

2001

- Gordon Research Conference on Carotenoids. Ventura (L.A.) USA 2001.

- Tetrapyrrole Photoreceptors. Providence (USA) 2001.

- Photosynthetic antenna Systems. Surfer Paradise (Brisbane) Australia 2001

- XIth International Congress on Photosynthesis. Brisbane Australia 2001

- European Congress of Photobiology. Lillehammer Norway (2001)

2002

-International Conference on Carotenoids. Honolulu, USA (2002).

-Gordon Conference on "Biochemical aspects of photosynthesis" (2002) Boston, USA.

-Collège de France " Journée Européenne de photosynthèse" (2002) Paris

-Natural and Artificial Photosynthesis (Royal Academy of Sciences, London (2002) U.K.

-Conference of The Scandinavian Society of Photosynthesis, (2002)Umea, Swe.

2003

-EMBO conference on: " Photosynthesis" Les Diablerets, january 26-31(CH)

-Signal Sensing and Plant Primary Metabolism. Potsdam, april 8-12 2003

-English-French Conference on Photosynthesis. Paris, june 2-3, 2003

2004

- Gordon Research Conference on Carotenoids. Ventura (L.A.) USA 2004.

- Western USA Conference in Photosynthesis. Asilomar (San Francisco) USA 2004.

- Satellite Meeting on Photosynthetic antenna complexes. Montreal (Can) 2004

- Annual meeting of the Italian federation of life science societies (Riva del Garda) 2004.

- International Congress of Photosynthesis. Montreal (Can) 2004.

- Chemistry and Biology: the transition between two centuries. Rome, Accademia dei Lincei (2004)

- Protein Structures meeting of the Italian Chemistry Society. Caserta (2004).

2005

- Congres de la Societè Française de Bioénergétique, Carry-le-Rouet (2005).

- Congres de la Societè Française de photosynthèse, Paris (2005)

- EEC project meeting Photosystem I: Copenhagen, 2005.

- 6th International Conference on Tetrapyrrole Photoreceptors in Photosynthetic Organisms. Luzern, 2005.

2006

- Plant and microbe adaptation to Cold. Salsomaggiore Terme, 2006.

- EEC project meeting Photosystem I and PSII: Tours, 2006.

- Conference of the American Society of Photosynthesis. Woods Hole (2006)(Keynote speaker)

- European conference on Non-photochemical Quenching. Parsberg (2005)

- Congress of the American Society of Photobiology. Puertorico (2006).

- Congresso italiano di Genetica Agraria. Ischia, (2006).

- International Workshop on NPQ. Parsberg, Ge, (2006)

- Congresso SIFV (Società Italiana Scienze della Vita) Riva del Garda (2006)

2007

- International Congress of Photosynthesis. Glasgow (UK).

- Antenna proteins satellite meeting. Drymen (UK)

- Congresso SIFV (Società Italiana Scienze della Vita) Riva del Garda (2007)

- Photosynthesis: from molecular mechanisms to the field. Jerusalem (II) (2007).

2008

- Gordon Conference on Photosynthesis-Mount Holyoke College in South Hadley, Ms, USA (2008).
- Gordon Conference on Biogenesis of Chloroplasts and mitochondria- New England University, Maine, USA.
- Photosynthesis 2008, Munich, (Ge).

2009: von Humboldt award lecture: *Light Harvesting Systems of plants and algae: solar energy trasformation into food and biofuels*. Bamberg, 2009

- International conference on “Non-photochemical quenching” Keynote lecture. Parsberg (Ge) 2009
- 4th conference of the Polish Society of Plant Biology (Krakov, Pl)
- Photosynthesis 2009 Bichl (Ge).

2010: Gordon Conference on Carotenoids. Ventura (ca) Jan 17-22, 2010

- ESP Photobiology School (Brixen, IT) June 22-27th 2010.
- Satellite Meeting on Light Harvesting Systems. Tianjin (China) August 2010
- Nordic Photosynthesis Society Conference. Tartu (ES) Oct. 10-15th, 2010

2011: International conference on “Non Photochemical Quenching” Passau (Ge) April 2011

- FEBS conference - Turin, June 2011
- International Carotenoid Society- Krakow (PL) July 2011.
- Plant-Light interactions – Neuchatel (CH) August 2011.
- Algal Biofuel Conference- Bielefeld (DE) September 2011.
- International conference on Photosystem II- Chengdu (China) November 2011.

2012: ESP Photobiology School (Brixen, IT) June 21-26th 2012.

- International Conference of Plant Molecular Biology. Jeju, Korea (October 21-27) 2012.
- SUNBIOPATHS meeting. Weizman Institut, Rehovot, Israel. Jan 12-15th, 2012

2013: -Summer school of Biophysics: “RENEWABLE ENERGY AND BIOFUELS: A BIOPHYSICAL and BIOCHEMICAL APPROACH” Venice, Jan 28th – Feb 1st, 2013.

- Joint meeting of the KBBE funded projects on Algal biotechnology ., Bruxelles, jan 20-24, 2013.
- EU-ROS, Budapest, 23-25 May 2013
- Summer School: “New Frontiers in Photosynthesis” San Michele all’Adige 29th-30th July, 2013
- XVI th Congress of Photosynthesis. St Louis, August 11-16th, 2013.

2014: Symposium on algal photosynthesis (Amsterdam, Vrije University) march 13th, 2014

- Congress of the Italian Photobiology Society (Trento, June 11-13, 2014)
- ESP Photobiology School (Brixen) June 16-21st, 2014
- International Symposium on the Regulation of Photosynthetic Function. Guilin, China, August 17-21, 2014.
- XVIth International Congress of Photobiology. Cordoba, Argentina. Symposium on “Regulation of Photosynthesis”. September 7-13 th, 2014.
- XVIth International Congress of Photobiology. Cordoba, Argentina. Symposium on “Bioengineering photosynthetic cells for Chemicals and Energy”: Tom Moore, Roberto Bassi”. September 7-13 th, 2014.
- CeBiTec Research Conference Prospects and challenges for the development of algal biotechnology Bielefeld, (Germany) September 21st-24th, 2014.
- Symposium “FROM PROTEINS FUNCTION TO BIOFUELS”. Padua, Sept 19th, 2014.

2015: The Evolution of Agriculture. National Academy of Sciences, Rome, Italy February 19-20, 2015

- Gordon Research Conference on Photosynthesis. Bentley, June 2015.
- Symposium on NON-Photochemical Quenching. Sept 22-28th Dusseldorf (Ge)
- Symposium on “Regulation of Photosynthesis” Kyoto, Japan (October 28th-Non 1st, 2015).

2016: International School on Biophysics. Jan 07-12, 2016

European Conference EUALGAE. April 05-08, 2016

Gordon Research Conference on Carotenoids. Lucca, May 22-27th, 2016.
Enlight workshop, Pisa, May 15-16th, 2016
International conference on Plant Signalling and Behaviour. St Petersburg June 18-22nd, 2016.
European Bioenergetic Conference (EBEC) Riva del Garda, July 2-6th, 2016
Satellite Conference on Light Harvesting Systems. Egmond aan Zee, NL, August 4-7th, 2016
International Conference on Photosynthesis, Maastricht. August 8-13, 2016.

2017: European Conference on Photobiology, Pisa: Sept 11-14, 2017.
German Botanical Society, Kiel 17-09-2017
International CeBiTec Research Conference 2017 Sept 24-27th
Sun to Biomass: Naantali (Fin) 2017, Feb 20-23

2018: PATRIMOINES, SCIENCES ET TECHNOLOGIES- Paris, Feb. 13 –
French Photosynthesis Society Conference, April 4-7th
Molecular Plant international Symposium, Xian, China, June 12-15th
Gordon Conference on Carotenoids, July 18-22nd (2018)
World Conference on Biology- Beijing, China, October 10-17, 2018

2019: 9th International Conference on Algal Biomass, Biofuels, Bioproducts. Boulder, USA June 17-19.
Gordon Conference on Photosynthesis. July 19-25th, 2019

Annex 3: Organisation of Conferences

- 1993: Chairman of the annual meeting of the Italian Society of Plant Physiology.
- 1998: Co-chairman of the annual meeting of the Italian Society of Photobiology.
- 1997 Co-chairman of the ESF (European Science Foundation) conference on "Tetrapyrrole Photoreceptors". Blarney (Ir).
- 1997 Co-chairman of the "European Congress of Photobiology" Stresa (I).
- 1998 Chairman of the Conference "Photosynthesis 2000" Switzerland
- 1999 Chairman of the ESF (European Science Foundation) Conference on "Tetrapyrrole Photoreceptors". Castelvechio Pascoli (I).
- 2001 Chairman of the symposium "Pigment-protein gene expression", XI International Congress of Photosynthesis, Brisbane.
- 2004. Chairman of the conference: "Photosystem I: structural organization and dynamics. Aix-en-Provence
- 2004. Chairman of the symposium "Chlorophyll-based Light Harvesting systems", XII International Congress of Photosynthesis, Montreal
 - 2007 Chairman of the symposium "Light Harvesting systems: structure, function and regulation", XIII International Congress of Photosynthesis, Glasgow.
 - 2007. Chairman of the symposium "Regulation of Light Harvesting Complexes", XIII International Congress of Photosynthesis, Glasgow
 - 2007. Chairman of the session: "Chloroplast and mitochondria" at the Meeting of the French Plant Biology meeting. Versailles.
 - 2009. Organizer of the 1st Meeting of the Italian Society of Plant Biology and of the Symposium on Plant and Animal Evolution. Verona
- 2010- Organizer of the EEC Harvest meeting (Scientific meeting + English Scientific Writing course+ practical course on Membrane protein expression and refolding in vitro. Venice/Verona September 22-30,.

- 2011 Organizer of the SUBIOPATH project meeting in Verona, March 25-28th.
- 2013. Co-Organizer of the: RENEWABLE ENERGY AND BIOFUELS: A BIOPHYSICAL AND BIOCHEMICAL APPROACH. Venice. Jan 28-Feb 2nd,
- 2014- Organizer of the: ACCLIPHOT ITN research network meeting and training course Verona, June 8-15th.
- 2016.- Organizer of the symposium "Light Harvesting Proteins" at the International Congress of Photosynthesis, Maastricht,
- 2017- Organizer of the symposium "Light signalling and photoprotection" at the European Photobiology Conference. Pisa, I, Sept 1-6th.
- 2019- Organizer of the Conference: Biophysics of Photosynthesis: from Molecules to the field. Rome, October 2-4th.

Annex 4: Teaching

- 2011-20:** Plant Biochemistry and Physiology (undergraduate); Bioenergy and Biofuels (graduate); Plant Stress molecular biology (graduate).
- 2010 -** Plant Biochemistry and Physiology (undergraduate); Bioenergy and Biofuels (graduate); Plant Stress molecular biology (graduate).
- 2005-2010:** Teaching to graduate and undergraduates: Plant Secondary Metabolism and bio-engineering, Plant Biochemistry, Molecular Ecophysiology.
- 2006-2009:** General Biology (undergraduate).
- 2002-2004:** Biochemistry and Molecular Biology, Université Aix-Marseille II (France). Lectures in Plant Cell Biology (4th year), Plant Molecular Biology (graduate) and General Biochemistry (undergraduate).
- 1987:** Lecturer of Comparative Biochemistry.
- 1979 to 1987:** Botany. Lectures and practicals. Department of Biology, University of Padua.
- 1978:** Demonstrator of Microbiology
- 1977-1983 -** High school teacher in Mathematics and Natural Sciences.

13/01/2020

Roberto Bassi

