



Roberto Bassi

Professor of Plant Physiology Vicenza, 22 February 1955 - Member of the Accademia Nazionale dei Lincei - member of the "Academia Europaea". - Member of EMBO -Member of the National Academy of Technology

Anton Dohrn Experimental Station, Naples-Italy and Department of Biotechnology, University of Verona Strada Le Grazie, 15. I-37134, Verona, Italy E-mail: roberto.bassi@univr.it

Education: 1977: Degree in Biology at the University of Padua.

Academic history: 1983-1991 Researcher at the Botanical Institute and Department of Biology, University of Padua.

1992-1993: Associate Professor of Plant Physiology, University of Urbino (Pesaro, I).

1993-2002: Associate Professor of Plant Physiology, University of Verona (Verona, I).

2002-2005: Professor of "Biochemistry and Molecular Biology", University of Aix-Marseille (Marseille, F).

Since 2005-: Full Professor of Plant Physiology, University of Verona (Verona, I).

Since 2024 : President, Stazione Sperimentale Anton Dohrn (Naples, Italy).

Research area: He has always been interested in primary productivity and in particular in photosynthesis, photoprotection, chloroplast biogenesis, photoperception, bioenergy, biofuels. He was a pioneer in the study of light harvesting systems for plants, mosses and unicellular algae (**Light Harvesting Complexes, LHCs**): the supramolecular complexes of pigments and proteins that are mainly responsible for the absorption of photons and determine the efficiency of the photosynthetic process. LHCs are the most abundant membrane proteins in the biosphere and bind 70% of chlorophyll, the pigment that makes the earth a green planet. It is currently the P.I: of the ERC Advance Grant GRINSUN (Green Interface between Sun Energy and the Biosphere).

Visits and assignments to foreign institutions: Between 1983 and 1990 he carried out research activities in various European laboratories: Department of Physiology, Carlsberg Research Centre, Copenhagen, DK (Prof. Diter von Wettstein); The Institut de Biologie Physico-Chimique, Paris (Prof. Pierre Joliot) and the Department de Biologie Moléculaire, Université de Genève (Prof. Jean-David Rochaix); from 1994 to 1996 he taught Photobiology at the University of Lausanne. He was Visiting Research Professor at the Chinese Academy of Sciences in Beijing (2012), at the Juelich Phenotyping Centre (GE) and at the University of Berkeley (2017).

Publications: He is the author of 302 articles in international newspapers and 38 book chapters.

Bibliometrics: H-factor: 106 (<https://scholar.google.it/citations?user=-SNf1wMAAAJ&hl=it>); citations: 30,600,000.

Conferences and seminars: He has given invited lectures at more than 120 international congresses and has given more than 200 seminars at universities and research institutes. These include the "Daniel Arnon Lecture" at the University of Berkeley (2015), the "Annual Lecture in Plant Biology" at the Chinese Academy of Sciences in Beijing (2012) and the Diter von Wettstein Memorial Lecture in Kiel in 2018.

Institutional and academic positions. 2010-2019: Vice-President of the International Society of Photobiology; Since **2012** he has been a member of the editorial board of "Molecular Plant"; **2019-2020:** Director of the Doctoral School in Natural Sciences and Engineering of the University of Verona; Since **2012** he has been president of the scientific committee of the Anton Dohrn Zoological Station in Naples (I). He was (**2012-2015**) a member of the scientific committee of CREA (Center for Agronomic Research) and of the Department of Biotechnology of the CNR (in 2015). (2023-) Member of the International Affairs Commission, the Agriculture Commission and the Environment Commission of the Accademia Nazionale dei Lincei.

Awards: **1996-Baccarini-Melandri Prize . 2009:** von Humboldt-Helmholtz Prize; **2012:** Chinese Academy of Sciences Award;

2018: Herlitzka Prize for Physiology.

Selected publications:

Bassi, R., L Dall'Osto (2021) Dissipation of light energy absorbed in excess: the molecular mechanisms. Annual Review of Plant Biology 72, 47-76

Su, X, D Cao, X Pan, L Shi, Z Liu, L Dall'Osto, **R Bassi**, M Li (2022)

Supramolecular assembly of chloroplast NADH dehydrogenase-like complex with photosystem I from *Arabidopsis thaliana*. **Molecular Plant** 15 (3), 454-467

Guardini, Z., M. Bressan, R. Caferri **R. Bassi** and L. Dall'Osto (2020). Identification of a pigment cluster catalyzing fast photoprotective quenching response in CP29. **Nature Plants**, 6(3):303-313. doi: 10.1038/s41477-020-0612-8.

Girolomoni, L., Cazzaniga, S., Pinnola, A., Ballottari, M. and **Bassi, R.** (2019) LHC3R3 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 LHC3R1 protein dynamics identifies two distinct states responsible for multimescale 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 LHCII (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 LHC3R3, 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 an higher plant antenna protein provides identification of chromophores bound into multiple sites. **Proc. Natl. Acad. Sci USA**.96, 10056-10061.

Publishing activity

Associate Editor of **Molecular Plant**. Plants Associate Editor, **Biology Direct Associate Editor**. He was previously associate editor of *BMC Plant Biology*, *Journal of Phycology*, *Planta*, and *Journal of Integrative Plant Biology*.