

***Curriculum Vitae
and
Publications of***

Professor Agepati S. RAGHAVENDRA

FNA, FASc, FNASc, FNAAS, FTWAS & Former JC Bose National Fellow
School of Life Sciences, Department of Plant Sciences
University of Hyderabad, Hyderabad 500 046, INDIA

Tel: +91-40-23134555 ; +91-40-29881003 ; Fax: +91-40-23010145
Email: asrsl@uohyd.ernet.in

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Email: asrsl@uohyd.ernet.in, as_raghavendra@yahoo.com

Research since 1971 (49 years)

Research Interests: PLANT PHYSIOLOGY & PLANT BIOCHEMISTRY

- Photosynthesis: Carbon metabolism

- Interorganelle interactions between chloroplasts and mitochondria

- Guard cell bioenergetics & Stomatal signal transduction

Postgraduate Teaching: M. Sc., M. Phil. & Ph. D. students: 44 years (since 1976).

Subjects taught: Plant Physiology, Plant Biochemistry, Principles of Biochemistry,
& Natural Plant Products: Biochemistry & Biotechnology

Education

Ph. D. Botany (Photosynthesis) 1975 - Sri Venkateswara University, Tirupati, India

M. Sc. Botany (Plant Physiology) 1971 - Sri Venkateswara University, Tirupati, India

B. Sc. Botany, Zoology & Chemistry 1969 - Sri Venkateswara University, Tirupati, India

Certificate in German 1990 - Speak & Write, Marburg, Germany

Positions held in INDIA

Dean, School of Life Sciences, 2004 -2010 & 2015 - University of Hyderabad, Hyderabad

Head, Dept of Plant Sciences 1998 – 2001 - University of Hyderabad, Hyderabad

Professor, 1996 onwards, Associate Professor, 1985 – 1996 - School of Life Sciences,
University of Hyderabad, Hyderabad

Deputy Director (Plant Physiology), 1982 – 1985 - Rubber Research Institute of India,
Kottayam, Kerala

Assistant Professor (Botany), 1976 – 1982 - Sri Venkateswara University, Tirupati

Scientist (Plant Physiology), 1974 – 1976 - Central Plantation Crops Res Inst (ICAR),
Vittal, Karnataka

Elected Fellow in Science Academies

Third World Academy of Sciences, Trieste, Italy

Indian National Science Academy, New Delhi

Council Member, 2010 – 2012

Convener, Hyderabad Local Chapter

Indian Academy of Sciences, Bangalore, India

Council Member, 2010 - 2012

National Academy of Sciences, Allahabad, India

Convener, Hyderabad Local Chapter

Council Member, 2016 – 2017

National Academy of Agricultural Sciences, New Delhi, India

AP Akademy of Sciences, Hyderabad, India

Vice President, 2005 - 2009

Assignments Abroad: Visiting Professor / Visiting Scientist

- Visiting Professor, Tokyo University of Science & Technology, Jan 2011 –
Faculty of Science, Department of Biology, Noda, Japan
- JSPS Senior Visitor, Japanese Society for Promotion of Science, Jan 2010
Tokyo University of Science, Tokyo, Japan &
Jan 1999 -- Kyoto University of Science, Kyoto, Japan
- Visiting Professor, University of Osnabruck, May 2009; May – Aug 2010 –
Department of Plant Physiology, Osnabruck, Germany
- Visiting Professor, Arizona State University, Tucson, Arizona, USA – October 2005
- Visiting Scientist, 2003, 2004 - CEA de Cadarache, St Paul lez Durance, France
- Visiting Researcher, 2002 - Research Institute of Innovative Technologies for Earth (RITE),
Kyoto, Japan
- University of Minnesota-Duluth, May/June 2001 - Department of Biology, Duluth, MN, USA
- Visiting Scientist, 1997 - Smithsonian Environmental Res Center, Edgewater,
Maryland, USA
- National University of Singapore, May/June 1995 - Department of Botany, SINGAPORE
- National University of Rosario, 1994 & 1999, Faculty of Biochemistry,
Rosario, ARGENTINA
- Universite de Paris-Sud, May/June 1993, Inst Mol Biologie des Plantes, Orsay, FRANCE
- Alexander Humboldt Fellow, 1990, 1991, 1993, 1996, 2000, 2009
Universitat Wurzburg, Wurzburg, GERMANY
Universitat Gottingen, Gottingen, GERMANY
Heinrich-Heine-Universitaet, Duessedolf, GERMANY
Universitaet Osnabrueck, GERMANY
- Career Investigator (Scientist), 1978 – 1980 - Centro de Estudios Fotosinteticos y
Bioquimicos (CEFOBI), Rosario, ARGENTINA

Academic Awards: International

- Corresponding Member, 2012, American Society of Plant Biology
- Mercator Visiting Professor May - Aug 2010, Deutsch Forschungs Gemeinschaft (DFG),
Germany
- Symposium Honoree PRS 2017 Photosynthesis Research Conference, University of
Hyderabad, 2017
- Elected Fellow, Third World Academy of Sciences (TWAS), Trieste, Italy.
- Humboldt Fellowship 1990-1991, 1993, 1996, 2000 & 2009 -- Alexander von Humboldt
Foundation, West Germany
- JSPS Senior Visitor, 1999 & 2010 -- Japanese Society for Promotion of Science, Japan
- Asia Representative: International Society for Photosynthesis Research, 2007 - 2013

Academic Awards: National

- JC Bose National Fellow 2007-2017, Dept of Science & Technology (DST), New Delhi
- ISPP Fellow, 2015, Indian Society of Plant Physiology
- Life Time Achievement Award.in Plant Physiology for 2015 – HS Srivastava Foundation,
Lucknow
- Dr K. Ramaiah Memorial Award 2005-2006 -- National Academy of Agricultural Sciences,
New Delhi
- Professor TS Sadasivan Lecture Award 2006 -- Indian National Science Academy,
New Delhi

Curriculum Vitae and Publications of Prof A.S. Raghavendra

Recognition Award 2005 -- National Academy of Agricultural Sciences, New Delhi

AP Scientist of the Year 2005 -- AP State Council of Science & Technology, Hyderabad

JJ Chinoy Gold Medal 2002 -- Indian Society for Plant Physiology, New Delhi

INSA Medal for Young Scientists – 1977 -- Indian National Science Academy, New Delhi

Young Scientist Award in Botany – 1976 -- Andhra Pradesh Academy of Sciences,
Hyderabad, India

Career Award in Sciences, 1991-1994 -- University Grants Commission, New Delhi, India

Memorial Lectures

17th Nuggehalli Narayana Memorial Lecture, Biochemistry Division, Indian Institute of Science, Bangalore. February 2013

Professor A.N. Namboodri Memorial Lecture, Department of Botany Golden Jubilee Celebrations, University of Kerala. March 2008.

Professor Parija Memorial Lecture, Utkal University, Bhubaneswar. March 2000

Professor G.V. Joshi Memorial Lecture, Indian Society for Plant Physiology, Udaipur. Dec 1999.

Administrative Experience

Dean, School of Life Sciences – 2004-2010 & 2014, University of Hyderabad, Hyderabad

Programme Coordinator, UGC-SAP- Centre of Advanced Studies, 2008-2013,
School of Life Sciences, University of Hyderabad, Hyderabad

Principal Investigator, UoH-DBT-CREBB, Centre for Research and education in Biology & Biotechnology – 2007-2013, School of Life Sciences, University of Hyderabad, Hyderabad, India

Head, Dept of Plant Sciences – 1998-2001, University of Hyderabad, Hyderabad, India

Deputy Director & Head, 1982 – 1985, Plant Physiology & Exploitation Division,
Rubber Research Institute, Kottayam, India

Head, Plant Physiology Section, 1974-1976, Central Plantation Crops Research Institute,
(ICAR), Vittal, Karnataka, India

Principal Investigator & Research Supervisor, 1974 onwards

Organizational Experience

Organizing Secretary, Indo-Japan Joint Workshop on Signal sensing and transduction in Plants. Sponsored by DST (India) and JSPS (Japan). Dec 2013

Convener, Andhra Pradesh Science Congress, AP Akademy of Sciences. Nov 2013

Organizer/Chair, Symposia on Stomatal Guard Cells, International Botanical Congresses,
St Louis, MO (USA) 1999; Vienna, Austria 2005; Melbourne, Australia 2012;
Schengen, China 2017

Convener, International Workshop & 33rd Biannual Meeting of Indian Society of Cell Biology,
University of Hyderabad, Hyderabad, India. December 2009

Convener, International Symposium on “Light and Life”, University of Hyderabad,
Hyderabad, India. August 2007

Convener/Organizing Secretary, International Satellite Symposium on “Chloroplasts:
Development and Function”, Indian National Science Academy, New Delhi, India
Aug 2001

Convener/Organizing Secretary, National Symposium on Current Trends in Plant Physiology
and Biochemistry, University of Hyderabad, Hyderabad, India. January 1998

Academic Coordinator, Refresher Courses in Botany & Biology, Academic Staff College,
University of Hyderabad

Membership in Bodies of CSIR/DST/DBT/UGC/NAAC and other Universities/States:

Member, Programme Advisory Committee (PAC) on Plant Sciences, DST (2009 onwards)
Member, NMTLI Monitoring Committee, CSIR (2008-2012)
Member, CSIR Plant Science Research Committee (2011 onwards)
Member, DBT Task Force on Plant Metabolic Engineering (2010-2012)
Member, Plant Biology Monitoring Committee, Institute of Life Sciences, Bhubaneswar
Member, Several Selection Committees of CSIR, ICAR/ASRB, BARC, NBRI, CDFD, CCMD,
Central & State Universities DBT, ICAR
Member, Panel of National Assessors & NAAC Accreditation Committees
Member, UGC Committees, IX/X/XI Plan Visiting Committee, SAP Programmes
Major Research Projects (Plant Science), Emeritus Professorships
Member, Research Advisory Committee, Yogi Vemana University
Member, SAP Advisory Committees -- Bangalore University; Sri Venkateswara University;
Karnataka University
Member, Board of Studies; Botany, Sri Venkateswara University; Life Sciences, Pondicherry
University; Biotechnology, Andhra University; Botany, Sri Krishnadevaraya
University, Yogi Vemana University
Member, Academic Council, AP Agricultural University
Member, Expert Committee for AP Scientist of the Year, AP State Council of Science &
Technology, Hyderabad
Member, Expert Committee for Odisha Bigyan Academy Awards
Member, Expert Committee for Maharashtra State Eligibility Test (MSET), Pune
Chairman, Academic Council, CDFD, Hyderabad
Chairman, Governing Body, Nizam College, Hyderabad

Membership in Administrative Bodies of University of Hyderabad:

Member, Executive Council
Member, University Court
Member, Academic Council
Chairman, Deans Committee
Chairman, Unassigned Grants Committee
Chairman, MoU Committee
Chairman, Departmental Promotion Committee
Chairman, Stagnation Committee
Chairman, School Board of Life Sciences
Member, School Boards of Chemistry/Social Sciences
Member, Investment Committee
Member, Library Advisory Committee
Member, Annual Report Committee
Member, Reappointments Committee
Member, Committee for Adjunct Professors

Editorial Assignments

Editor-in-Chief:	<i>Journal of Plant Biology</i> , India
Advisory Editor:	<i>Advance in Photosynthesis & Respiration</i> (Book Series), Springer, Germany
Member, Editorial Board:	<i>Photosynthesis Research</i> (Springer, Germany) <i>Planta</i> (Springer, Germany) <i>Journal of Plant Physiology</i> (Elsevier, The Netherlands) <i>Asia Pacific Biotechnology News</i> (World Press, Singapore) <i>Indian Journal of Experimental Biology</i> <i>Plant Physiology & Biochemistry (India)</i> <i>Indian Journal of Plant Physiology</i> <i>Physiology and Molecular Biology of Plants</i>
Guest Editor:	<i>Frontiers in Plant Sciences</i>
Member, Current Science Association	

Research Publications:

Books/Special Issues of Journals:	9 (Nine)
Papers in Refereed Scientific journals & Book Chapters:	226 (Two hundred twenty six)
Short Papers/Abstracts/Presented at meetings:	190 (One hundred and ninety)
	<u><i>Complete List is attached</i></u>

Research Grants: 33 (Thirty three)

International Agencies: 9 (Nine)

- Third World Academy of Sciences (TWAS), Trieste, Italy.
- Volkswagen Stiftung, Hannover, Germany
- Indo-French Centre for Promotion of Advanced Research (IFCPAR)
- DST-DAAD Indo-German Collaborative Research Programme (DST-DAAD)
- DST-DFG Indo-German Collaborative Research Programme (DST-DFG)
- UGC-ISF Indo-Israel Collaborative Research Project (UGC-ISF)

Indian Agencies: 24 (Twenty four)

- Council of Scientific & Industrial Research (CSIR), New Delhi
- Indian National Science Academy (INSA), New Delhi
- Department of Biotechnology (DBT), New Delhi
- Department of Science & Technology (DST), New Delhi
- University Grants Commission (UGC), New Delhi
- Department of Atomic Energy (DAE), Bombay
- Indian Council of Agricultural Research, New Delhi
- Central Sericultural Research & Training Institute (CSRTI), Mysore

List of Projects is attached

Supervision of Research:

Ph.D.: Degrees Awarded:	24 (Twenty four)	Under Supervision: 4 (Four)
M. Phil.: Degrees awarded:	11 (Eleven)	
M. Sc. Project work:	20 (Twenty)	
Technicians/Assistants:	3 (Three every year)	

Scientific/Professional Affiliation

Corresponding Member: American Society of Plant Biology
Life-Member: Indian Society for Plantation Crops
Society for Plant Physiology and Biochemistry
Indian Society for Plant Physiology
Indian Photobiology Society
Member: American Society of Plant Physiologists
Scandinavian Society for Plant Physiology
Japanese Society of Plant Physiologists
Asia Representative: International Society for Photosynthesis Research, 2007 - 2013

Reviewer of Project Proposals - International

National Science Foundation, USA; US Department of Agriculture, USA;
Centre National de la Recherche Scientifique (CNRS), France;
Deutsch Forschungs Gemeinschaft (DFG), Germany
CORDIS, European Commission; Israel Science Foundation
Indo French Centre for the Promotion of Advanced Research (IFCPAR/CEFIPRA)

Reviewer of Project Proposals – India

DBT; DST; ICAR; DAE/BRNS; CSIR; UGC; SERB

Reviewer of Science Journals - International

Proceedings of National Academy of Sciences USA; Cell; Trends in Plant Science;
Critical Reviews in Plant Sciences; Annual Reviews in Plant Biology; BMC Plant Biology;
Plant Cell; Plant Physiology; Plant Journal; Plant & Cell Environment; Planta;
Plant & Cell Physiology; Physiologia Plantarum; Australian Journal of Plant Physiology/
Functional Plant Biology; Journal of Plant Physiology; Journal of Experimental Botany;
Nature Report; PLOS one

Reviewer of Science Journals - Indian

Current Science; Journal of Biosciences; Indian Journal of Experimental Biology;
Indian Journal of Biochemistry & Biophysics; Indian Journal of plant physiology;
Proceedings of Indian National Science Academy

Countries Visited:

Argentina	Australia	Belgium	Chile	China	Finland
France	Germany	Greece	Hong Kong	Hungary	Israel
Japan	Malaysia	Poland	Singapore	South Africa	Spain
U.K.	USA				

Personal Details:

Date of Birth : 17 November 1950
Nationality : Indian
Passport No. : Z4393765
Marital Status : Married - Two Children (both married)

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Research Guidance

Degrees Awarded:

(Ph. D., M. Phil., and M Sc.)

Ph. D.

K. V. Apparao
B. Chinthapalli
M.T. Devi
J. Gayathri
R. Ghosh
J. Murmu
K. Padmasree
L. Padmavathi
K. Parvathi
A.V. Rajagopalan
K Riazunnisa
K Saradadevi
D. Suhita
T. Vani
G. Vijay Kumar
U.K. Avasthi
B. Sunil Babu
Nupur Srivastava
T. Sai Krishna
P. Mallikarjuna Rao
P. Raj Sheel
G. Gayatri
A. Srinivas
V. Aswani

M. Phil.

B. Chinthapalli
K. Dass
T.R. Majundari
K. Parvathi
C. Rama Rao
M.M. Reddy
K. Saradadevi
G.V. Sessaiah
T. Shyamala Rani
D. Sudha Sundari
T. Vani

Post-Docs

Dr K. Padmasree
Dr. K. Parvathi
Dr K Saradadevi
Dr T Vani
Dr L Padmavathi
Dr Ch. Dinakar
Dr M. Bakshu
Dr A. Bindu Prasoon
Dr G. Vijay Kumar
Dr. U.K. Avasthi
Dr. B. Sunil Babu
Dr. A. Srinivas
Dr. Sunitha Vaidya
Dr. Gurpreet Kaur Sidhu

Visting Associates from India

Dr R.M. Agarwal
Dr P. Dwivedi
Dr Meeta Jain
Dr Anuj Saxena
Dr Deepak Ganjewala

Collaborators/Long-term Visitors, from outside India

Prof H.W. Heldt (Germany)
Prof U. Heber (Germany)
Prof R. Scheibe (Germany)
Prof P. Westhoff (Germany)
Prof Dr E. Grill (Germany)
Prof Dr H. Bauwe (Germany)
Prof K. Izui (Japan)

Prof Govindjee (USA)
Prof C.S. Andreo (Argentina)
Prof W.C. Plaxton (Canada)
Prof B.N. Smith (USA)
Dr A. Vavasseur (France)
Dr. A. Goyal (USA)
Dr C. Willmer (UK)

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FUNDING OF RESEARCH PROJECTS: 33 (Thirty three)
(Either completed or in progress)

Supported by International Agencies: 9

Supported by Indian Agencies: 24

Supported by International Agencies: 9 (Nine)

1. "Uptake and assembly of light harvesting chlorophyll protein by spinach chloroplasts", Third World Academy of Sciences (TWAS), Trieste, Italy. Duration: 1987-88. Total Cost: US \$4,000.
2. "Regulation of C4 phosphoenolpyruvate carboxylase protein kinase in leaves and mesophyll protoplasts of *Amaranthus hypochondriacus*", Third World Academy of Sciences (TWAS), Trieste, Italy. Duration: 1995-1996. Total cost: US\$ 5,000.
3. "Biochemistry and molecular biology of phosphoenolpyruvate carboxylase from *Alternanthera* species with different photosynthetic pathways. Volkswagen-Stiftung, Hannover, Germany. Duration: 1996-1999. Total cost: DM 100,000.
4. "Signal Transduction in stomatal guard cells", Indo-French Centre for Promotion of Advanced Research, New Delhi. Duration: 1999-2002. Total cost: Rs. 59,00,000.
5. "Interaction of chloroplastic malate metabolism with photorespiration and mitochondrial respiration", Dept of Science and Technology - German Academic Exchange Service (DST-DAAD), New Delhi. Duration: 2003-2005. Total cost Rs. 6,84,000.
6. "Cross Talk Between Secondary Messengers in Guard Cells during Abiotic Stress". Dept of Science and Technology, Deutsche Forschungs Gemeinschaft (DST-DFG), New Delhi. Joint Research Project. Duration: 2008-2010. Total cost Rs. 11,42,400/- .
7. "Cell Type Specificity of Dynamic Signaling Network for Pathogen Recognition in Plants" DST – JSPS Collaborative Research Project. DST, New Delhi. Duration 2011-13. Total Cost: Rs. 6,44,000/-
8. "Signal Sensing and Transduction in Photosynthetic Organisms-From Cyanobacteria to Land Plants" Indo-Japan Workshop, DST, New Delhi. Duration 2013-14. Total Cost: Rs. 8,30,000/-
9. "Redox constraints regulate photorespiration". India-Israel (UGC-ISF) Joint Research Project. Duration 2017-2020. Total cost: Rs 93,81,600.

Supported by National Agencies: 24 (Twenty four)

10. "Photosynthesis and respiration of guard cells in relation to stomatal function", Council of Scientific and Industrial Research (CSIR), New Delhi. Duration: 1986-89. Total Cost: Rs.2, 20,000/-.
11. "Mesophyll and bundle sheath proteins from C4 plants", Indian National Science Academy (INSA), New Delhi. Duration: 1987-88. Total Cost: Rs.40,000/-.
12. "Mechanism of reduced photorespiration in C3-C4 intermediate species of *Alternanthera*", Department of science and Technology (DST), New Delhi. Duration: 1989-92. Total Cost: Rs.5, 71,250/-.
13. "Structure and function of leaves and chloroplasts in relation to water or temperature", University Grants Commission (UGC), New Delhi. Duration: 1989-92. Total Cost: Rs.3, 64,600/-.
14. "Carbon metabolism in guard cells and stomatal function in adaxial epidermis, Department of Atomic Energy (DAE), Bombay. Duration: 1990-93. Total Cost: Rs. 4, 43,600/-.

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15. "Interaction between photosynthesis and respiration in leaves and protoplasts", supported under Career Award Scheme of University Grants Commission (UGC), New Delhi. Duration: 1991-94. Total cost: Rs.5, 24,810/-.
16. "Cytosolic microenvironment of mesophyll cells related to light activation of PEP carboxylase in C₄ plants", Council of Scientific & Industrial Research (CSIR), New Delhi. Duration: 1994-97. Total cost: Rs. 3, 77,000/-.
17. "Regulation of C₄ phosphoenolpyruvate carboxylase by phosphorylation and oligomerization", Dept of Atomic Energy (DAE), Bombay. Duration: 1995-1998. Total cost: Rs. 4, 33,200/-.
18. "Bioprocess for optimized production of fungicidal sesquiterpenes from hairy root cultures of potato and henbane", supported by Department of Biotechnology (DBT), New Delhi. Duration: 1999-2002. Total cost: Rs. 55,80,000/-.
19. "Regulation by methyl jasmonate and fusicoccin of intracellular pH and calcium of guard cells in relation to stomatal movement", supported by Council of Scientific Industrial Research (CSIR), New Delhi. Duration: 1999-2002. Total cost: Rs. 11,13,000/-.
20. "Dependence of photosynthesis on mitochondrial respiration in mesophyll protoplasts of pea (*Pisum sativum*), supported by the Department of Science and Technology (DST), New Delhi. Duration: 2001-2005. Total cost: 21,73,754/-.
21. "Regulation by temperature of phosphoenolpyruvate carboxylase in leaves of C₃ and C₄ plants" supported by University Grants Commission (UGC), New Delhi. Duration: 2003-2006. Total cost Rs. 6,97,500/-.
22. "Biochemical signals during the Interaction between mitochondrial Respiration and Photosynthesis", Council of Scientific and Industrial Research (CSIR), New Delhi. Duration: 2003-2007. Total cost Rs. 20,96,000/-.
23. "Evaluation, compositional analysis and standardization of antioxidant molecules from selected medicinal plants". University of Hyderabad-Institute of Life Sciences, Hyderabad. Duration: 2005-2007. Total cost. Rs. 6,70,000/-.
24. "Biochemical Signals during the Cross talk between mitochondria and chloroplasts to optimize photosynthetic carbon metabolism". JC Bose National Fellowship, Department of Science & Technology, (DST), New Delhi. Duration: 2007-2017. Total Cost: Rs 1,23,80,000/-.
25. "Signal Transduction Components in Guard Cells During Stomatal Closure Induced by Abscisic Acid or Methyl Jasmonate". Department of Biotechnology (DBT), New Delhi. Duration: 2008-2011. Total Cost: Rs 41,94,000/-.
26. "Towards Development of a Single Cell C₄ Photosynthetic System in Rice". Indian Council of Agricultural Research (ICAR) – National Agricultural innovation Project (NAIP), New Delhi. Duration: 2008-2012. Total Cost: Rs 73,16,200/-.
27. "Mechanism and Components of Signal Transduction during Stomatal Closure by elicitors". Council of Scientific and Industrial Research (CSIR), New Delhi. Duration: 2009-2012. Total cost: Rs. 22,76,000/-.
28. "Metabolite Library of *Curcuma longa* L. and *C. aromatica* : Variability in Cultivars and Assessment of Therapeutic Properties." Department of Biotechnology (DBT), New Delhi. Duration: 2010-2013. Total Cost: Rs 84,49,000/-.
29. DST – Brain Storming Session on "Plant Metabolomics", Department of Plant Sciences, School of Life Sciences, University of Hyderabad, Hyderabad. 20th December 2014. Total Cost: Rs. 5,00,000/-.

Curriculum Vitae and Publications of Prof A.S. Raghavendra

30. "Incentivizing Research in Agriculture", Component II: Towards understanding the C3-C4 intermediate pathway in Poaceae and functionality of C4 genes in rice". Central Rice Research Institute (CRRRI), Cuttack (Odisha). Duration: 2015-2017. Total cost: Rs. 1,08,00,000/-.
31. "Role of proline in protection of photosynthesis under highlight and oxidative stress". Council of Scientific and Industrial Research (CSIR), New Delhi. Duration: 2015-2018. Total cost: 24,72,000/-.
32. "Engineering photosynthesis in Mulberry for resilience to climate change: A C4 approach" Central Sericultural Research & Training Institute (CSRTI), Mysore. Duration: 2017-2019. Total Cost: 23,36,800/-.
33. "Modulation of photorespiration by oxidative stress: Role of reactive oxygen and reactive nitrogen species" Science and Engineering Research Board (SERB), Department of Science & Technology(DST), New Delhi. Duration: 2018-2021. Total Cost: Rs.36,48,480/-.

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RESEARCH GUIDANCE:

Ph.D.: Degrees Awarded: 24 (Twenty four)

1. R. Ghosh. 1989. Characteristics, regulation and development of ammonium transport in diazotrophic cyanobacteria. University of Hyderabad, Hyderabad.
2. T. Vani. 1990. Respiration, photosynthesis and plasma membrane redox system of guard cells in relation to stomatal function. University of Hyderabad, Hyderabad.
3. M. Tirumala Devi. 1993. Photorespiratory metabolism in C₃-C₄ intermediate species of *Alternanthera* and *Parthenium*. University of Hyderabad, Hyderabad.
4. K. Saradadevi. 1995. Photosynthesis and respiration in mesophyll protoplasts of pea (*Pisum sativum*) in response to osmotic stress and photoinhibition. University of Hyderabad, Hyderabad.
5. J. Gayathri. 1996. Purification, properties and phosphorylation of phosphoenolpyruvate carboxylase from leaves of *Amaranthus hypochondriacus*, a NAD-malic enzyme C₄ plant. University of Hyderabad, Hyderabad.
6. A.V. Rajagopalan. 1997. Light activation of phosphoenolpyruvate carboxylase in leaf discs of C₄ plant species in relation to alkalization of cell sap. University of Hyderabad, Hyderabad.
7. K. Padmasree. 1998. Biochemical basis of the importance of mitochondrial oxidative electron transport in optimizing photosynthesis in mesophyll protoplasts of pea (*Pisum sativum*). University of Hyderabad, Hyderabad.
8. K. Parvathi. 1999. Purification, properties and regulation of phosphoenolpyruvate carboxylase from leaves of *Amaranthus hypochondriacus* in relation to bicarbonate, calcium and light. University of Hyderabad, Hyderabad.
9. B. Chinthapalli. 2003. Regulation by temperature of phosphoenolpyruvate carboxylase in *Amaranthus hypochondriacus*, a NAD-ME type C₄ plant. University of Hyderabad, Hyderabad.
10. L. Padmavathi. 2004. Importance of mitochondrial electron transport for optimizing photosynthesis: Photoinhibition, temperature stress, Kok effect and role of ascorbic acid. University of Hyderabad, Hyderabad.
11. J. Murmu. 2004. Regulation of NADP-malic enzyme and phosphoenolpyruvate carboxylase in leaves of C₄ plants. University of Hyderabad, Hyderabad.
12. D. Suhita. 2006. Signaling Components during stomatal closure induced by methyl jasmonate and abscisic acid. University of Hyderabad, Hyderabad.
13. V. A. Kolla. 2006. Signal transduction in guard cells: Role of Secondary messengers during bicarbonate of abscisic acid-mediated stomatal closure. University of Hyderabad, Hyderabad.
14. K. Riazunnisa. 2007. Factors mediating beneficial interaction of mitochondrial respiration and photosynthetic carbon assimilation in mesophyll protoplasts leaf discs of *Pisum sativum* and *Arabidopsis thaliana*. University of Hyderabad, Hyderabad.
15. G. Vijaya Kumar. 2009. Signaling components and their integration during stomatal closure by abscisic acid in *Pisum sativum* and *Arabidopsis thaliana*. University of Hyderabad, Hyderabad.

16. U.K. Avasthi. 2010. Regulation *in vitro* and *in situ* of Phosphoenolpyruvate Carboxylase by Light and Temperature in Leaves of a Typical C₄ and C₃ Plant. University of Hyderabad, Hyderabad.
17. B. Sunil Babu. 2011. Modulation by nitric oxide of photosynthesis and mitochondrial oxidative metabolism in mesophyll protoplasts of pea and interaction with glutathione metabolism in leaves of *Arabidopsis thaliana*. University of Hyderabad, Hyderabad.
18. Nupur Srivastava. 2013. Importance of reactive oxygen species and nitric oxide during chitosan-induced stomatal closure in *Pisum sativum* and *Arabidopsis thaliana*. University of Hyderabad, Hyderabad.
19. T. Sai Krishna. 2013. Photosynthetic characteristics of *Arabidopsis* mutants, deficient in ascorbate, alternative oxidase and NADP-malate dehydrogenase, in relation to the redox status. University of Hyderabad, Hyderabad.
20. P. Mallikarjuna Rao. 2013. Guard cell signal transduction: role of secondary messengers during stomatal closure mediated by abscisic acid, pyrabactin and microbial elicitors. University of Hyderabad, Hyderabad.
21. P. Raj Sheel. 2016. Responses of pea plants to elevated CO₂ (*in situ*) and Mesophyll Cell protoplasts to supra-optimal bicarbonate (*in vivo*). University of Hyderabad, Hyderabad.
22. G. Gayatri 2017. Signaling components in guard cells during stomatal closure and defense responses in *Arabidopsis* leaves by microbial elicitors, in comparison with the effects of abscisic acid. University of Hyderabad, Hyderabad.
23. A. Srinivas 2018. Role of reactive oxygen species and nitric oxide during stomatal closure by salicylic acid esters and polyamines in *Arabidopsis thaliana*. University of Hyderabad, Hyderabad.
24. V. Aswani 2019. Consequences of oxidative and photo-oxidative stress on antioxidant systems and proline metabolism leaves of pea (*Pisum sativum*) and *Arabidopsis thaliana*. University of Hyderabad, Hyderabad.

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PUBLICATIONS OF
PROFESSOR A.S. RAGHAVENDRA FNA, FASc, FNASc, FNAAS, FTWAS
(COMPLETE LIST)

PUBLICATIONS OF PROFESSOR A.S. RAGHAVENDRA: (COMPLETE LIST)

Books/Special Issues of Journals:	9 (Nine)
Research Publications:	228 (Two hundred twenty eight)
Articles in Refereed Science Journals:	181 (One hundred and eighty one)
Invited Chapters in Books & Proceedings:	47 (Forty seven)

(A) Books/Special Issues of Journals: 9 (Nine)

9. **A. S. Raghavendra** and Y. Murata. (2017). (Eds.) *Signal Transduction in Stomatal Guard Cells*. Lausanne: Frontiers Media. doi: 10.3389/978-2-88945-167-8
8. **A.S. Raghavendra** and R. F. Sage. 2011. (Eds.) *C₄ Photosynthesis and Related CO₂ Concentrating Mechanisms. Advances in Photosynthesis and Respiration Series. Volume 32*. Springer. xxvii + 410 pp.
7. K.V. Madhava Rao, **A.S. Raghavendra** and K. Janardhana Reddy. 2006. (Eds.) *Physiology and Molecular Biology of Stress Tolerance in Plants*. Springer, Heidelberg.
6. P. Mohanty and **A. S. Raghavendra**. 2003. Special Issue on Chloroplasts. *J Plant Physiol.* **160 (No. 1):** 1-96.
5. **A.S. Raghavendra**. 2000. (Ed.) *Photosynthesis: A Comprehensive Treatise*. Cambridge University Press, Cambridge. Paperback.
4. **A.S. Raghavendra**. 1998. (Ed.) *Photosynthesis : A Comprehensive Treatise*. Cambridge University Press, Cambridge. Hardbound. xviii + 376 pp.
3. **A.S. Raghavendra**. 1991. (Ed) *Physiology of Trees*. John Wiley & Sons Inc., New York. x + 509 pp.
2. M.R. Sethuraj and **A.S. Raghavendra**. 1987. (Eds) *Tree Crop Physiology*. Elsevier Science Publishers. Amsterdam. xii + 362 pp.
1. M.R. Sethuraj, G. Gururaja Rao and **A.S. Raghavendra**. 1986. (Eds) *Proceedings of International Workshop on Special Problems in Physiological Investigations of Tree Crops*. Rubber Research Institute of India, Kottayam. 123 pp.

(B) Publications in Refereed Science Journals: 181 (One hundred and eighty one)

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180. B. Sunil, P. Rajsheel, V. Aswani, R B Bapatla, S.K. Talla and **A.S. Raghavendra**. 2020. Photosynthesis is sensitive to nitric oxide and respiration sensitive to hydrogen peroxide: Studies with pea mesophyll protoplasts. *J. Plant Physiol.* **246-247**: 153133.
179. B. Sunil, R. Strasser and **A.S. Raghavendra**. 2020. Targets of nitric Oxide (NO) during modulation of photosystems in pea mesophyll protoplasts: Studies using chlorophyll a fluorescence. *Photosynthetica* **58**: 452-459.
178. B.Sunil, D. Saini, R.B. Bapatla, V. Aswani and **A. S. Raghavendra**. 2019. Photorespiration is complemented by cyclic electron flow and alternate pathway to optimize photosynthesis and protect against abiotic stress. *Photosynth Res.***139**: 67-79.
177. V. Aswani, P. Rajsheel, R.B. Bapatla, B. Sunil and **A.S. Raghavendra**. 2019. Oxidative stress induced in chloroplasts or mitochondria promotes proline accumulation in leaves of pea (*Pisum sativum*): another example of chloroplast mitochondria interactions. *Protoplasma* **256**: 449-457.
176. S. Agurla, G. Gayatri and **A.S. Raghavendra**. 2018. Polyamines increase nitric oxide and reactive oxygen species in guard cells of *Arabidopsis thaliana* during stomatal closure. *Protoplasma*: **255**: 153-162.
175. S. Agurla, S. Gahir, S. Munemasa, Y. Murata and **A. S. Raghavendra**. 2018. Mechanism of Stomatal Closure in Plants Exposed to Drought and Cold Stress. *Adv. Exp. Med. Biol.* **1081**: 215-232.
174. **A. S. Raghavendra** and Y. Murata. 2017. Editorial: Signal Transduction in Stomatal Guard Cells. *Frontiers Plant Sci.* **8**: 114.
173. B. Sunil and **A. S. Raghavendra** . 2017. Measurement of mitochondrial respiration in isolated protoplasts: Cytochrome and alternative pathways. *Methods Mol Biol.* **1670**: 253-265.
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171. S. Agurla, G. Gayatri and **A.S. Raghavendra**. 2016. Nitric oxide (NO) measurements in stomatal guard cells. *Methods Mol Biol.* **1424**: 49-56.
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168. A. Srinivas and **A. S. Raghavendra** . 2016. Convergence and divergence of signaling events in guard cells during stomatal closure by plant hormones or microbial elicitors. *Frontiers Plant Sci.* **7**: 1332.
167. M.R. Puli, P. Rajsheel, V. Aswani, S. Agurla, K. Kuchitsu and **A.S. Raghavendra**. 2016. Stomatal closure induced by phytosphingosine-1-phosphate and sphingosine-1-phosphate depends on nitric oxide and pH of guard cells in *Pisum sativum*. *Planta* **244**: 831-841.
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162. B. Sunil, S.K. Talla, V. Aswani and **A.S. Raghavendra**. 2013. Optimization of photosynthesis by multiple metabolic pathways involving interorganelle interactions: resource sharing and ROS maintenance as the bases. *Photosynth Res.* **117**: 61-71.
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Amaranthus hypochondriacus L.: Diurnal and seasonal effects manifested at molecular levels. *J. Exp. Bot.* **62**: 1017-1026.

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