



Dinakar Challabathula, Ph.D.

Assistant Professor, Department of Life Sciences, School of Basic and Applied Sciences, Central University of Tamil Nadu, Thiruvarur, India

Education:

Degree-Granting Education

University of Hyderabad, Hyderabad, AP, India, *M.Sc., Plant Sciences*, 2002 with 1st division
Osmania University, Hyderabad, AP, India, *B.Sc. Biology*, 2000 with 1st division.

Doctoral Training

University of Hyderabad, Hyderabad, AP, India, *Ph.D., in Dept. of Plant Sciences (2009)*.

Thesis Title: *Importance of Mitochondrial Oxidative Electron Transport in Optimizing Photosynthesis Under Light, Osmotic or Temperature Stress*

Postdoctoral Research

Research Associate (October 2008-December 2009)

Department of Plant Sciences, School of Life Sciences,
University of Hyderabad, Hyderabad, India

Advisor: Prof. A. S. Raghavendra

Research focus: Chloroplast and mitochondrial interactions during abiotic stress conditions

Postdoctoral Fellow (January 2010-August 2013)

Institute for Molecular Physiology and Biotechnology of Plants,
University of Bonn, Germany

Advisor: Prof. Dorothea Bartels

Research focus: Exploring the molecular mechanisms of desiccation tolerance in resurrection plants.

Work Experience

Assistant Professor (September 2013- current)

Department of Life Sciences, School of Basic and Applied Sciences,
Central University of Tamil Nadu, Thiruvarur, 610 101, India

Professional Recognition, Awards, Fellowships received

- Life member, Indian society for Plant Physiology
- **University of Bonn Postdoctoral Fellow** (January 2010- August 2013)
- **Research Associateship ICAR-NAIP project** (Oct 2008 –Dec 2009)

- UPE UOH travel grant to Germany 2006
- Senior Research Fellowship from Council for Scientific and Industrial Research (CSIR) India, Indian National Fellowship (2005-2007)
- Council for Scientific and Industrial Research (CSIR) Junior Research Fellowship (2003-2004, Indian National Level Fellowship)
- Merit Scholarship (2001-2002, University Level Scholarship during Masters Degree)
- Qualified GATE (Graduate Aptitude Test in Engineering, 2002) in Botany, Biotechnology and Chemistry (National Level Exam)

Research: Plant Molecular Physiology

- Exploring the mechanisms involved in desiccation tolerance in resurrection plants
- Comparative gene expression analysis between glycophytes and halophytes
- Mitochondrial oxidative electron transport during abiotic stress conditions in plants

Peer Reviewed Publications

2009

1. Strodtkötter I, Padmasree K, **Dinakar C**, Speth B, Wojtera J, Voss I, Do PT, Nunes-Nesi A, Fernie AR, Linke V, Raghavendra AS, Scheibe R (2009) Induction of the AOX1D isoform of alternative oxidase in *A. thaliana* T-DNA insertion lines lacking isoform AOX 1a is sufficient to optimize photosynthesis when treated with antimycin A. *Molecular Plant* 2: 284-297. **First two authors have equal authorship.**

2010

2. **Dinakar C**, Abhaypratap V, Yearla SR, Raghavendra AS, Padmasree K (2010) Importance of ROS and antioxidant system during the beneficial interactions of mitochondrial metabolism with photosynthetic carbon assimilation. *Planta* 231: 461-474.
3. **Dinakar C**, Raghavendra AS, Padmasree K (2010) Importance of AOX pathway in optimizing photosynthesis under high light stress: Role of pyruvate and malate in activating AOX. *Physiologia Plantarum* 139: 13-26.

2011

4. Padmasree, K and **Dinakar C** (2011) Metabolic interactions between chloroplasts and mitochondria to optimize photosynthesis under high light. *Plant Science in Post Genomic Era (A Special Bulletin of ICPSPGE)* at, Orissa, India, February 2011, 113-118. (**Book Chapter**)

2012

5. **Dinakar C**, Djilianov D, Bartels D (2012) Photosynthesis in desiccation tolerant plants: Energy metabolism and antioxidative stress defense. *Plant Science* 182: 29-41.
6. **Dinakar C**, Bartels D (2012) Light response, oxidative stress management and nucleic acid stability in closely related Linderniaceae species differing in desiccation tolerance. *Planta* 236: 541-555.
7. Gechev TS, **Dinakar C**, Benina M, Toneva V, Bartels D (2012) Molecular mechanisms of desiccation tolerance in resurrection plants. *Cellular and Molecular Life Sciences* 69: 3175-3186.

2013

8. Bartels D, **Dinakar C** (2013) Balancing salinity stress responses in halophytes and non-halophytes: a comparison between *Thellungiella* and *Arabidopsis thaliana*. *Functional Plant Biology* 40: 819-831.
9. **Dinakar C**, Bartels D (2013) Desiccation tolerance in resurrection plants: new insights from transcriptome, proteome, and metabolome analysis. *Frontiers in Plant Sciences* 4: 1-14.

2014

10. Padmasree, K, **Dinakar C** (2014) Mitochondrial oxidative metabolism optimizes photosynthetic carbon assimilation through redox and ROS linked metabolite shuttles. In *Photosynthesis: Overviews on Recent Progress & Future Perspective*, Eds. Itoh, S., Mohanty, P. and Guruprasad, K.N. (I.K. International Publishers, New Delhi), 157-165. (Book Chapter)

2015

11. Giarola V, **Challabathula D**, Bartels D (2015) Quantification of expression of dehydrin isoforms in the desiccation tolerant plant *Craterostigma plantagineum* using specifically designed reference genes. *Plant Science* 236: 103-115. **Equal first authors**
12. **Challabathula D**, Jos T. Puthur, Bartels D (2015) Surviving metabolic arrest: Photosynthesis during desiccation and rehydration in resurrection plants. *Annals of the New York Academy of Sciences* ((doi: 10.1111/nyas.12884).).
13. VanBuren R, Bryant D, Edger P P, Tang H, Burgess D, **Challabathula D**, Spittle K, Hall R, Gu J, Lyons E, Freeling M, Bartels D, Hallers BT, Hastie A, Michael TP, Mockler TC (2015) Single molecule sequencing of the desiccation tolerant grass *Oropetium thomaeum*. *Nature* 527; 508-511.

2016

14. Ataei S, Braun V, **Challabathula D**, Bartels D (2016) Differences in LEA-like 11-24 gene expression in desiccation tolerant and sensitive species of Linderniaceae are due to variations in gene promoter sequences. *Functional Plant Biology* (**In press**).
15. **Dinakar C**, Abhaypratap Vishwakarma, Agepati Raghavendra, Kollipara Padmasree (2016) Alternative oxidase pathway optimize photosynthesis during osmotic and temperature stress by regulating cellular ROS through redox couples of malate valve and antioxidative system. *Frontiers in Plant Science* (**In press**).

Ongoing research projects: One SERB sponsored project (June 2014-May 2017).

Ph.D students: Three (Current)