Prof. Dr. AMARENDRA NARAYAN MISRA

Designation: Professor, Life Sciences & Vice Chancellor (Acting)

Formerly: Professor of Plant Mol. Biol. & Biotechnol.,UniPune
Professor of Botany, Utkal University and
Professor of Biosci. & Biotechnol., F.M. University

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Post-Doc- JNU; Imperial College, London; IGER, UCW, UK
Visiting Professor/Researcher: BARC (INSA), Dept. of Electronics & Physics-UniPune (DST-SERC), Uni Geneva – Switzerland, Oska Univ – JSPS, Tokyo Univ – Japan, Univ Nevada –USA (DBT), Inst. Biophysics –BAS – Sofia – Bulgaria(DST-BAS), Lab. for Biomolecular Electronics - Inst. Biotechnol. & Genetics – NAS Ukrain – Kiev (DST-NAS), Inst. Microbiol. – CAS – Trebon –Czech (DST-CAS).

Research: 37 years
University Post-Graduate Teaching Experience: 32 years

Area of Specialization

- Biochemistry, biophysics and molecular biology of photosynthesis.
- Biotechnology and molecular biology of adaptation of tropical plants.
- Biosensors, and Bioinformatics

Publications: 156
Research Supervision: Ph.D. 8 (awarded); M.Phil. 9 (awarded);
M.Sc. Botany 1999 to 2004 – 7; M.Sc. Biosciences 2004 to 2011. – 4; M.Sc. Biotechnology 2004 to 2011– 13, M.Tech. Biotechnology 2011– 2013
Fellow: Indian Botanical Society – FBS; Indian Society for Agricultural Biochemists – FISAB; Academy of Environmental Biology – FAEB; International Society for Tropical Crops Research and Development -FISTCRAD,
Member: The National Academy of Sciences (India) – MNASc.
Completed Research Projects: More than 18 [National and International]

Details of past employment:

Period	Designation	Name of Institution / Organisation
Nov. 1982-Aug.1987	Assistant Professor, Pant Physiology	Rajasthan Agricultural University
Aug.1987-June2004	Senior Lecturer/ Reader/Professor Botany [Biochem. & Mol. Biol.]	Post-Graduate Department of Botany, Utkal University
Dec. 1997-Nov. 1999	Professor, Plant Mol. Biol. & Biotechnology	Post-Graduate Department of Botany, UniPune
Oct 2002 – Oct 2003	Guest Researcher/ Professor, Signal Transduction Lab.	Graduate School of Frontier Sciences, Deptt. of Integrated Biosciences, University of Tokyo
June 2004-May 2011	Professor, Biosciences & Biotechnology	Post-Graduate Department of Biosciences & Biotechnology, FM University
May 2011-continued	Professor, Life Sciences	Centre for Life Sciences, School of Natural Sciences, Central University of Jharkhand

VISITING SCIENTISTS/ COLLABORATORS VISITED AND WORKED IN MY LABORATORY:

Prof. Reto Strasser, Switzerland. [Utkal University/ FMU/ CUJ]
Prof. K. Stralka, Poland. [FMU/ CUJ]
Prof. Emilia Apostolova, Bulgaria. [FMU]
Prof. Mira Busheva, Bulgaria. [FMU]
Dr. Gulnara Ismagulova, Kazakhstan [Utkal University]
Prof. Ondrej Prasil, Czech [CUJ]

OVERSEARS RESEARCHERS & PDF

Prof. Amal Ahmed, NRC, Cairo, Egypt 2013-14 – CV Raman Fellowship for African Res. [PDF].
Mr. Patrice Adama Soubeiga, BurkinaFaso. 2014–CV Raman Fellowship for African Researchers.
Mr. Otuechere Chiagoziem Anariochi, Redeemer's Univ., Nigeria. Part of Ph.D. work 2013.
Dr. Hamdino Ahmed, HRI, Egypt 2012-13 – CVRaman Fellowship for African Researchers [PDF].

PUBLICATIONS (Selected list) (156 total)

Books published:

Biophysics. 2012 [Edited by Prof. A. N. Misra]. ISBN: 9535103769. InTech Open Publ.

Plant Tissue Culture: Totipotency to Transgenic. [Editors HP Sharma, JVV Dogra and. A N Misra]. ISBN: 8177544675. AgroBios Publ., Jodhpur.

Peer Reviewed papers in SCI journals:

Kalaji HM, Schansker G, Ladle RJ, Goltsev V, Bosa K, Allakhverdiev SI, Brestic M, Bussotti F, Calatayud A, Dąbrowski P, Elsheery NI, Ferroni L, Guidi L, Hogewoning SW, Jajoo A, Misra AN, Nebauer SG, Pancaldi S, Penella C, Poli D, Pollastrini M, Romanowska-Duda ZB, Rutkowska B, Serôdio J, Suresh K, Szulc W, Tambussi E, Yanniccari M and Zivcak M (2014) Frequently asked questions about in vivo chlorophyll fluorescence: practical issues. Photosynthesis Research DOI 10.1007/s11120-014-0024-6.

Apostolova EL, Rashkov G, Pouneva I, Dankov K, Grigorova I, Misra AN (2014) Effect of UV-B radiation on photosystem II functions in Antarctic and mesophilic strains of a green alga Chlorella vulgaris and a cyanobacterium *Synechocystis salina*. Indian J. Plant Physiol. 19:111-118. DOI 10.1007/s40502-014-0084-9

Misra AN, Vladkova R, Singh R, Misra M, Dobrikova AG and Apostolova E L (2014) Action and target sites of nitric oxide in chloroplasts. Nitric Oxide 39: 35–45. http://dx.doi.org/10.1016/j.niox.2014.04.003

Barh D, Barve N, Gupta K, Chandra S, Jain N, Tiwari S, Leon-Sicairos N, Canizalez-Roman A, dos Santos AR, Hassan SS, Carneiro AR, de Castro Soares S, de Paula Castro TL, Miyoshi A, Silva A, Kumar A, Misra AN, Blum K, Braverman ER and Azevedo V (2013) Exoproteome and secretome derived broad spectrum novel drug and vaccine candidates in Vibrio cholerae targeted by piper betel derived compounds. PLoS ONE 8(1): e52773.

Rashkov G D, Dobrikova AG, Pouneva ID, Misra AN and Apostolova E (2012) Sensitivity of Chlorella vulgaris to herbicides. Possibility of using it as a biological receptor in biosensors. Sensors and Actctuators B 161: 151-155.

Apostolova E, Dobrikova AG, Rashkov GD, Dankov KG, Vladkova RS and Misra AN (2011) Prolonged sensitivity of immobilized thylakoid membranes in cross-linked matrix to atrazine. Sensors and Actuators B 156: 140–146

Vladkova R, Dobrikova AG, Singh R, Misra AN and Apostolova E (2011) Photoelectron transport ability of chloroplast thylakoid membranes treated with NO donor SNP: Changes in flash oxygen evolution and chlorophyll fluorescence. Nitric Oxide: Biology and Chemistry 24: 84-90.

Misra AN, Misra M and Singh R (2011) Nitric oxide ameliorates stress responses in plants. Plant Soil Env. 57 (3): 95-100.

Tunc-Ozdemir M, Miller G, Song L, Kim J, Sodek A, Koussevitzky S, Misra AN, Mittler R and Shintani D (2009) Thiamin confers enhanced tolerance to oxidative stress in *Arabidopsis.* Plant Physiol. 151(1): 421–432. doi: 10.1104/pp.109.140046.

Misra AN, D Latowski and K Strzalka (2006) The xanthophylls cycle activity in kidney bean and cabbage leaves under salinity stress. Russian J. Plant Physiol. 53, 102-109.

Biswal AK, Dilnawaz F, Ramaswamy NK, David KAV and Misra AN (2002) Thermoluminescence characteristics of sodium chloride salt stressed Indian mustard seedlings. Luminescence, 17, 135-140.

Misra AN, Biswal AK and Misra M (2002) Physiological, biochemical and molecular aspects of water stress responses in plants, and the biotechnological applications. Proc. Nat. Acad. Sci. (India) 72.B (II), 115-134.

Misra AN, Srivastava A and Strasser RJ (2001) Utilisation of fast Chlorophyll *a* fluorescence technique in assessing the salt/ion sensitivity of mung bean and brassica seedlings. J. Plant Physiol., 158, 1173-1181.

Biswal AK, Dilnawaz F, David KAV, Ramaswamy N K and Misra AN (2001) Increase in the intensity of thermoluminescence Q-band during leaf ageing is due to a block in the electron transfer from Q_A to Q_B. Luminescence, 16, 309-313.

Misra AN, Sahu SM, Misra M, Singh P, Meera I, Das N, Kar M and Sahu P (1997) Root growth of a salt susceptible and a salt resistant rice (*Oryza sativa* L.) during seedling establishment under NaCl salinity. J. Agron. Crop Sci., 178, 9-14.

Misra AN, Ramaswamy NK and Desai TS (1997) Thermoluminescence studies on photoinhibition of pothos leaf discs at chilling, room and high temperature. J. Photochem. Photobiol. B: (Biol.), 38, 164-168.

Misra AN, Sahu SM, Misra M, Singh P, Meera I and Das N (1997) Sodium chloride induced changes in leaf growth, and pigment and protein contents in two rice cultivars. Biol. Plant., 39, 257-262.

Misra AN, Hall S and Barber J (1991) The isolated DI/D2/Cyt b559 complex of photosystem two reaction centre possesses a serine type endopeptidase activity. Biochim. Biophys. Acta, 1059, 239-242.

Misra AN and Misra M (1987) Effect of age and rehydration on greening of wheat leaves. Plant Cell Physiol., 28, 47-51.

Misra AN and Misra M:(1986) Effect of temperature on senescing rice leaves. I. Photoelectron transport activity of chloroplasts. Plant Science, 46, 1-4.

Misra AN and Biswal UC (1982) Differential changes in electron transport properties of chlorplasts during aging of attached and detached leaves and of isolated chloroplasts. Plant Cell Env., 5, 27-30.

Misra AN and Biswal UC (1980) Effect of phytohormones on the chlorophyll degradation during aging of chloroplasts *in vivo* and *in vitro.* Protoplasma, 105, 1-8.

Invited reviews:

Misra AN, Dilnawaz F, Misra M and Biswal AK (2001) Thermoluminescence in chloroplasts as an indicator of alterations in photosystem II reaction center by biotic and abiotic stress. Photosynthetica, 39, 1-9.

Misra AN and Biswal AK (2000) Thylakoid membrane protein kinase activity as a signal transduction pathway in chloroplasts. Photosynthetica, 38, 323-332.

Book Chapters:

Apostolova EL and Misra AN (2014) Alterations in structural organization affect the functional ability of photosynthetic apparatus. Mohammed Pessarakli (ed.) Handbook of Plant and Crop Physiology. Expanded 3rd Edition. Ch. 3. CRC Press, Taylor & Francis Group. Pp. 103-120.

Joshi P, Misra AN, Nayak L and Biswal B (2013) Response of mature, developing and senescing chloroplast to environmental stress. *In:* Plastid Development in Leaves during Growth and Senescence. B. Biswal, Krupinska and Biswal UC (eds.), Advances in Photosynthesis and Respiration (Govindjee and Sharkey TD, Series Eds.). Vol. 36, pp. 641-668.. DOI:10.1007/978-94-007-5724-0-28.Springer: Dordrecht. SBN: 978-94-007-5723-3 (Print) 978-94-007-5724-0 (Online).

Misra AN, Misra M and. Singh R (2012) Chlorophyll fluorescence in plant biology. Biophysics. (Ed. Misra A N) ISBN 979-953-307-290-5 . Chapter 7, pp. 171-192.

Misra AN, Misra M and. Singh R (2012) Thermoluminescence in chloroplast thylakoid. Biophysics. (Ed. by Misra A N). ISBN 979-953-307-290-5.Chapter 6, pp. 155-170.

Misra M, Misra AN and. Singh R (2012) Nitric oxide signaling during senescence and programmed cell death in leaves. Chemical Biology (Ed. by Ekinci D). ISBN 979-953-307-784-9.

Misra M and Misra AN (2012) Sterilization techniques in plant tissue culture. *In* Plant Tissue Culture. JVVDogra and HPSharma (eds.).

Symposium Articles/ Proceeding Volumes

Biswal AK, Ramaswamy NK, Ussuf KK, Mathur M and Misra AN (2001) Thylakoid membrane protein kinase activity in NaCl salt stressed mung bean and Indian mustard seedling. *In* Image Analysis in Materials and Life Sciences (Babu Rao C, ed.) Proc. SCIAMAL-99.

Misra AN, Latowski D and Strzalka K (2003) De-epoxidation state of lutein and violaxanthin in the seedlings of salt sensitive and salt tolerant plant grown under NaCl salt stress. Plant Biology 2003, Honolulu, Hawaii, USA 25-30 July 2003.

Misra AN and Terashima I (2003) Changes in photosystem activities during adapatation of *Vicia faba* seedlings to low, moderate and high temperatures. Plant Cell Physiol., Abstract, Annual Symp.JSPP, Nara, Japan 27-29 March 2003.

Misra AN, Srivastava A and Strasser RJ (2007) Elastic and plastic responses of *Vicia faba* leaves to high temperature and high light stress. Gordon Conference on "Temperature stress in plants", Ventura, USA 25-30 Jan. 2007.