

PERSONAL INFORMATION

Date of Birth: 15th August, 1980

Gender: Female

Marital Status: Married

Nationality: Indian

Mother tongue(s): Hindi

Other languages: English [*Basic to Higher Education in English medium and approx. 8.5 year Post PhD experience in Canada / India/ Spain, Good in Speaking, Writing and Understanding*]

ORCID ID: 0000-0003-0668-2340


ACADEMIC PROFILE

DEGREE	INSTITUTE / UNIVERSITY	DEPARTMENT	MONTH / YEAR	DIVISION	POSITION
Ph.D. (Plant Biotechnology)	IIT Guwahati Assam, India	Biotechnology	September 2010	1 st (CGPA 8.5)	--
M.Phil. (Specialization- Biochemistry)	Sambalpur University Orissa, India	School of Life Science	October 2005	1 st	2 nd
M.Sc. (Specialization- Biochemistry)	Sambalpur University Orissa, India	School of Life Science	April 2003	1 st	4 th
B.Sc. (Botany Honours)	Sambalpur University Orissa, India	Botany	June 2001	1 st with Distinction	2 nd

RESEARCH INTERESTS

Secondary metabolites, Bioenergy
Functional genomics and proteomics

Protein Biochemistry
Computational Biology

ACADEMIC HONOURS

- ✓ **Dr D. S. Kothari Post-Doctoral Fellowship** awarded for the year 2020-2022 at BHU, Varanasi, India.
- ✓ **Second prize** in the **National Symposium on "CTPSR"** held on 1-3 Feb, 2019 at Department of Botany, BHU, Varanasi
- ✓ **NASI RESEARCH ASSOCIATE UNDER YOUNG WOMEN SCIENTIST SCHEME** for the year 2017-2019 at BHU, Varanasi, India
- ✓ **ERASMUS MUNDAS SVAAGATA Post-Doctoral Fellowship (10 months)** for the year 2014-2015 at *Universitat Politecnica de Valencia, Spain*
- ✓ **Young Scientist Award** by **Indian Science Congress Association (ISCA)** for the year 2011-2012 in area of 'Agriculture and Forestry Science' for doctoral work on biochemical and ultra-structural studies of *Pongamia* seed
- ✓ **One of three nominees for Young Botanist Award -2010** by **Indian Botanical Society** held at Kolhapur, Maharastra, India 10th-12th November, 2010
- ✓ **"Best Poster Award"** in **TWAS Young Scientist Conference 2009**, Kuala Lumpur, Malaysia 2-5th November, 2009
- ✓ Awarded **DST Overseas Travel support grant** to attend and **present paper at TWAS Conference** in Kula Lumpur, Malaysia, 2009
- ✓ **Short listed** for **Research Internship in Science and Engineering (RISE) 2009** conducted by **Indo-US Science and Technology Forum** and **ORAU** (1st level screening, 2nd result not announced due to funding problem in US)
- ✓ Awarded **"Senior Research Fellowship in Life Science"** by **Council of Scientific & Industrial Research (CSIR)**, Govt. of India (**Apr 2009 - Sept 2010**)
- ✓ Awarded **"Junior Research Fellowship in Biotechnology and Applied Biology"** by the **Department of Biotechnology, Ministry of Science & Technology**, Govt. of India (**Jan 2006 – Mar 2009**)
- ✓ Qualified **Graduate Aptitude Test in Engineering (LIFE SCIENCE)** in 2005 conducted by Indian Institute of Technology with **87.5 percentile**

RESEARCH EXPERIENCE

DS KOTHARI POST DOCTORAL FELLOW (6th Jan 2020 to 5th Jan 2022)

Research topic: Cloning, expression, structural and functional characterization of putative tetratricopeptide repeat (TPR) containing protein family from diazotrophic cyanobacterium *Anabaena* sp. PCC 7120

Advisor: Prof. L. C. Rai, Department of Botany, Banaras Hindu University, Varanasi- 221 005, India

NASI RESEARCH ASSOCIATE UNDER YOUNG WOMEN SCIENTIST SCHEME (Jan 2017 to June 2019)

Research Topic: Isolation and characterization of microcystin producing cyanobacterial species from the river Ganga for its conservation

Advisor: Prof. L. C. Rai, Distinguished Professor, DST J C Bose National Fellow & DAE Raja Ramanna Fellow, Ex. Head & Coordinator CAS in Botany, Institute of Science, Banaras Hindu University, Varanasi- 221 005, India

ERASMUS MUNDAS SVAAGATA Post Doctoral Fellow (Nov 2014 to Aug 2015)

Research Topic: Ascertain the Role of the GCN system in *Arabidopsis thaliana* under abiotic stress

Advisor: Prof. Jose Gadea's Lab, Instituto de Biologia Molecular Y Celular de Plantas (IBMCP), Universitat Politecnica de Valencia, Spain

Post Doctoral Fellow (March to Sept 2014)

- **Research Topic:** *In vitro* chromosome immunoprecipitation (CHIP) for genome wide identification of target genes of HB1 transcription factor in *Oryza sativa* IR64
- **Advisor:** Dr. Mukesh Jain, NIPGR, New Delhi, India.

Post Doctoral Fellow (July 2011 to Jan 2013)

- **Research Topic**
 1. Molecular investigation on Sea buckthorn occurring in Ontario
 2. Functional characterization of tetratricopeptide repeat proteins in *Arabidopsis* as Putative Co-Chaperones of Hsp90/Hsp70
- **Advisor:** Dr. Priti Krishna, Department of Biology, University of Western Ontario, London, Canada.

Senior Research Fellow (Oct 2010 to Jan 2011)

- **Project Title:** Biodiversity studies in Zingiberaceae of North East India
- **Advisor:** Dr. Latha Rangan, Department of Biotechnology, IIT Guwahati, India.

Ph. D. (Jan 2006 to Sept 2010)

- **Title:** Characterization of candidate plus trees (CPTs) of *Pongamia pinnata* (L.), a versatile legume from North Guwahati, Assam
- **Thesis Advisor:** Dr. Latha Rangan, Department of Biotechnology, IIT Guwahati, India

M. Phil. (July 2003 to Dec 2004)

- **Title:** Effect of salt stress on the growth and photochemical properties of nitrogen fixing cyanobacterium *Anabaena*
- **Advisor:** Dr. N. K. Choudhary, Dept. of Life Science, Sambalpur University, India.

RESEARCH SKILLS

Plant Propagation and Algal research: Micropropagation of plants by tissue culture (*Pongamia pinnata* and *Arabidopsis thaliana*), Cultivating *Arabidopsis thaliana* and *Nicotiana tobaccum* in soil, Cross fertilization in *Arabidopsis*, Cyanobacterial isolation, cultivation and maintenance.

Proteomics: Native PAGE, SDS PAGE, biochemical assays, recombinant protein over expression, *In vitro* pull down assay, recombinant protein purification by affinity chromatography, Western blotting

Biochemical characterization: Oil extraction from plant source by Soxhlet technique, Clevenger apparatus, Chromatography Techniques like TLC, Column chromatography

Microscopic techniques: Light microscopy, SEM, Bacterial and plant sample preparation for SEM and TEM, Confocal Microscopy, TeCAN Plate reader, Bimolecular fluorescence complementation to validate protein-protein interaction

Molecular techniques: DNA / RNA Isolation from plant and microbial systems (bacteria and cyanobacteria) using conventional method as well as from kits, PCR, agarose gel electrophoresis, DNA fingerprinting (RAPD, SSR and AFLP) and Southern hybridization, primer designing, semi quantitative RT-PCR, qRT-PCR, Gateway cloning, conventional cloning, colony PCR, Single and double mutant genotyping in *Arabidopsis*, *Agrobacterium* mediated floral dip method of *Arabidopsis* transformation, Yeast two hybrid (Y2H), Bacterial adenylate cyclase two hybrid (BACTH), Yeast colony PCR, plasmid isolation, *In vitro* CHIP

Spectrophotometry: UV-visible, IR

Microbiology: Basic microbial techniques, antimicrobial assay of plant extract, isolation and characterization of root nodule bacteria, algal culturing

PUBLICATIONS (Journal=29; Book Chapter=4; Conference=18; h-index=17; i10-index=22; Total IF $\approx$ 100; Citations 872)

REFEREED JOURNAL PUBLICATIONS	IF
Yadav I, Rautela A, Gangwar A, Kesari V , Padhi AK, Kumar S. (2023) Geranyl Diphosphate Synthase (CrtE) Inhibition Using Alendronate Enhances Isoprene Production in Recombinant <i>Synechococcus elongatus</i> UTEX 2973: A Step towards Isoprene Biorefinery. Fermentation 9:217. https://doi.org/10.3390/fermentation9030217	5.123
Srivastava, R., Kanda, T., Yadav, S., Singh, N., Yadav, S., Prajapati, R., Kesari, V. , & Atri, N. (2023). Salinity pretreatment synergies heat shock toxicity in cyanobacterium <i>Anabaena</i> PCC7120. Frontiers in Microbiology 14. https://doi.org/10.3389/fmicb.2023.1061927	6.064
Sriwastaw S, Rai R, Raj A, Kesari V , LC Rai. (2023) All3048, a DnaJ III homolog of <i>Anabaena</i> sp. PCC7120 mediates heat shock response in <i>E. coli</i> and its N-terminus J-domain stimulates DnaK ATPase activity. International Journal of Biological Macromolecules 233:123563. https://doi.org/10.1016/j.ijbiomac.2023.123563	8.025
Kesari V* , Kumar S, Yadav I, Chatterjee A, Rai S, Pandey S. (2022) Ganga river water quality assessment using combined approaches: physico-chemical parameters and cyanobacterial toxicity detection with special reference to microcystins and molecular characterization of microcystin synthetase (mcy) genes carrying cyanobacteria. Environmental science and pollution research 29:13141. https://doi.org/10.1007/s11356-021-16873-0	5.190
Faus I, Niñoles R, Kesari V , Gadea J. (2021) The ABCF3 Gene of <i>Arabidopsis</i> Is Functionally Linked with GCN1 but Not with GCN2 During Stress and Development. Plant Molecular Biology Reporter 39:663–672. https://doi.org/10.1007/s11105-021-01283-w	1.816
Kumar P, Rautela A, Kesari V , Szlag D, Westrick J and Kumar S. (2020) Recent developments in the methods of quantitative analysis of microcystins. Journal of Biochemical and Molecular Toxicology 34(12):e22582. doi: 10.1002/jbt.22582.	3.568
Faus I, Niñoles R., Kesari V. , Llabata P., Tam E., Nebauer S.G., Santiago J., Hauser M.T., Gadea J. (2018). <i>Arabidopsis</i> ILITHYIA protein is necessary for proper chloroplast biogenesis and root development independent of eIF2 α phosphorylation. Journal of Plant Physiology 224–225: 173–182 https://doi.org/10.1016/j.jplph.2018.04.003	3.686
Basak, S., Kesari, V. , Ramesh, A.M., Rangan L, Parida A, Mitra S. (2017) Assessment of genetic variation among nineteen turmeric cultivars of Northeast India: nuclear DNA content and molecular marker approach. Acta Physiologiae Plantarum 39:45 https://doi.org/10.1007/s11738-016-2341-1	2.736

Fatima T*, Kesari V* , Watt I, Wishart D, Todd JF, Schroeder WR, Paliyath G, Krishna P (2015) Metabolite profiling and expression analysis of flavonoid, vitamin C and tocopherol biosynthesis genes in the antioxidant-rich sea buckthorn (<i>Hippophae rhamnoides</i> L.). Phytochemistry 118:181-191 doi: 10.1016/j.phytochem.2015.08.008. (* Equal First Authorship)	4.004
Basaka S, Ramesh AM, Kesari V , Parida A, Mitra S, Rangan L (2014) Genetic diversity and relationship of <i>Hedychium</i> from Northeast India as dissected using PCA analysis and hierarchical clustering. Meta Gene 2: 459–468 https://doi.org/10.1016/j.mgene.2014.05.002 .	0.78
Ramesh AM, Kesari V , Rangan L (2014). Characterization of a stearyl-acyl carrier protein desaturase gene from potential biofuel plant, <i>Pongamia pinnata</i> . L. Gene 542:113-121 https://doi.org/10.1016/j.gene.2014.03.047	3.913
Kesari V , Ramesh AM, Rangan L (2013) <i>Rhizobium pongamiae</i> sp. nov. from Root Nodules of <i>Pongamia pinnata</i> BioMed Research International 2013:165198 https://doi.org/10.1155/2013/165198 .	3.246
Das A, Kesari V , Vinod M S, Parida A, Mitra S, Rangan L (2013) Genetic diversity in ecotypes of the scarce wild medicinal crop Zingiber moran revealed by ISSR and AFLP marker analysis and chromosome number assessment. Plant Biosystems 149(1):1-10 DOI: 10.1080/11263504.2013.795197	2.838
Das A, Kesari V , Rangan L (2012) Micropropagation and cytogenetic assessment of <i>Zingiber</i> species of North East India. 3Biotech 3:471–479 DOI: 0.1007/s13205-012-0108-y	2.4
Das A, Kesari V , Arpita Nath, Alike Khare, Rangan L (2012) Antimicrobial and micro Raman spectroscopy of selected Zingiberaceae species from Northeast India. Journal of Crop Science and Biotechnology 16:75-81 https://doi.org/10.1007/s12892-011-0019-1	1.67
Kesari V , Ramesh AM, Rangan L (2012) High frequency direct organogenesis and evaluation of genetic stability for <i>in vitro</i> regenerated <i>Pongamia pinnata</i> , a valuable biodiesel plant. Biomass and Bioenergy 44:23-32 https://doi.org/10.1016/j.biombioe.2012.03.029	5.774
Kesari V , Rangan L (2012) Electrophoretic patterns of proteins isolated from immatured & matured stages of 10 candidate plus trees of versatile <i>P. pinnata</i> . Agroforestry Systems 84:157–161 https://doi.org/10.1007/s10457-011-9450-z	2.419
Kesari V , Rangan L (2011) Genetic diversity analysis by RAPD markers in candidate plus trees of <i>Pongamia pinnata</i> . Biomass and Bioenergy 35: 3123-3128 https://doi.org/10.1016/j.biombioe.2011.04.015	5.774
Kesari V , Rangan L (2011) Coordinated changes in storage proteins during development and germination of elite seeds of <i>Pongamia pinnata</i> . Annals of Botany Plants 2011:plr026. doi: 10.1093/aobpla/plr026 (Most top 30 accessed article in 2011)	3.138
Das [#] A, Kesari[#] V , Vinod M S, Parida A, Rangan L (2011) Genetic relationship of <i>Curcuma</i> species from Northeast India using PCR based markers. Molecular Biotechnology 49:65-76 https://doi.org/10.1007/s12033-011-9379-5 ([#] Equal First Authorship)	2.860
Kesari V , Vinod M S, Parida A, Rangan L (2010) Molecular marker based characterization in candidate plus trees of <i>P. pinnata</i> , a potential legume from North Guwahati, Assam. Annals of Botany Plants 2010:plq017. doi: 10.1093/aobpla/plq017. (Most top 10 accessed article in 2011)	3.138
Kesari V , Rangan L (2010) Development of <i>Pongamia pinnata</i> as an alternative biofuel crop- current status of plantations in India and scope. Journal of Crop Science and Biotechnology 13:127-137 https://doi.org/10.1007/s12892-010-0064-1 (Most downloaded article in 2011)	1.67
Kesari V , Das A, Rangan L (2010) Effect of genotype and auxin treatments on rooting response in stem cuttings of CPTs of <i>P. pinnata</i> , a potential legume crop. Current Science 98:1234-7 http://www.jstor.org/stable/24110155 .	1.1
Das A, Tusar, Kesari V , Rangan L (2010) Aromatic Joha rice of Assam- A Review. Agricultural Reviews 31:1-10	--

Das A, Kesari V , Rangan L (2010) Plant regeneration in <i>Curcuma</i> species and assessment of genetic stability of regenerated plants. Biologia Plantarum 54 (3): 423-429 doi: 10.1007/s10535-010-0077-0	1.122
Kesari V , Das A, Rangan L (2010) Physico-chemical characterization and microbial assay from seed oil of <i>Pongamia pinnata</i> . Biomass and Bioenergy 34: 108-115 https://doi.org/10.1016/j.biombioe.2009.10.006	5.774
Kesari V , Sudarshan M, Das A, Rangan L (2009) PCR amplification of the genomic DNA from the seeds of Ceylon Ironwood, <i>Jatropha</i> and <i>Pongamia</i> . Biomass and Bioenergy 33: 1724-1728. https://doi.org/10.1016/j.biombioe.2009.08.005	5.774
Kesari V , Krishnamachari A, Rangan L (2009) Effect of auxins on adventitious rooting from stem cuttings of candidate plus tree <i>Pongamia pinnata</i> (L.). Trees Structure and Function 23: 597-604. https://doi.org/10.1007/s00468-008-0304-x	2.888
Kesari V , Krishnamachari A, Rangan L (2008) Systematic characterization and seed oil analysis in candidate plus trees, <i>Pongamia pinnata</i> (L.). Annals of Applied Biology 152: 397-404. https://doi.org/10.1111/j.1744-7348.2008.00231.x	2.766

BOOK CHAPTERS

- Chatterjee A, Shankar A, Singh S, **Kesari V**, Rai R, Patel A, Rai L C (2018). Beneficial microorganisms and abiotic stress tolerance. In: *Approaches for Enhancing Abiotic Stress Tolerance in Plants* (Hasanuzzaman M. et al. (eds). (Francis and Taylor Publisher) pp. 471-499
- Kesari V**, Ramesh AM, Rangan L (2013). "Pongamia pinnata: The biodiesel plant biology, tissue culture and genetic enhancement" *Biotechnological Applications for Environmental Protection*, In: Abhilash P.C. Springer 2013 (Accepted).
- Kesari V**, Rangan L. (2007) *In vitro* propagation in *Pongamia pinnata* (L.) Pierre. In: *Biofuel plant cultivation, practices and seed bank* (S. K. Mehla ed.), ISBN 81-7132-514-6 (Pointer publishers), pp. 112-117
- Rangan L, Das A, Agarwal S, **Kesari V**, Sharma GC (2009) DNAB-A molecular systematic approach for species identification and bioresource protection. In *Diversity of Plant- A Molecular Approach* (J. S. Britto ed.) ISBN 81-9085-030-8 The Ranipat Herbarium, Tiruchirapalli, pp. 19-35

PROCEEDINGS PAPERS

- Kesari V**, Das A, Rangan L. (2008). Extraction and physico-chemical properties of seed oil from candidate plus tree of *Pongamia pinnata* In: *Proceedings of International Conference on Emerging Technologies and Applications in Engineering, Technology and Sciences*, ICETAETS 2008, Rajkot, Vol II. pp. 2116-2120 (13th-14th January 2008).
- Agarwal S, Das A, **Kesari V**, Sarma GC, Rangan L. (2008). Use of DNA Barcodes to identify *Curcuma* sp of Northeast India. In: *Proceedings of International Conference on Emerging Technologies and Applications in Engineering, Technology and Sciences*, ICETAETS 2008, Rajkot, Vol III. pp. 2525-2529. (13th-14th January 2008).

SELECTED PRESENTATIONS at CONFERENCES

1. Faus I, **Kesari V.**, Niñoles R., Llabata P., Tam E., Nebauer S.G., Santiago J., Hauser M.T., Gadea J. (2019). Arabidopsis ILITHYIA protein is necessary for proper chloroplast biogenesis and root development independent of eIF2 α phosphorylation. National symposium on Current Trends and Future Prospects in Plant Science Research, Centre of Advanced Study, (1-3, Feb 2019). Poster Presentation.
 2. **Kesari V**, Fatima T, Krishna P (2012). Flavonoid composition and expression analysis of flavonoid biosynthesis genes in the antioxidant rich sea buckthorn (*Hippophae rhamnoides* L.) berries and leaves. 51st Annual Meeting of the Phytochemical Society of North America, University of Western Ontario, London, Canada. (11th-15th, August 2012). Oral presentation Abstract index in : PHARMACEUTICAL BIOLOGY 50 (11), 1349-1349 (Publisher INFORMA HEALTHCARE)
 3. **Kesari V** (2011). Coordinated changes during seed development and germination in candidate plus tree of *P. pinnata*, a versatile forest tree as revealed by morphological, molecular, biochemical and ultrastructural studies.
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ISCA Young Scientist Award Programme 2011-2012, Section: Agriculture and Forestry Sciences, KIIT University, Bhubaneswar, 14th Oct, 2011. Oral presentation (**Nominated for Young Scientist award by ISCA**)

4. **Kesari V** (2010). Diversity studies in candidate plus trees (CPTs) of *Pongamia pinnata* (L.) Pierre using morphological traits and molecular marker. 33rd Conference of Indian Botanical Society and International Symposium on the New Horizons of Botany, Shivaji University, Kolhapur, Maharashtra, p. 9 (10th-12th Nov 2010). Oral presentation (**Nominated for Young Scientist award by Indian Botanical Society**)
 5. **Kesari V**, Das A, Rangan L (2010). Genetic relationship of *Curcuma* species from North East India using PCR based markers. National Conference on Innovations in Biotechnology, SRM University, Chennai, 2010 (7th-8th Oct 2010). Oral presentation (**Nominated for C.V. Jacob Award for the best Original Paper Presentation for Plant Biotechnology & Spices**).
 6. **Kesari V**, Ramchandran S, Ramesh AM, Vinod MS, Parida A, Rangan L (2010). Morphological and bio-molecular approach in CPTs of *P. pinnata*, a promising bioenergy crop from North Guwahati. Indian Youth Science Congress, SRM University, Chennai, 2010, p. 119 (26th-29th Jun 2010). Poster presentation (**Awarded prize for Best Poster**)
 7. **Kesari V**, Suman DK, Rangan L (2009). Physiological and phylogenetic characterization of *Rhizobium radiobacter* sp. nov. isolated from root nodules of a potential biodiesel crop - *Pongamia pinnata*. TWAS Regional Young Scientist Conference, Food, Health and Fuel: Plants for the future, Armada Hotel, Petaling Jaya, Selangor, Malaysia p23 (2nd-5th Nov 2009). Oral presentation
 8. Rangan L and **Kesari V** (2009). *Pongamia pinnata*- Sustainable Source of Feedstock for Biofuel. TWAS Regional Young Scientist Conference, Food, Health and Fuel: Plants for the future, Armada Hotel, Petaling Jaya, Selangor, Malaysia, p47 (2nd-5th Nov 2009). Poster presentation (**Awarded prize for Best Poster**)
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INSTRUMENT SKILLS

PCR, Real Time PCR, Gel documentation system, Electrophoresis (Agarose gel, SDS PAGE and Native PAGE)

Phase contrast, Inverted and trinocular stereozoom microscopes, SEM, Confocal microscope

Mechanical Cell disruptor (French press, sonicator), Centrifuge, Lyophilizer, Covaris

Nano drop, Double beam UV spectrophotometer, IR spectrophotometer, Spectrofluorimetry, Qbit 2.0 Fluorometer

COMPUTER PROFICIENCY

Bioinformatic tools: multiple sequence alignment using ClustalW, BLAST, Primer 3, NCBI database, MEGA X software, Homology modelling, STRING, BLAST2GO

Microsoft Office (MS Word, PowerPoint, Excel), Sigma plot 10, Cary win UV

Graphics software (Adobe illustrator CS, Photoshop CS), TEM image surface morphology using SiViewer software

SPSS for statistical analysis, NTSys 2.2 version software (Phylogenetic tree construction, PCA), Popgene 1.32, DNAMAN, ImageJ, Oligocalc

TEACHING ASSISTANT EXPERIENCE

- Molecular Biology and Genetic Engineering Lab. Tutor (B. Tech. V semester), Dept. of Biotechnology, IIT Guwahati, India (July 2008-Nov 2008)
- Modern Biology Tutor for B. Tech. 1st year Dept. of Biotechnology, IIT Guwahati, India (Jan 2008-May 2008)
- Plant Biotechnology Lab. Tutor (B. Tech. V semester), Dept. of Biotechnology, IIT Guwahati, India (Jan 2007-May 2007)
- Assisted 4 students for their summer research training programme (2-6 months) in Dept. of Biotechnology, IIT Guwahati from various institutes of india viz., Amity University, Thapar institute, NIT Durgapur, NIT Warangal

AFFILIATIONS WITH SOCIETIES

- Biotech Research Society of India (BRSI), Life member
- Indian Botanical Society (IBS), Life member
- Indian Science Congress Association (ISCA), Life member
- Society for Biotechnologists, India (SBTI), Life member

REFEREES

Dr. Latha Rangan	Dr. L. C. Rai	Dr. Jose Gadea Vacas
Professor	Distinguished Professor	Professor
Dept of Biosciences and Bioengineering	Dept. of Botany	Instituto de Biologia Molecular y Celular de Plantas (IBMCP)
IIT Guwahati , Assam, India	Department of Botany, Institute of Science, Banaras Hindu University, Varanasi- 221 005, India	Universidad Politecnica de Valencia (UPV)-CSIC. Camino de Vera s/n, 46022 Valencia, Spain
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I hereby declare that the given above information are true to the best of my knowledge and belief and can be supported with reliable documents when needed.

Date: 17/03/2023 **Place:** Varanasi, India

(VIGYA KESARI)