NAME: Dr. Satyabrata Nanda

Designation: Associate Professor

Qualification: PhD

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ABOUT ME

Dr. Satyabrata Nanda has a Ph.D. in Biotechnology with a specialization in Plant Protection. He received the Overseas Postdoctoral Fellowship from the Chinese Academy of Agricultural Sciences (CAAS) to carry out further research at China National Rice Research Institute, Hangzhou, China. He has got three research grants from different funding agencies, including the Science and Engineering Research Board (Govt. of India), Postdoctoral Science Foundation of China, and Zhejiang Provincial Grant (Govt. of China). Apart from this, he has also received other financial supports/grants, such as the International Travel Support (ITS) from SERB-DST, Govt. of India. His research is primarily focused on plant protection by using functional genomics approach. He has an h-index of 17 and an i10-index of 24, with >800 citations. Currently, he is extending his services as an Editorial Board Member in BMC Plant Biology. Additionally, he is a review Editor in Frontiers in Plant Science journal, and also an active reviewer for the reputed SCI journals, including Journal of Advance Research, Plant Biotechnology Journal, Cells, International Journal of Molecular Sciences, Frontiers in Microbiology, Environmental and Experimental Botany, Biology, Molecules, Plant Physiology and Biochemistry, Journal of Plant Growth Regulation, Genes, Plant Molecular Biology, and Journal of Biotechnology.

AREA OF INTEREST: Plant Protection, Functional Genomics

COURSES TAUGHT: Fundamentals of Plant Biotechnology, Fundamentals of Plant Biochemistry, Genetic Engineering, Techniques in Molecular Biology, Computational Biology

TEACHING EXPERIENCE: 6 years

RESEARCH EXPERIENCE: 8 years (post-PhD)

ADMINISTRATIVE/EXECUTIVE EXPERIENCE: 3 years

AWARDS & HONORS:

- Young Scientist Award at the International Conference on Advances in Agricultural, Veterinary, and Allied Sciences for Improving Livelihood and Environmental Security

(AAVASILES) 2022 organized by ICAR-IGFRI, ICAR-NAHEP, NADCL, and Birsa Agricultural University, India.

• Best Paper Presentation award at the International Conference on Advances in Agricultural, Veterinary, and Allied Sciences for Improving Livelihood and Environmental Security (AAVASILES) 2022.

• Eminent Achiever's Award at the Provost's Research Conclave 2022 held at Centurion University of Technology and Management, Odisha.

• Certificate of Excellence Award for research by Centurion University of Technology and Management in 2022.

• Overseas Postdoctoral Fellowship award by Chinese Academy of Agricultural Sciences, China in 2017.

• International Travel Support (ITS) grant by DST-SERB, Govt. of India to participate at the European Biotechnology Congress held at Lecce, Italy in 2014.

• Institutional PhD scholarship award by Siksha 'O' Anusandhan University in 2012.

RESEARCH GUIDANCE: MSc: 5; PhD: 3

RESEARCH GRANTS:

- Identification and characterization of candidate effectors from Indian brown planthopper (*Nilaparvata lugens* Stal) biotype. Total funding: Rs. 26.54 lakhs; funding agency: SERB, Govt. of India. December, 2021.
- Identification and characterization of microRNAs in IR56 rice involved in rice-brown planthopper (*Nilaparvata lugens* Stal) interactions. Total funding: RMB 80,000 (~ Rs. 8 lakhs); funding agency: Postdoctoral Science Foundation of China. May 2018.
- Zhejiang Provincial Grant for Postdoctoral Research. Total funding: RMB 50,000 (~ Rs. 5 lakhs); funding agency: Provincial Research Funding System, Zhejiang Province, China. November 2017.

PUBLICATIONS: 67

JOURNAL PUBLICATIONS

- Luo X, **Nanda S**, Zhang Y, et al. (2024) Risk assessment of RNAi-based biopesticides. New Crops, 10.1016/j.ncrops.2024.100019.
- Mandlik R, Sharma S, Rout P, et al. (2023) Genome-wide identification and characterisation of Aquaporins in Rosa chinensis. The Journal of Horticultural Science and Biotechnology, 10.1080/14620316.2023.2272153. (SCI, IF: 1.9)
- Rout P, Ravindranath N, Gaikwad D, **Nanda S** (2023) Unveiling Nilaparvata lugens Stål Genes Defining Compatible and Incompatible Interactions with Rice through

Transcriptome Analysis and Gene Silencing. Current Issues in Molecular Biology. 2023; 45(8):6790-6803. https://doi.org/10.3390/cimb45080429 (SCI, IF: 3.1)

- Roylawar P, Khandagale K, **Nanda S**, et al. (2023) Colonization of Serendipita indica promotes resistance against Spodoptera exigua in onion (Allium cepa L.). Frontiers in Microbiology, 10.3389/fmicb.2023.1190942 (SCI, IF: 5.2)
- Liu J, Guo M, **Nanda S**, et al. (2023) RNAi-based silencing of proteasome 20S subunit alpha 2 affected the survival and development of Henosepilachna vigintioctopunctata. Pesticide Biochemistry and Physiology, 10.1016/j.pestbp.2023.105547 (SCI, IF: 4.7)
- **Nanda S**, Rout P, Ullah I et al. (2023) Genome-wide identification and molecular characterization of CRK gene family in cucumber (Cucumis sativus L.) under cold stress and Sclerotium rolfsii infection. BMC Genomics, 10.1186/s12864-023-09319-z (SCI, IF: 4.4)
- Guo M, Gao R, **Nanda S**. et al. (2023) RNAi assays in the striped flea beetle (Phyllotreta striolata) suggest Psγ-COPI and PsArf1COPI as potential molecular targets for pest control. Pesticide Biochemistry and Physiology, 10.1016/j.pestbp.2023.105428. (SCI, IF: 4.7)
- Chen S, Luo X, **Nanda S**, et al. (2023) RNAi-based biopesticides against 28-spotted ladybeetle, Henosepilachna vigintioctopunctata does not harm the insect predator Propylea japonica. Journal of Agricultural and Food Chemistry, 10.1021/acs.jafc.2c08473. (SCI, IF: 6.1)
- Liu Z, Wang Y, **Nanda S**, et al. (2023) Oral delivery of dsHvUSP is a promising method for Henosepilachna vigintioctopunctata control with no adverse effect on the non-target insect Propylea japonica. Entomologia Generalis, 10.1127/entomologia/2023/1750 (SCI, IF: 6.9)
- Hussain S, **Nanda S**, Ashraf M, et al. (2023) Interplay Impact of Exogenous Application of Abscisic Acid (ABA) and Brassinosteroids (BRs) in Rice Growth, Physiology, and Resistance under Sodium Chloride Stress. Life, 10.3390/life13020498. (SCI, IF: 3.2)
- Ullah I, Yuan W, Uzair M, Li S, Rehman OU, **Nanda S**, Wu H (2022) Molecular Characterization of bHLH Transcription Factor Family in Rose (Rosa chinensis Jacq.) under Botrytis cinerea Infection. Horticulturae, 10.3390/horticulturae8110989. (SCI, IF: 3.1)
- Guo M, **Nanda S**, Yang C, et al. (2022) Oral RNAi assays in Henosepilachna vigintioctopunctata suggest HvSec23 and HvSar1 as promising molecular targets for pest control. Entomologia Generalis, 10.1127/entomologia/2023/1712 (SCI, IF: 6.9)
- SS Rout, P Rout, M Uzair, G Kumar, **Nanda S** (2022) Genome-wide identification and expression analysis of CRK gene family in chili pepper (Capsicum annuum L.) in response

to Colletotrichum truncatum infection. The Journal of Horticultural Science and Biotechnology, 10.1080/14620316.2022.2117654. (SCI, IF: 1.9)

- Lu J, **Nanda S**, Chen S, et al. (2022) A survey on the off-target effects of insecticidal double-stranded RNA targeting Hvβ'COPI gene in the crop pest Henosepilachna vigintioctopunctata through RNA-Seq. Journal of Integrative Agriculture, 10.1016/j.jia.2022.07.015. (SCI, IF: 4.8)
- Xiong T, **Nanda S**, Jin F, et al. (2022) Control efficiency and mechanism of spinetoram seed-pelleting against the striped flea beetle Phyllotreta striolata. Scientific Reports, 10.1038/s41598-022-13325-8. (SCI, IF: 4.6)
- Chen S, **Nanda S**, Guo M, et al. (2022) Tyrosine hydroxylase is involved in cuticle tanning and reproduction in the 28-spotted potato ladybeetle, Henosepilachna vigintioctopunctata. Pest Management Science, 10.1002/ps.6980. (SCI, IF: 4.1)
- Ullah I, Ponsalvan A, Abbas A, Hussain S, **Nanda S** (2022) Genome-wide identification and expression analysis of the RcYABBYs reveals their potential functions in rose (Rosa chinensis Jacq.). The Journal of Horticultural Science and Biotechnology, 10.1080/14620316.2022.2048207. (SCI, IF: 1.9)
- **Nanda S**, Kumar G, Hussain S (2022) Role of molecular markers in improving abiotic stress tolerance in agricultural crops. Research Journal of Biotechnology, 10.25303/1701rjbt172178. (Scopus, WoS)
- Liu Z, **Nanda S**, Yang C, et al. (2022) RNAi suppression of the nuclear receptor FTZ-F1 impaired ecdysis, pupation, and reproduction in the 28-spotted potato ladybeetle, Henosepilachna vigintioctopunctata. Pesticide Biochemistry and Physiology, 10.1016/j.pestbp.2021.105029. (SCI, IF: 4.7)
- Das P, **Nanda S** (2022) Host-delivered-RNAi-mediated resistance in bananas against biotic stresses. Journal of Experimental Biology and Agricultural Sciences, 10.18006/2022.10(5).953.959 (Scopus, WoS)
- Guo M, **Nanda S**, Chen S, et al. (2021) Oral RNAi toxicity assay suggests clathrin heavy chain as a promising molecular target for controlling the 28-spotted potato ladybird, Henosepilachna vigintioctopunctata. Pest Management Science, 10.1002/ps.6594. (SCI, IF: 4.1)
- **Nanda S**, Kumar G, Mishra R, Joshi RK (2021) Microbe-Assisted Alleviation of Heavy Metal Toxicity in Plants: A Review. Geomicrobiology journal, 10.1080/01490451.2021.1979697. (SCI, IF: 2.3)
- Hussain S†, **Nanda S**†, Zhang J, et al. (2021) Auxin and Cytokinin Interplay During Leaf Morphogenesis and Phyllotaxy. Plants, 10.3390/plants10081732 (SCI, IF: 4.5)

- **Nanda S**, Kumar G, Yadav SK, Hussain S (2021) Genome-wide identification of the GATA transcription factor family in Dichanthelium oligosanthes. Journal of Experimental Biology and Agricultural Sciences, 10.18006/2021.9(4).407.416 (Scopus, WoS)
- Kumar G, Rashid MM, **Nanda S** (2021) Beneficial Microorganisms for Stable and Sustainable Agriculture. Biopesticides International, https://connectjournals.com/02196.2021.17.17. (Scopus, WoS)
- Bharat SS, Sahu S, Sahu SS, Mohanty P, **Nanda S** et al. (2021) RNA Interference: A Functional Genomics Approach for Plant Disease Management. Asian Journal of Biological and Life Sciences, 10.5530/ajbls.2021.10.43. (Scopus, Wos)
- **Nanda S**, Kumar G, Hussain S (2021) Utilization of seaweed-based biostimulants in improving plant and soil health: Current updates and future prospective. International Journal of Environmental Science and Technology, 10.1007/s13762-021-03568-9. (SCI, IF: 3.1)
- **Nanda S**, Mishra R, Joshi RK (2021) Molecular basis of insect resistance in plants: Current updates and future prospects. Research Journal of Biotechnology, 16(3): 194-205. (Scopus, WoS)
- **Nanda S**, Mondal T, Yadav SK, Kumar G (2021) Biopesticides and their Encapsulation Techniques: Current Updates and Future Prospective. International Journal of Theoretical and Applied Sciences, 13(2): 01-04. (NAAS)
- Bajpai R, Teli B, Rashid MM, **Nanda S** et al. (2021) Biocontrol of Fusarium Wilt in Tomato: An Eco-friendly and Cost-Effective Approach. Biological Forum, 13(2): 62-69. (NAAS)
- Kumar G, Rashid MM, Teli B, Bajpai R, **Nanda S**, Yadav SK (2021) Cultivar Mixture: Old but Impactful Plant Disease Management Strategy. International Journal of Economic Plants, 10.23910/2/2021.0423b. (NAAS)
- Kumar G, **Nanda S** (2020) Molecular Perspectives of Plant-Pathogen Interactions: An Overview on Plant Immunity. Biological Forum, 13: 48-53. (NAAS)
- **Nanda S** (2020) From Phytochemicals to Phytomedicines: Potential Roles of Plant-Based Biomolecules in the Covid Era. Bioscience Biotechnology Research Communications, 13: 39-43. (WoS)
- **Nanda S**, Yuan SY, Lai FX et al. (2020) Identification and analysis of miRNAs in IR56 rice in response to BPH infestations of different virulence levels. Scientific Reports, 10.1038/s41598-020-76198-9 (SCI, IF: 4.6)
- Hussain S, Zhu C, Huang J, Huang J, Zhu L, Cao X, **Nanda S** et al. (2020) Ethylene response of salt stressed rice seedlings following Ethephon and 1-methylcyclopropene seed priming. Plant Growth Regulation, 10.1007/s10725-020-00632-1 (SCI, IF: 4.2)

- Wan PJ, Zhou RN, **Nanda S**. et al. (2019) Phenotypic and transcriptomic responses of two Nilaparvata lugens populations to the Mudgo rice containing Bph1. Scientific Reports, 10.1038/s41598-019-50632-z (SCI, IF: 4.6)
- Hussain S, Zhu C, Bai Z, Huang J, Zhu L, Cao X, **Nanda S**, et al. (2019) iTRAQ-based protein profiling and biochemical analysis of two contrasting rice genotypes revealed their differential responses to salt stress. International Journal of Molecular Sciences, 10.3390/ijms20030547 (SCI, IF: 5.6)
- Hussain S, **Nanda S** (2019) Genome-wide identification of the SPL gene family in Dichanthelium oligosanthes. Bioinformation, 10.6026/97320630015165.
- **Nanda S**, Wan PJ, Yuan SY et al. (2018) Differential responses of OsMPKs in IR56 rice to two BPH populations of different virulence levels. International Journal of Molecular Sciences, 10.3390/ijms19124030 (SCI, IF: 5.6)
- Li KL, Yuan SY, **Nanda S**, et al. (2018) Roles of E93 and Kr-h1 on metamorphosis of Nilaparvata lugens. Frontiers in Physiology, 10.3389/fphys.2018.01677 (SCI, IF: 4)
- Chand SK, **Nanda S**, Joshi RK (2018) Genetics and molecular mapping of a novel purple blotch resistance gene ApR1 in onion (Allium cepa L.) using STS and SSR markers. Molecular Breeding, 10.1007/s11032-018-0864-4 (SCI, IF: 3.1)
- Mohapatra RK, **Nanda S** (2018) In silico analysis of onion chitinases using transcriptome data. Bioinformation, 10.6026/97320630014440
- **Nanda S** (2018) Mining and characterization of Allium cepa expressed sequence tags (ESTs) encoding receptor-like kinases (RLKs). Plant Omics Journal, 10.21475/poj.11.02.18.1250
- Chand SK, **Nanda S**, Mishra R, et al. (2017) Multiple garlic (Allium sativum L.) microRNAs regulate the immunity against the basal rot fungus Fusarium oxysporum f. sp. cepae. Plant Science, 10.1016/j.plantsci.2017.01.007 (SCI, IF: 5.2)
- Sinha P, **Nanda S**, Joshi RK et al. (2017) Development of a Sequence Tagged Site (STS) Marker for sex identification in the dioecious rattan species Calamus guruba Buch.-Ham. Molecular Breeding, 10.1007/s11032-017-0630-z (SCI, IF: 3.1)
- Mishra R, **Nanda S**, Rout E, et al. (2017) Differential expression of defense-related genes in chili pepper infected with anthracnose pathogen Colletotrichum truncatum. Physiological and Molecular Plant Pathology, 10.1016/j.pmpp.2016.11.001 (SCI, IF: 2.7)
- Chand SK, **Nanda S**, Joshi RK (2016) Regulation of miR394 in response to Fusarium oxysporum f. sp. cepae (FOC) infection in garlic (Allium sativum L). Frontiers in Plant Science, 10.3389/fpls.2016.00258 (SCI, IF: 5.6)
- **Nanda S**, Chand SK, Mandal P, Tripathy P, et al. (2016) Identification of novel source of resistance and differential response of Allium genotypes to purple blotch pathogen,

Alternaria porri (Ellis) Ciferri. Plant Pathology Journal, 10.5423/PPJ.OA.02.2016.0034 (SCI, IF: 2.3)

- **Nanda S**, Rout E, Joshi RK (2016) Curcuma longa mitogen-activated protein kinase 6 (ClMPK6) stimulates the defense response pathway and enhances the resistance to necrotrophic fungal infection. Plant Molecular Biology Reporter, 10.1007/s11105-015-0972-9 (SCI, IF: 2.1)
- Chand SK†, **Nanda S**†, Rout E, et al. (2016) Identification and characterization of microRNAs in turmeric (Curcuma longa L.) responsive to infection with the pathogenic fungus Pythium aphanidermatum. Physiological and Molecular Plant Pathology, 10.1016/j.pmpp.2016.01.010 (SCI, IF: 2.7)(†equal contributions)
- Chand SK†, **Nanda S**†, Rout E, et al. (2016) De novo sequencing and characterization of defense transcriptome responsive to Pythium aphanidermatum infection in Curcuma longa L. Physiological and Molecular Plant Pathology, 10.1016/j.pmpp.2016.03.008 (SCI, IF: 2.7) (†equal contributions)
- Rout E, **Nanda S**, Joshi RK (2016) Molecular characterization and heterologous expression of a pathogen induced PR5 gene from garlic (Allium sativum L.) conferring enhanced resistance to necrotrophic fungi. European Journal of Plant Pathology, 10.1007/s10658-015-0772-y (SCI, IF: 1.8)
- Rout E, Tripathy P, **Nanda S**, et al. (2016) Evaluation of cultivated and wild Allium accessions for resistance to Fusarium oxysporum f. sp. cepae. Proceedings of the National Academy of Sciences, India Section B, 10.1007/s40011-015-0506-0
- Chand SK, **Nanda S**, Rout E, Joshi RK (2015) Mining, characterization and validation of EST derived microsatellites from the transcriptome database of Allium sativum L. Bioinformation, 10.6026/97320630011145
- **Nanda S**, Nayak S, Joshi RK (2014) Molecular cloning and expression analysis of four turmeric MAP kinase genes in response to abiotic stresses and phytohormones. Biologia Plantarum, 10.1007/s10535-014-0429-2 (SCI, IF: 1.5)
- Bhowmick BK, **Nanda S**, Nayak S, et al. (2014) An APETALA3 MADS-box linked SCAR marker associated with male specific sex expression in Coccinia grandis (L). Voigt. Scientia Horticulturae, 10.1016/j.scienta.2014.06.041 (SCI, IF: 4.3)
- **Nanda S**, Kar B, Nayak S, et al. (2013) Development of an ISSR based STS marker for sex identification in pointed gourd (Trichosanthes dioica Roxb.). Scientia Horticulturae, 10.1016/j.scienta.2012.11.009 (SCI, IF: 4.3)
- Joshi RK, **Nanda S**, Rout E, et al. (2013) Molecular modeling and docking characterization of CzR1, a CC-NBS-LRR R-gene from Curcuma zedoaria Loeb. that confers resistance to Pythium aphanidermatum. Bioinformation, 10.6026/97320630009560

- Rout E, **Nanda S**, Nayak S, Joshi RK (2013) Molecular characterization of NBS encoding resistance genes and induction analysis of a putative candidate gene linked to Fusarium basal rot resistance in Allium sativum. Physiological and Molecular Plant Pathology, 10.1016/j.pmpp.2013.11.003 (SCI, IF: 2.7)
- Kar B, **Nanda S**, Nayak PK, et al. (2013) Molecular characterization and functional analysis of CzR1, a coiled-coil-nucleotide-binding-site-leucine-rich repeat R-gene from Curcuma zedoaria Loeb. that confers resistance to Pythium aphanidermatum. Physiological and Molecular Plant Pathology, 10.1016/j.pmpp.2013.05.003 (SCI, IF: 2.7)

BOOK PUBLICATIONS

- Purkaystha S, Das P, Rashmi K, Rout S, **Nanda S** (2024) Advances in Genetic Mapping of Loci Governing Disease Resistance in Plants. In Biotechnological Advances for Disease Tolerance in Plants. Springer, ISBN: 978-981-99-8874-7, 10.1007/978-981-99-8874-7_1.
- **Nanda S** (2023) Omics-assisted Understanding of BPH Resistance in Rice: Current Updates and Future Prospective. In Bioinformatics in Agriculture: Next Generation Sequencing Era, Elsevier, ISBN: 978-0-323-89778-5, 10.1016/B978-0-323-89778-5.00003-9.
- Akhtar N, Rashid MM, Parween S, Kumar G, **Nanda S** (2022) Mode of action of different microbial products in plant growth promotion. In New and Future Developments in Microbial Biotechnology and Bioengineering, Elsevier, ISBN: 978-0-323-85577-8, 10.1016/B978-0-323-85577-8.00016-0
- Hussain S, Huang J, Huang J, Ahmad S, **Nanda S** et al. (2020) Rice Production Under Climate Change: Adaptations and Mitigating Strategies. In Environment, Climate, Plant and Vegetation Growth, Reference Series in Plant Ecology. Springer Nature, ISBN: 9783030497323, 10.1007/978-3-030-49732-3_26.
- **Nanda S**, Mohanty B, Joshi RK (2019) Endophyte mediated host stress tolerance as a means for crop improvement. In Endophytes and Secondary Metabolites, Reference Series in Phytochemistry, Springer Nature, ISBN: 9783319769004, 10.1007/978-3-319-76900-4_28-1
- Mishra R, **Nanda S**, Joshi RK (2018) The CRISPR/Cas Genome editing system and its application in rice improvement. In Rice Science: Biotechnological and Molecular Advancements, CRC Press, ISBN: 9781351136587.
- **Nanda S**, Mohanty JN, Mishra R, Joshi RK (2017) Metabolic engineering of phenylpropanoids in plants. In Transgenesis and Secondary Metabolism, Reference Series in Phytochemistry, Springer Nature, ISBN: 9783319274904, 10.1007/978-3-319-27490-4_30-1

PARTICIPATION IN CONFERENCE & SEMINARS (AS INVITED/PLENARY/CHAIR)

• Chaired a session at the International Conference on Pulse Research (ICPR-2022).

• Co-chaired a session at the International Conference on Advances in Agriculture Technology and Allied Sciences (ICAATAS 2022).

• Invited Speaker at the International Conference on Bioresources of Our Environment: Utilization and Conservation (ICBEUC 2022).

• Invited Speaker at the National conference on Recent Advances in Biological Research in 2020.

OTHER INFORMATIONs

• Life member (L-916) of the Society for Plant Biochemistry and Biotechnology (SPBB).

• Member of European Biotechnology Thematic Network Association (EBTNA).