

## ANNUAL REPORT OF P.G DEPT. OF BIOTECHNOLOGY- 2018-20

### Activities

1. Department of Biotechnology organized a **one day National Seminar on "Biotechnological interventions in stress management" on 12th January, 2019**. Dr. Himanshu Pathak, Director, National Rice Research Institute, Cuttack was the Chief Guest. The seminar focussed on several biotechnological approaches and their application towards management of biotic and abiotic stresses as required for sustainable growth of plant, animals and microbes. The seminar was attended by eminent speakers from across the country including, Dr. Bimal Prassana Mohanty, ICAR-CIFRI, Barrackpore, Dr. Mrinal Samanta, ICAR-CIFA, Bhubaneswar, Dr. Arup Mukherjee, ICAR-NRRI, Dr. Padmaja P Mishra, SINP, Kolkata, Dr. S. Senapati, ILS, Bhubaneswar and Dr. Sukanta Bhattacharya, Lignin Bioscience Pvt. Ltd who deliberated on different aspect of the theme of the seminar. Posters relevant to the theme of the seminar were presented by student participants.
2. Dr. Javed Akther, Senior Scientist, IMGENEX India was invited as resource person on 27.10.2018 under the **Industry academia interaction series** of the department. Dr Akther delivered a talk on the development of biotechnology based kits for efficient detection and prediction of plant infection. He also emphasized the need for entrepreneurship development among young biotechnology graduates for self-employability and growth of this ever advancing field of science
3. P.G. Dept. of Biotechnology initiated the **Biotechnology Seminar Series** in the year 2019. Under this, four eminent biotechnologists were invited to deliver lectures on recent issues in Biotechnology. **Dr. Nrusingha Dey, Scientist V at the ILS, Bhubaneswar** spoke about "Transcriptional regulation of gene expression" on 15.03.2019. Dr. Rupesh Dash, Scientist IV at ILS, Bhubaneswar discussed about "Gene therapy for human disease treatment" on 26.03.2019. **Dr. Santosh Kar, Retd Professor, JNU** addressed about "Immunomodulation by Curcumin in Malaria" on 27/03/2019. The first year of the series ended with **Dr. Gourav Raj Dwivedi, RMRC, Bhubaneswar** who spoke about "Synergy: Need of the hour" on 10.04.2019.
4. A study tour was organized on 14.12.2018 to the M/s Diageo Distilleries, Berhampur for the PG 2<sup>nd</sup> year and UG 3<sup>rd</sup> year students. Students were explained about the various biotechnological approaches used in modern distilleries and their applications in brewery industries.

5. The students of the 2<sup>nd</sup> Semester PG Biotechnology visited the Central Instrumentation facility at OUAT, Bhubaneswar.

### **Students' achievements**

1. Three students of 2<sup>nd</sup> year PG Biotechnology were selected to undergo training under the Biotech Skill Development Series (BSDS)-2018 organized by MRD Life Sciences, Lucknow from 11<sup>th</sup> -17<sup>th</sup> October 2018.
2. 11 students of the 3<sup>rd</sup> year UG Biotechnology represented the department at the 8<sup>th</sup> Programme on Young Graduate for Leadership in Biotechnology at SOA University, Bhubaneswar. Ms Preeti Das was awarded the first prize in the biotechnology quiz competition organized as the part of the event.
3. Ms Souvagyalaxmi, a PG Biotechnology student of the 2017-18 batch was appointed as Junior Lab Officer at the Lupin India, Pune.
4. Ms Arpita Panda, 1<sup>st</sup>Yr PG student of the 2019-20 batch was selected for summer internship at the Indian Institute Science Education and Research-Kolkata.
5. The PG students were selected in National Institutes like IMMT, Bhubaneswar and RMRC, Bhubaneswar for their 6- months dissertation program.
6. **Tista Mallick of 1<sup>st</sup> year MSc. (Biotechnology)** was awarded **2<sup>nd</sup> Runners-up** in the **Voice of BT Intercollegiate Public Speaking Contest (East Zone)** conducted by Novozyme India Pvt. Ltd. on 27 September, 2019. She will be receiving Rs. 10000/- as prize money and will be doing a 6 month's internship at Research and Development (R&D) facilities of Novozyme India Pvt. Ltd.
7. 12 students of UG 2<sup>nd</sup> year have interned for Ambika Prasad Research Foundation (APRF) from 1<sup>st</sup> to 31<sup>st</sup> August, 2019 and have completed the course and now writing two research papers about their works. The internship research was on Phytochemical Analysis.
8. 3 students from UG 3<sup>rd</sup> year **presented papers** in the 4<sup>th</sup> International Conference on Management, Sciences, Engineering and Applications held at Centurian University of Technology and Management, Bhubaneswar on 19-21 December, 2019.
9. Shrabani Patnaik of UG 2<sup>nd</sup> year participated in KIIT Fest-2019 and won 1<sup>st</sup> prize (**Cash Prize of 20,000/-**) in Martian-2 event, a model competition held on 16-18 December, 2019.

10. 2 students of UG 2<sup>nd</sup> year Secured **Special Mention (3<sup>rd</sup> position)** in the SOA MUN session delegating as Russian Federation and won cash prize of **Two Thousand Rupees.**

### **Teachers Achievements**

- Prof. Sasmita Mohanty was appointed as Dean, Faculty of Science & Technology, Rama Devi Women's University.
- Prof. Sasmita Mohanty, Prof. & Head was invited as a resource person for the refresher course in Bio Sciences organized by the Dept. of Zoology, Utkal University, Bhubaneswar on 01.09.2018.
- Prof. Sasmita Mohanty, Prof & Head was invited as the executive board member to the 34<sup>th</sup> Executive committee meeting of the Association for promotion of DNA fingerprinting and other DNA technologies (ADNAT) on 05.03.2019 at IIT, Rourkee.
- Dr. Raj Kumar Joshi, Associate Professor was invited as a Jury Member in the Young Scientist Forum of the 4<sup>th</sup> India International Science Festival, Lucknow on 5<sup>th</sup>-8<sup>th</sup> October 2018.
- Dr. Raj Kumar Joshi, Associate Professor was invited as a keynote speaker at the 2018 Next Gen Genomics, Biology, Bioinformatics and Technologies (NGBT) conference held at Jaipur from Sep 30<sup>th</sup> to 2<sup>nd</sup> Oct 2018.
- Dr. Raj Kumar Joshi, Associate Professor was accepted as a Life Member of the Indian Society of Genetics and Plant Breeding on 26<sup>th</sup> December 2018.
- Dr. Dillip Kumar Bishi, Asst. Professor was invited as a speaker at the National Conference on "Biodiversity, Biotechnology and Bioinformatics: Innovative and Emerging Trends (NCBBBIET-2019), organized by P.G. Department of Botany, Berhampur University (BU), Berhampur (Odisha) from 22<sup>nd</sup>-23<sup>rd</sup> February, 2019.
- Dr. Monalisa Mohanty, Asst. Professor was invited as a speaker at the National conference on "plants for sustainable development and clean environment" and 43<sup>rd</sup> Annual conference of Odisha Botanical Society on 23<sup>rd</sup> and 24<sup>th</sup> December 2018.
- Dr. Monalisa Mohanty, Asst. Professor presented a paper at the International Conference on "Biodiversity and Sustainable Development: Strategies for future" on 29<sup>th</sup> and 30<sup>th</sup> Jan 2019, at N.C. Autonomous College Jajpur, Odisha.

### Research project sanctioned in the dept.

S.No	Title of the project	Name of the PI/Co-PI	Funding Agency	Amount mobilized
1	Rapid development of NGS based SNP markers and marker-assisted selection towards purple blotch resistance in Onion ( <i>Allium cepa</i> L.)	Dr. Raj Kumar Joshi	SERB, Govt. of India	46.32 Lakhs
2	Delineating the small RNA networks associated with host resistance and pathogenesis of basal rot fungus ' <i>Fusarium oxysporum f. sp. cepae</i> ' in <i>Allium cepa</i> L.	Dr. Raj Kumar Joshi	DBT, Govt. of India	47.29 Lakhs
3	Gedunin-ZnO nanoparticle-incorporated Poly-L-Lactic acid electrospun nanofibrous scaffold for controlled drug delivery using a three-dimensional hepatosphere model	Dr Dillip Kumar Bishi	DST, Govt. of India	30.00 Lakhs

### List of publications from the dept.

- Mishra R, Joshi RK, Zhao K (2018) Genome editing in rice: Recent advances, challenges and future implications. *Frontiers in Plant Science*. (Accepted, in Press) (SCI IF- 4.5).
- 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*. Doi: 10.1007/s11032-018-0864-4 (SCI impact factor-2.108).
- Mishra R, Mohanty JN, Joshi RK (2019) Sequence-tagged site-based diagnostic markers linked to a novel anthracnose resistance gene *RCt1* in chili pepper (*Capsicum annuum* L.) *3 Biotech*; 9:9 Doi: 10.1007/s13205-018-1552-0.
- Mohanty JN, Chand SK, Joshi RK (2019) Multiple microRNAs Regulate the Floral Development and Sex Differentiation in the Dioecious Cucurbit *Coccinia grandis* (L.) Voigt. *Plant Molecular Biology Reporter* Doi:10.1007/s11105-019-01143-8.
- Nanda S, Mohanty JN, Mohanty B, Joshi RK (2019) Endophyte-mediated host stress tolerance as a means for crop improvement. *Reference Series in Phytochemistry*. Doi:10.1007/978-3-319-76900-4\_28-1.
- Rallapalli S, Guhathakurta S, Narayan S, **Bishi DK**, Balasubramanian V, Korrapati PS. Generation of clinical-grade red blood cells from human umbilical cord blood mononuclear cells. *Cell and Tissue Research*, 2019, 375 (2) 437–449.

- PathomthatSrisuk, **Dillip K. Bishi**, Fernanda V. Berti, Carlos J. R. Silva, Il Keun Kwon, Vitor M. Correlo, and Rui L. Reis. Eumelanin Nanoparticle-Incorporated Polyvinyl Alcohol Nanofibrous Composite as an Electroconductive Scaffold for Skeletal Muscle Tissue Engineering. *ACS Applied BioMaterials.*, 2018, 1 (6), 1893–1905.
- Kari V, **Raul SK**, Henck JM, Kitz J, Kramer F, Kosinsky RL, Übelmesser N, Mansour WY, Eggert J, Spitzner M, Najafova Z, Bastians H, Grade M, Gaedcke J, Wegwitz F, Johnsen SA. The histone methyltransferase DOT1L is required for proper DNA damage response, DNA repair, and modulates chemotherapy responsiveness. *Clin Epigenetics*. 2019 Jan 7;11(1):4.
- Mitra T, Mohanty BP, **Mohanty S**, Purohit GK, Das BK. Expression patterns and mutation analysis of p53 in fish *Rita rita* from polluted riverine environment. **Mutat Res Gen Tox En** 832–833 (2018) 41–51.
- Mitra T, Mahanty A, Ganguly S, Purohit GK, **Mohanty S**, Parida PK, Behera PR, Raman RK, Mohanty BP. Expression patterns of heat shock protein genes in *Rita rita* from natural riverine habitat as biomarker response against environmental pollution. **Chemosphere**. 2018 Jul 23; 211:535-546.

#### **MoU with nearby institutions**

Department of Biotechnology, RDWU, signed MoUs with CIFA, Bhubaneswar and ILS, Bhubaneswar in 2018. The understanding is regarding research collaboration among the faculty and the scientists and availing the facility of the above institutes by the students.