



## MoU Signing Ceremony

Berhampur University signed MoU with Rotary Club of Berhampur

## Inner Wheel Centenary Celebration

Hon'ble Vice Chancellor Prof. Geetanjali Dash was invited to be a chief guest in the centenary celebration of the Inner Wheel Club of Berhampur on the 14th of July 2023,



## The Odisha CSR & Environment Conclave 2023



Hon'ble Vice Chancellor Prof. Geetanjali Dash graced "The Odisha CSR & Environment Conclave 2023" on 29th July 2023, at Gopalpur, Ganjam(Odisha). as a Chief Guest and shared her views and valuable experience with the participants.

## AIU 1st National Women Vice Chancellors' Conference



Vice Chancellor Prof. Geetanjali Dash participated in the AIU 1st National Women Vice Chancellors' Conference held at IILM University, Gurugram, during 17-18 July 2023.

Vice Chancellor Madam Prof. Geetanjali Dash has also been nominated by the Executive Council (2023-24), Indian Social Science Academy as a Member of the National Academic Advisory Committee of XLVII Indian Social Science Congress to be held at University of Science and Technology, Meghalaya during 5-9 Feb. 2024.

# FDP on Chemical Sciences: Current & Future Prospects

The Human Resource Development Centre (HRDC), Berhampur University, in association with the P. G. Department of Chemistry, organized a week-long Faculty Development Programme (FDP) on "Chemical Sciences: Current & Future Prospects" during 24-29 July 2023. The inaugural function was held on 24th July 2023 at the Central Instrumentation Centre (CIC) in the presence of the Vice Chancellor, Berhampur University, Prof. Geetanjali Dash and Chief Guest, Professor Dillip Kumar Chand, IIT Madras (present online), Prof. Jogeswar Panigrahi, Director, HRDC, Dr. B. Anjan Kumar Prusty, Joint Director, HRDC, Dr. Satyanarayan Sahoo, Convener of the FDP, Dr. Ganngamphaomei, Coordinator, FDP, Dr. Laxmidhar Rout and Dr. Bibhuti Bhusan Parida. During this programme, 21 lectures were delivered by experienced faculty members



from various prestigious institutes, starting from IIT Bangalore, IIT Madras, IIT Bombay, IIT Guwahati, IIT(ISM) Dhanbad, NISER Bhubaneswar, IISER Berhampur, NIT Surat, Saha Institute of Nuclear Physics and other reputed Universities of the country. The resource persons delivered their lectures on fundamental topics in Chemistry, various advanced areas of research in Chemistry, the art of scientific writing, ethics in scientific research, reference management system.

## Extramural Lecture: Dept. of Marine Sciences

On July 24, 2023, at Berhampur University, Prof. Deepak Mishra, Merle C. Prunty, Jr. Professor & Associate Head at the Department of Geography, University of Georgia, USA, gave a captivating extramural lecture on the subject of "Solving Environmental Challenges in the Age of Big Data & AI: Sensing Integrated Cyber-Physical Systems." Prof. Mishra looked into the revolutionary possibilities of big data and artificial intelligence to address critical environmental concerns like urban heat islands and harmful algal blooms. He offered his opinions on the relative merits of small satellites for more focused environmental monitoring as the director of the "Small Satellite Research Lab."



## BIS internship program

As a part of BIS internship program Mr. Sudhanshu Shekhar Mohanty from NIT Rourkela came to the Department of Marine Sciences, Berhampur University on 6th July 2023. The internship is about Prevention of coastal hazards. Under this internship Dr Nibedita Behera accompanied Sudhanshu to IMD gopalpur, where they discussed the coastal flooding caused by high tides, Storm surges and heavy rainfalls. In addition to that how climate change exacerbated coastal hazards by increasing the frequency and intensity of storms, raising sea levels and altering weather patterns.

# 'Global Environmental Scenario: Our Common Future': Extramural Lecture

Extramural Lecture on 10.07.2023 was given by environmentalist Dr. Jaya Krushna Panigrahi, Secretary, Orissa Environmental Society, at Berhampur University on the theme 'Global Environmental Scenario: Our Common Future': Extramural Lecture.



## World Population Day 2023



Department of Economics, Berhampur University observed the World Population Day 2023 on 11th July 2023. Prof. Bhagabat Patra, a noted public speaker and an adjunct professor of Economics delivered a special talk on the occasion. On July 11, 1990, the Day was first observed in more than 90 nations. The theme for World Population Day 2023 is "Unleashing the power of gender equality: Uplifting the voices of women and girls to unlock our world's infinite possibilities". The speaker centered his remarks on the significance and urgency of population issues.

## Industrial Visit to Gopalpur IMD

On July 12, 2023, 14 students from Berhampur University's Department of Marine Sciences (Oceanography) visited Gopalpur IMD to learn about the meteorological instruments used by IMD for day-to-day forecasting. Dr. Nibedita Behera, Assistant Professor, Department of Marine Sciences, Berhampur University, accompanied the students. Students learned the strategy and approach for gathering data from the meteorological instruments.



## Microbial Infestation and Intoxication in Food Stuffs: Distinguished Lecture



As a part of the distinguished lecture series, the P.G. Dept. of Home Science organized a lecture on "Microbial Infestation and Intoxication in Food Stuffs". Mrs Jhunilata Bhuyan, Scientist (Home Science) working in Krushi Vigyan Kendra, Mayurbhanj, delivered her lecture. Mrs. Bhuyan vividly explained the difference between infestation and infection by citing examples. Students actively participated in asking various questions, and the resource person clarified all doubts of students.

# From Raman Effect to Genetic Editing: Prof. A.K. Ganguli Explores Science's Transformative Gifts



Berhampur University organized an Extramural Lecture on 14th July 2023 on “Gifts of Science to Society”. The event, introduced by Dr. Rout, was followed by a speech from the Chairman of the PG Council, Prof. Susant Kumar Baral, who emphasized that India has become a star attraction in the world due to its remarkable scientific achievements. Prof. Ashok Kumar Ganguli, Director, IISER Berhampur, was the Chief Speaker. Prof. Ganguli began his presentation by addressing the trend of reducing interest among young people in pursuing science. He highlighted how science has been instrumental in reshaping the course of the world and stressed the need for individuals to take up science to address the challenges that demand scientific solutions. He



said, “Science and technology can be done in places without great equipment where there is great creativity.” Vice-Chancellor, Prof. Geetanjali Dash, delivered closing remarks, commending the lecture for its enlightening discourse on the crucial role of science in society.

## Online Skill Building Workshop on “Tools and Techniques of Marine Fisheries and Observational Oceanography”

The PG Department of Marine Sciences at Berhampur University successfully conducted a national-level online skill-building workshop on ‘Tools and techniques of Marine Fishery and Observational oceanography’ from July 13 -15, 2023. The workshop was conducted by experts and practitioners from CMLRE, INCOIS, IIT Bombay, Vidyasagar University and Berhampur University. Nearly 160 participants registered for the workshop and learned valuable skills in marine fisheries processing and preservation techniques, instrumentation such as CTD, ADCP, glider, tide gauge, wave rider buoys as well as data plotting and interpretation in MATLAB and ODV.

## Distinguished lecture series on "Constituent Assembly and Uniform Civil Code"

On 22nd July 2023, P.G. Department of Political Science, Berhampur University organized a special talk on "Constituent Assembly and Uniform Civil Code". Honourable Vice-Chancellor Prof. Geetanjali Dash was the Chief Patron, Chairman P.G. Council, and Prof. Sushant Ku in this program. Baral was the Patron. Sri Satya Narayana Sahu, Former OSD to the President of India, K.R. Narayanan, was the Chief Speaker of the occasion. The Speaker highlighted the stark contradictions in the Constituent assembly concerning implementing the Uniform Civil Code. He



talked about the implications of implementing the Uniform Civil Code in the context of the religious and cultural rights of minorities.

# Alumni Lecture Series: Dept. of Marine Sciences



The Department of Marine Sciences hosted its fourth alumni lecture of the year 2023 on July 22 and welcomed distinguished alumnus, Dr. Sanjiba Kumar Baliarsingh, Scientist at INCOIS, Hyderabad. Dr. Baliarsingh enlightened listeners about the remarkable synergies of SDG14 (Sustainable Development Goal 14) in the marine ecological research ecosystem of India. His captivating lecture shed light on how our marine ecosystem and the pursuit of sustainability go hand in hand.



## Expert talk by Dr. Rabindra Kumar Swain

P.G. Department of Commerce, Berhampur University has organised an expert talk on "Accounting Framework for Financial Reporting under IFRS/IND AS" on 22nd July 2023. The expert talk was delivered by Dr. Rabindra Kumar Swain, Assistant Professor (S-III)/Reader, P.G. Department of Commerce, Utkal University, Bhubaneswar. In this session, Dr. Swain explained the relevance of Accounting Standards, GAAP, IFRS, Financial Statements, etc. The main focus was to inform the students about the corporate reporting standards in this complex business environment.



## 64th Income Tax Day 2023. "Reaffirming our commitment towards the growth of our nation"



The P.G. Department of Commerce, Berhampur University, celebrated 64th Income Tax Day 2023. "Reaffirming our commitment towards the growth of our nation" on 24.07.2023 to commemorate the

introduction of income tax in the country on the same day in 1860. The primary goal of the income tax system in India is to produce revenue for the government to pay for the country's development and welfare programs. In this regard, Dr. Maheswar Sethi, introduced the relevance of the day, followed by various deductions available for individual taxpayers. Dr. B.V. Rao discussed the transition from the old tax to the new tax regime. Mr. Sakti Ranjan Dash explained how the tax forms a fundamental component of the government's budget. Chandrika Prasad Das highlighted the need for income tax in India. All the students participated by adding their valuable points on the importance of income tax in India and its various dimensions.

Prof. Sukanta. K. Tripathy, Dept. of Physics, BU three research papers (co-authored) has got published in prestigious Journal of Plasmonics and Results in Optics.

# FACULTIES ZONE



Dr. Shesdev Patro, Assistant Professor, Dept. of Marine Sciences along with two research scholars of the Dept. has published a research paper in Zootaxa. In their research work, they discovered one more species of amphipod from West Bengal and interestingly they named it after their own university i.e. BU.

**Article**

**Zootaxa**  
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**Talorchestia buensis** sp. nov. (Senticaudata, Talitridae), a new species of amphipod from West Bengal, east coast of India

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**Abstract**

In coastal regions, Talitridae are found among decaying material in the supralittoral zone of sandy beach, mangroves and delta regions. Five genera and five species of the family Talitridae have been reported so far from Indian coastal waters. A new species of the amphipod genus *Talorchestia* Dana, 1852, *Talorchestia buensis* sp. nov. was collected from Kaldialahal Char, West Bengal, east coast of India. The species was collected from a sandy beach, beneath dead leaves. The new species can be distinguished from other described species of the genus by the presence of a double row of setae on the endopod of pereopod 2, the presence of more than 10 robust setae in each lobe of the telson, antenna 2 reaching more than half the body length, pereopod 7 longer than pereopod 6 and by the absence of a distal protuberance on the palm of male gnathopod 2. The present article increases the total number of world species in the genus to 26.

**Key words:** Amphipoda, *Talorchestia*, taxonomy, new species, beach hopper, India

**Introduction**

The beach hopper genus *Talorchestia* Dana, 1852, belongs to the subfamily Talitriinae of the family Talitridae. There are 25 world species currently included in the genus (WoRMS, 2023) and 14 species known to inhabit tropical subtropical regions (Lowery et al., 2017).

According to Lowery et al. (2017), the genus *Talorchestia* can be categorized into two groups, Group 1 with a distal protuberance on the palm of male gnathopod 2 (i.e. *Bandiera* Lowery, Springthorpe and Atman, 2017, *Z. sinhalensis* Okada, 1970, *Z. zeylanica* Dana, 1852, *Z. inornatissima* Harwell, 1980, *Z. zeyana* Lowery, Springthorpe and Atman, 2017, *Z. palawanensis* Morino & Miyamoto, 1984) and group 2 lacking a protuberance on the palm of male gnathopod 2 (i.e. *Brachy* Lowery & Springthorpe, 2009, *Z. daeguensis* Lowery & Springthorpe, 2015, *Z. alii* Lowery, Springthorpe and Atman, 2017, *Z. gracilis* Dana, 1852, *Z. mauritius* (Wolter, 1992), *Z. mauritius* Ohtman & Atman, 2007, *Z. garbin* Lowery & Montoni, 2015, *Z. nivalis* Lowery, Springthorpe and Atman, 2017 and *Z. ripidula* Lowery, Springthorpe and Atman, 2017).

*Talorchestia* differs from other genera of the subfamily Talitriinae (except *Silvorchestia* Miyamoto & Morino, 1999 and *Heterorchestia* Dang & Li, 2011) by having short first antenna, male paracelate gnathopod 1 with palmate lobes on the posterior margin of carpus and propodus, pereopod 5 with slender dactylus, not inflated, pereopod 1-2 without spear-shaped setae and pereopod 3 without robust setae on the outer margin. Genus *Silvorchestia* and *Favosorchestia* show similar character as *Talorchestia* but differ from the latter by few characters as described by Lowery et al. (2017).

In India, the genus is represented by three species, *Z. mauritius* reported from Chikka lagoon (Chilika, 1921) and south India (Kishinouye et al., 1908), *Z. alii* and *Z. talitrioides* reported from Lakshadweep Island (Tripathi et al., 2021). The present study reports a new species collected from West Bengal, India which belongs to the group 2 category (without protuberance on the palm of male gnathopod 2) of the genus *Talorchestia* as described above.

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**RESEARCH**

**Improved Surface Plasmon Effect in Ag-based SPR Biosensor with Graphene and WS<sub>2</sub>: An Approach Towards Low Cost Urine-Glucose Detection**

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**Abstract**

Gold and silver are the two suitable noble metals with wide implications in surface plasmon resonance (SPR) based sensors. Gold possesses a superior SPR phenomenon compared to silver, however, with extremely high costs. To resolve this problem, the current study proposes a new gold–silver SPR biosensor design employing silver as the noble metal for efficient detection of blood glucose using urine as the biomatrix. The proposed design employs two types of 2D materials such as graphene and nitrogen dithiolene (WS<sub>2</sub>) to enhance the sensitivity of the silver-based SPR biosensor. An investigation for design of a low-cost biosensor for urine glucose detection is done using the proposed configuration. The glucose concentration in the biomatrix ranges from 10 to 15 mg/dl (the normal person) and 0.425 mg/dl, 1.25 mg/dl, 2.5 mg/dl, 5 mg/dl, and 10 mg/dl (the diabetic person), with corresponding refractive indices of 1.395, 1.336, 1.333, 1.338, 1.341, and 1.342. The material's type, order, and thickness have been chosen through numerous case studies. It is worth noting that, with a 4-layer graphene (0.34 nm) and 4-layer WS<sub>2</sub> (0.8 nm), the proposed silver-based SPR biosensor shows improved sensitivity (238.86°/RIU) and figure of merit (48.9°/RIU) than its gold-based counterpart (sensitivity 150°/RIU). Finally, this study is also compared with similar reported literature. The proposed structure has potential to develop low-cost and efficient SPR-based biosensors (glucose sensors), with a substantial shift in resonance angle of SPR curves as shown in the present study.

**Keywords:** Surface plasmon resonance · Biosensor · Refractive index · Kretschmann configuration · Graphene · WS<sub>2</sub> · Reflectance · Gold film · Highly sensitive

**Introduction**

Among the many pervasive and intractable diseases of the present era of high-tech lifestyle, diabetes is the one that is currently the leading health concern on a global scale. Affecting an estimated 500 million individuals worldwide, the disease is still spiraling [1]. Diabetes is also becoming a concern at the pediatric level [2]. Though all types of diabetes are not curable, it is possible to bring them under control through regular testing and treatment. Nonetheless, invasive methods are still widely used for the detection of blood glucose levels, including both lab-grade and lab-based (domestic) testing [3]. However, it is a painful process, which sometimes put patients (especially children) into panic for frequent testing [4]. This leads to improper detection and diagnosis of diabetes and rises the daily patient volume. Therefore, there is always a strong need for developing non-invasive blood glucose testing techniques with low cost, to promote frequent testing among the patients irrespective of their age group and financial status [5].

Recently, surface plasmon resonance-based sensors have shown potential research interest in biomedical and other applications [6, 7]. Triggered by the coupling of photons and electrons, they are linked to the interactions of electromagnetic waves at the metal and dielectric interface [8, 9]. As

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# STUDENTS CORNER

**Dept. of J & MC**

Mr. Satya Prakash Nayak and Mr. Subhanjaya Pradhan, batch 2021-23 joined ETV BHARAT Ramoji film city Hyderabad. as a Trainee Content Editor.

**Dept. of Bio-tech**

Ms. Birupakhya Pradhan cracked NET JRF, and Namrata Biswal, Ritabina Ghosh, Krishnanand Pandey, Suryaprparap Sarangi qualified NET LS.

**Dept. of Political Science**

Mr. Rohan Mishra, Mr. Bhisma Nayak, Mr. Sanjaya Behera, Mr. Pralaya Mahanty, Mr. Bharat Bhusan Seth, Mr. Jainadatta Pattanayak cracked NET.

**Dept. of Botany**

Ms. Baishali Dora Batch 2019 has qualified for OPSC Civil services. Five students from the dept. has cracked CSIR NET JRF and two NET LS, 2023.

**Dept. of Mathematics**

Mr. Sudhananda Moharana, Dr. Ajit Kumar Sethi and Mr. Satya Ranjan Praadhan got the post of Assistant Professor under OPSC.

**Dept. of Chemistry**

Mr. Nagesh Kumar Behera, Ms. Archana Kumari Pradhan cleared CSIR-NET-JRF and Ms. Sagarika Patra cracked CSIR-NET-LS.

## CELEBRATION OF VAN MAHOTSAV WEEK BERHAMPUR UNIVERSITY



### ***Green Campus through Tree Plantation: National Service Scheme leads the initiative with slogan Each One, Plant One***

In commemoration of the Van Mahotsav, the National Service Scheme (NSS) of Berhampur University organized a tree plantation drive within the campus premises. The week-long event was inaugurated by University Vice-Chancellor Prof Geetanjali Dash, who planted saplings to mark the occasion. The Van Mahotsav aims to create a greener campus environment, with Vice-Chancellor Prof Geetanjali Dash urging every student and staff member to adopt a tree as their adopted tree. In a symbolic gesture, Honourable Vice-Chancellor Prof. Dash herself planted a sapling and adopted the same, setting an inspiring example for others to follow. The Vice-Chancellor advised every department's teaching and non-teaching staff to plant and embrace a sapling. Registrar Mr. Satchidananda Nayak emphasized the importance

of tree plantation and highlighted the benefits of Van Mahotsav. Prominent social activist and Tree lover Mr. Banmimali Pradhan was the chief guest. Pradhan planted saplings on the campus premises and encouraged everyone to consider trees as their mother and serve them. The program also witnessed the presence of Dr. Satish Naik, former District Program Officer of NSS, who attended as the guest of honour. The NSS has undertaken a comprehensive plan to plant large trees across the campus to create a green belt at Berhampur University. As part of this initiative, saplings were planted in the premises of Girls' Hostels and various Departments under the supervision of NSS Bureau Coordinator Dr. Jayant Kumar Panda, NSS Program Officer Mr. Sakti Ranjan Dash, Dr. Iqbal Ahmed Bhatt, and Ms. Alita Minj organised the event.



**Van Mahotsav Celebrated with zest at Berhampur University's Ladies Hostel Premises**

The NSS Units of Berhampur University organized a vibrant celebration of Van Mahotsav at the Ladies Hostel premises with a profound dedication to promoting environmental conservation and nurturing a greener campus. Honourable Vice-Chancellor Prof. Geetanjali Dash graced the occasion and took the lead in planting an Amla sapling, marking the initiation of a massive plantation drive.

The event witnessed the active participation of hostel inmates who enthusiastically planted 200 saplings inside the Chilika & Ansupa Ladies Hostel Premises. The initiative was a part of the university's mission to create a Herbal Garden within the campus, fostering a sustainable ecosystem. NSS Coordinator Dr. Jayanta Panda, Deputy Warden Dr. Sasmita Behera, and the Superintendents & Assistant Superintendents of Chilika and Ansupa Hostel, along with NSS Program Officer Sakti Ranjan Dash, Alita Minz, and Dr. Padmalochan Hembram, were present on the occasion. Their coordinated efforts ensured the smooth execution of the event.



**Kargil Victory Day  
Commemorated with Patriotic  
Fervor**

The National Service Scheme (NSS) unit of Berhampur University paid a heartfelt tribute to the valiant soldiers and commemorated Kargil Victory Day on the university School campus. The NSS organized a special event to instil patriotism and dedication to national service among school students, fostering a spirit of love for the motherland. Mr. Abhimanyu Sethi, a former soldier who actively participated in the Kargil War, was the chief guest. He shared gripping accounts of his experiences during the war and shed light on the success of the Indian



Army's Operation Vijay. Mr. Sethi passionately urged the students to support and consider serving the country by joining the armed forces.