Centurion University

Shaping Lives...
Empowering Communities...

A REPORT ON
RESEARCH CENTRES
2020-23

www.cutm.ac.in

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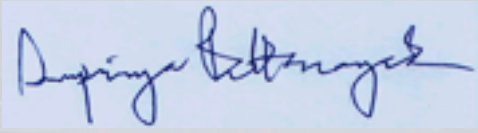
FOREWORD

Academic research plays an integral part in global development. The role of research in academic institutions is significant for its growth, development and sustainability. Centurion University of Technology and Management (CUTM) is focused on cutting edge research advancements that makes a difference through appropriate and relevant innovation.

The University has launched 22 research centres on 15th of August 2020 with an aim of promoting research with focus solely on innovations, incubation and entrepreneurship. Faculty members and research scholars are associated with these research centres and individual faculty has mandatory research goals. They are highly motivated to undertake research projects in thrust areas. The University has a well-defined policy framework for promotion of research which creates an encouraging environment for faculty members and ease of doing things. It provides seed money grants to faculty members to motivate them to undertake research activities and product innovation which can be subsequently patented and commercialized. These grants facilitate further research activities and provide an opportunity to apply grants to government and non-government funding agencies. CUTM consistently pursues for innovations and product development through frontline and applied research of global standards. This report collates and consolidates various research activities and partnerships relating to research, innovations and entrepreneurship. It also gives an insight to the well-equipped infrastructure, equipment and laboratory facilities, products, patents and research publications.



Prof. Supriya Pattanayak
Vice Chancellor
Centurion University of Technology & Management

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Introduction

CUTM is a multi-campus university. Each campus is endowed with well-equipped lab facilities, green houses, poly houses, tissue culture facilities and central instrumentation facilities. Besides such facilities, the University has an ideal system to house social enterprises as there are several social entrepreneurial outreach entities, all incubated in the University: Gram Tarang Employability Training Services (GTET), Urban Micro-Business Centre (UMBC), Gram Tarang Inclusive Development Services Pvt. Ltd. (GTIDS), Gram Tarang Foods (GTF), Gram Tarang Technologies Pvt. Ltd. (GT Tech) and Gram Tarang Vocational Education and Training (GTVET). All its outreach activities are centreed on its vision of 'Shaping Lives and Empowering Communities'. Such entities are extensively used for Management and Development related research.

The research centres were set up with an aim to promote academic research. The 22 research centres cover all departments and different research areas. Each research centre has mandatory research goals and targets and individual faculty members and research scholars are associated with a particular centre based on their area of research and interest. The University has built an ecosystem that includes and integrates communities, industries, entrepreneurs, and other education and research institutions.

The sustainable development goals (SDGs) of United Nations are directly or indirectly related to the access to energy, efficient use of energy and renewable energy resources to enable sustainability of our ecosystem. For example, The Centre for Waste to Wealth Management is attempting to make CUTM a zero-waste model campus. Similarly, Centre for Smart infrastructure aims at working on clean technology, smart grid, and automation using IoT.

The centre works on different solar livelihood projects and integration of automation for improving the quality of life through sustainable livelihood for rural areas.

Centres like Smart Agriculture are using precision agriculture using IoT based smart technological tools, smart farm machinery, machine learning applications in agriculture, protected horticulture with the aim to double farmer's income and building Entrepreneurship. The Agriculture Production Centre is working on Mushroom, Bio-Fertilizer, Bio-Pesticides, Spawn, Vermicomposting, Seed Processing, Seed Production, Lemon Grass, Dairy, Bee-keeping and Honey Production, Marigold Production, Commercial Nursery, Mentha, Tulsi and Fodder Production. This research Centre is also producing Paddy rice of RNR 15043 variety, which is called DiaFit Rice with low GI index of 51.6, good for diabetic patients.

Centres like Medical Diagnostics aim at providing Community based Health care facility. It also indulges itself in various outreach programs and campaigns in the local area. Social Impact Research, Sustainable Livelihoods, Natural Resource Management, Equity and Empowerment, Development Policy Research, FPO Development Projects and Educational Policies.

The Centre for Phyto pharma and Drug design are working on extraction of spices, oils and oleoresins using supercritical CO2. They are working in collaboration with Naturals for preparation of face cleansers and anti-ageing day cream by using the extracts of spices like turmeric, ginger, cinnamon etc. which is funded by the Spice Board, Govt. of India. The Plant tissue culture centre has a production unit which demonstrates small scale tissue culture raised banana plants and also aiming at producing Bamboo, Gerbera and other ornamental plants with an objective to get the recognition by Department of Biotechnology (DBT), Govt. of India. The Genetics and Genomics Centre is working on an externally funded project (SERB-DST, Govt. of India) to work on genome editing of vegetable crops towards disease resistance. The group is also working on gene sequencing of bacterial and fungal genomes using Nanopore sequencer.

Centres like Centre for Innovators and Entrepreneurs (CIE) has built an ecosystem that supports students and faculty with their start-ups by offering co-working space, common facilities centres, state-of-the-art workshops and laboratories.

Administrative Support

Interdisciplinary science research often requires collaboration between researchers from different disciplines, such as biology, physics, and engineering. To support such research, administrative support is required to help coordinate communication and collaboration between different research groups. This includes support for organizing interdisciplinary seminars, workshops, and conferences to bring researchers together and foster collaboration.

CUTM provides administrative support for interdisciplinary research. The university offers various research facilities and resources that support research in science and other disciplines. The requirements of administrative support include management and coordination of research activities; recruitment of faculty members and research staff; procurement of research equipment and supplies; management of research budgets; and monitoring of compliance with regulatory requirements.

Infrastructure is also an important consideration for interdisciplinary science research. Researchers often need access to shared laboratory spaces, as well as specialized equipment and instrumentation that may be too expensive or impractical for individual labs to purchase. The University often provides shared laboratory spaces and equipment that can be used by researchers from different disciplines. It provides room infrastructure with laboratories for experimental work; offices for researchers; meeting rooms for collaborations and presentations; and storage areas for research materials. It also provides equipment of high-end computing facilities; state-of-the-art laboratory equipment; specialized scientific instruments; access to databases and libraries; and equipment maintenance and repair services.

In addition to laboratory space and equipment, specialized computational resources and data storage facilities are also needed. The University provides access to high-performance computing clusters, cloud computing services, and data storage systems to support such research needs.

The various needs of research like funding for research projects, access to grant opportunities, collaboration with industry partners, professional development and training opportunities, and access to data and research samples are provided. In addition, support services such as access to specialized equipment, research databases, and technical expertise that can be helpful for interdisciplinary research projects are also provided. All such needs and requirements are fulfilled through the ERP facility of CUTM which caters to the needs of the research teams as per their request.

The University recognises the importance of interdisciplinary scientific research and supports research projects that involve collaboration across multiple disciplines. It provides administrative support, room infrastructure, equipment for researchers, funding, grant opportunities, and professional development and training opportunities. Additionally, the University encourages collaboration with industry partners and provides access to data and research samples to facilitate research in science and other disciplines.

Overall, it aims at facilitating collaboration and streamlining the administrative aspects of interdisciplinary research so that researchers can focus on their scientific goals.

Scope of Interdisciplinary Research

CUTM has several research centres that work together in a coordinated manner to achieve the institution's research goals. It has established research centres in various areas such as healthcare, education, livelihood, and social innovation. These research centres collaborate and work in conjunction with each other on various projects to achieve their objectives.

The University encourages the formation of cross-functional teams across its research centres. These teams bring together researchers from different disciplines and domains to work on projects that require expertise from multiple areas. This approach helps to leverage the strengths of each research centre and facilitates knowledge-sharing and innovation.

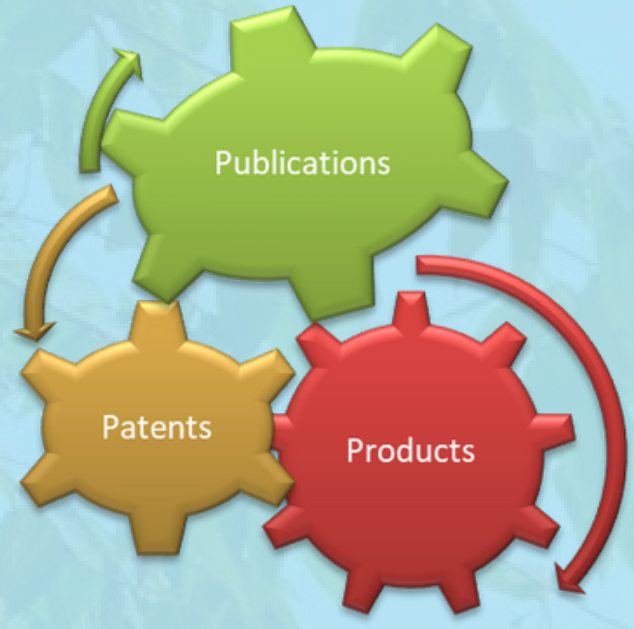
The research centres at CUTM frequently collaborate on projects to tackle complex problems. For example, the Centre for Data Science and the Centre for Smart Agriculture work together for solving Polyhouse Automation problems. There are several other examples to cite.

The research centres at CUTM share resources such as data, research facilities, and equipment. This approach helps to optimize the use of resources and enables researchers to conduct more comprehensive and impactful research. The research centres at University frequently publish joint research papers and reports. This approach helps to disseminate research findings to a wider audience and increases the visibility of the university's research.

In summary, the research centres at CUTM work together through cross-functional teams, collaborative projects, interdisciplinary research, shared resources, and joint publications. These approaches facilitate knowledge-sharing, innovation, and the achievement of the university's research goals.

Expected Outcomes:

- Technology centres should bring out patents and publications
- Domain application centres should develop products; generate commercialisation and consulting practice revenue apart from publications
- Faculty can choose either of those centres, i.e., focus on technology development or focus on applications and products


Publications
Patents
Products


SUSTAINABLE DEVELOPMENT GOALS
1 NO POVERTY
2 ZERO HUNGER
3 GOOD HEALTH AND WELL-BEING
4 QUALITY EDUCATION
5 GENDER EQUALITY
6 CLEAN WATER AND SANITATION
7 AFFORDABLE AND CLEAN ENERGY
8 DECENT WORK AND ECONOMIC GROWTH
9 INDUSTRY, INNOVATION AND INFRASTRUCTURE
10 REDUCED INEQUALITIES
11 SUSTAINABLE CITIES AND COMMUNITIES
12 RESPONSIBLE CONSUMPTION AND PRODUCTION
13 CLIMATE ACTION
14 LIFE BELOW WATER
15 LIFE ON LAND
16 PEACE, JUSTICE AND STRONG INSTITUTIONS
17 PARTNERSHIPS FOR THE GOALS

Promotion of Research and Facilities

The University has a well-defined policy for promoting, encouraging and monitoring research activities in all its campuses. It provides adequate infrastructure and state-of-the-art laboratories to promote advanced research. The University has created a conducive environment for smooth implementation of the research projects and it encourages basic, applied, and inter-disciplinary researches in collaboration with various national and international agencies.

LIST OF RESEARCH CENTRES

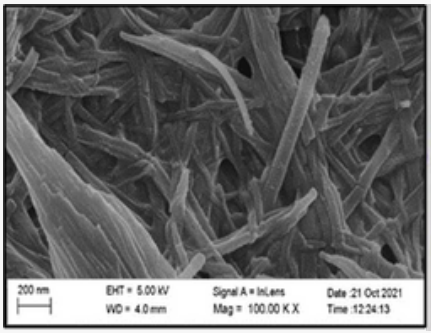
- Centre for Computational Mathematics
- Centre for EduTech & SkillsTech
- Centre for Waste to Wealth Management
- Centre for Medical Diagnostics
- Centre for Smart Engineering Applications
- Centre for Design & Manufacturing
- Centre for Aquaculture and Fish Processing Technology
- Centre for FinTech
- Centre for Governance and Sustainable Societies
- Centre for Agriculture Production
- Centre for Smart Agriculture
- Centre for Smart Infrastructure
- Centre for Data Science and Machine Learning
- Centre for Phytopharma
- Centre for Genetics and Genomics
- Centre for New Materials Applications
- Centre for Innovation and Entrepreneurship
- Centre for Lasers
- Centre for Communication Technologies
- Centre for Drug Design
- Centre for Plant Tissue Culture & Vegetative Propagation
- Centre for Drones

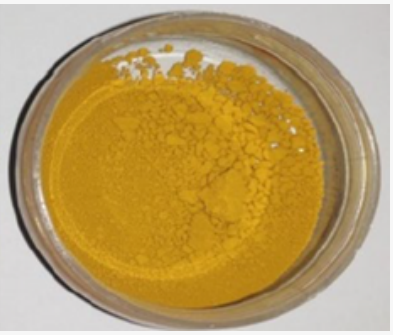
Centre for New Materials

The Centre for new material focuses on research and development of new material with enhanced properties. The Graphene, polymer, Perovskites (ABO3 type, double and layered), nanomaterials and alloys are the focus materials of the centre. The targeted application areas are water purification, agriculture, photovoltaic cell, super capacitors, thermistors, fluorometric sensors, green synthesis and magnetic refrigeration. The nanomaterial like nanocurcumin, ZnO & TiO2 are developed for application in agriculture in collaboration with centre for Smart agriculture and centre for Phytopharma.

Nanomaterial synthesis

Ag nanocomposite for water purification





Nanocurcumin

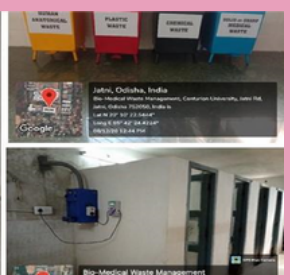
Centre for Waste to Wealth Management

The centre for waste to wealth management aims to explore and utilize different wastes and convert them into value added products. Furthermore, the centre also creates awareness in the campus and community regarding different waste management. The centre focuses on making value added products from various types of waste such as making file cover, diary, note pads, paper bags from waste paper generated in campus. In an attempt to utilize the in-house waste, the research centre also working on producing bio gas from cow dung, compost from kitchen and vegetables waste. Efforts are being made to make paver blocks and liquid fuels from single use plastic in order to minimize plastic pollution.

Sewage Treatment Plant (STP)



Bio compost & bio gas unit

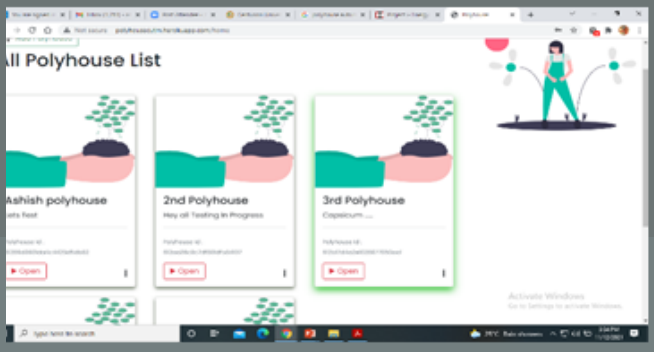


Bio medical waste management unit

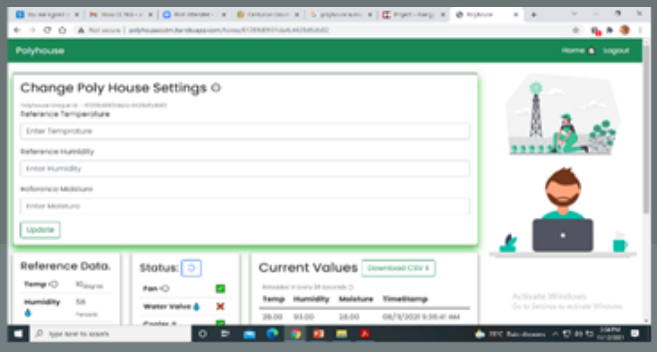
Vermicompost Unit

Centre for Smart Infrastructure

The Centre for Smart infrastructure aims at working on clean technology, smart grid, and automation using IoT. The centre works on different solar livelihood projects and integration of automation for improving the quality of life through sustainable livelihood for rural areas. The centre is currently working on polyhouse automation projects, microgrids, and different solar livelihood projects. The centre is providing different skill and certificate courses on solar PV installation, solar lighting technician, PV microgrid, polyhouse automation and surya mitra training programme under SCJG. The centre has industry partners with Selco India, Schneider India, Dassault System and Gram Tarang Technology.



Polyhouse Automation



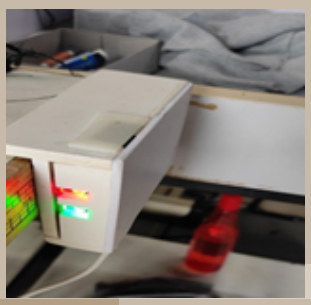
Polyhouse Automation

Solar Pan

E Livelihood Products

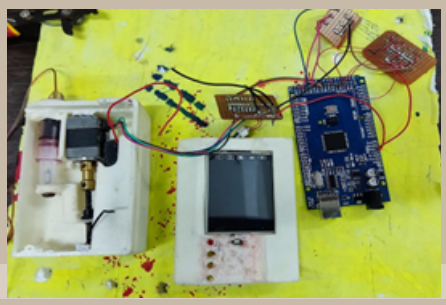
Centre for Smart Engineering Applications

The Centre is involved in various research activities related to ECU for EV, IIoT for Garments manufacturing and Mining Industries, Shakti Processor (RISC-V) Design, and Insulin Pumps Prototype Development, which leads to Publications, Products, and Patents. The Centre uses various simulation tools like Matlab, Cadance, Xilinx, HFSS, Ansys, Keil µVision, Multisim, Eagle. The Centre for Smart Engineering Application also encourages Research Scholars for Post Graduate and Doctoral Degree in Signal Processing, Embedded System, VLSI Design, IIoT, and Electric Vehicles.



ECU for E-Rickshaw

IIoT Based Garment Production Line



Insulin Pump Prototype Development

Centre for Communication Technologies

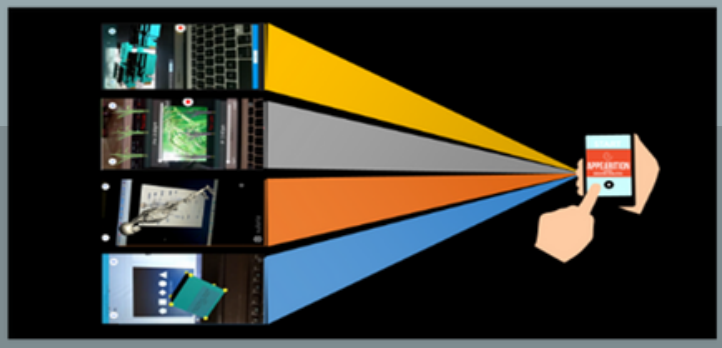
The Centre focuses on research and development of antennas for application in the medical, military, day-to-day applications, and 5G systems. The targeted application areas are wearable antenna, antennas for 5G/6G and Study of 5G communication technologies. The focus of the research CENTRE encompasses the sustainable development goal number, 9 (Industry, Innovation and Infrastructure). The research centre collaborates with other in-house research centres and external Institutes for enriching the research capabilities.

Photographs of Radiating Patch & Ground Plane

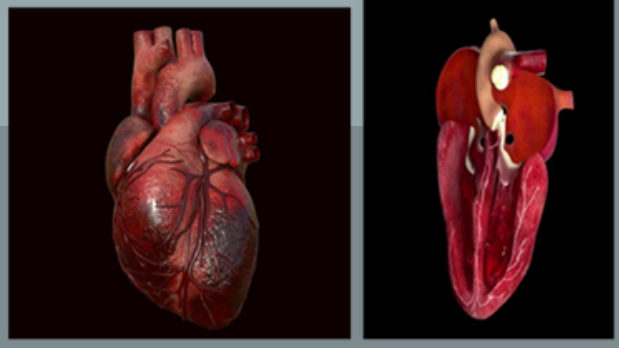
Photograph of H-Shaped wearable Antenna

Centre for EduTech and SkillsTech

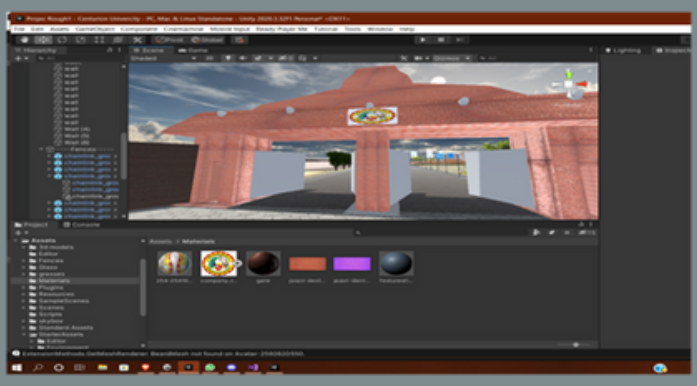
The Centre for EduTech and SkillsTech is dedicated to taking the technological skill sets to the students, teachers and educators whether in classrooms or at home, enhancing their skills in communication, collaboration and the overall quality of education. Technology is here to stay for a long time personalising the educational experiences and making learning accessible 24/7. The centre focuses on bringing in new horizons of learning. When the world is slowly moving to bitcoins and virtual reality, the centre is making new spaces in the fields of blockchain and metaverse. Immersive learning, the creation of new online courses, a quality check of the certificate courses, and facilitating paperless exams have been a few areas where the centre has played a key role.

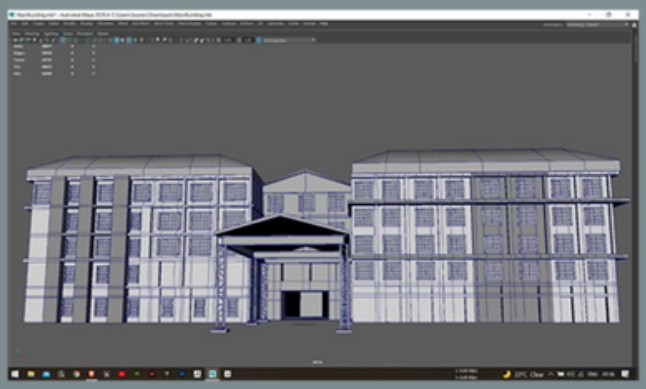


Centurion Appearition Pilot Project (AR & VR)



3D Game Art and Graphic Design

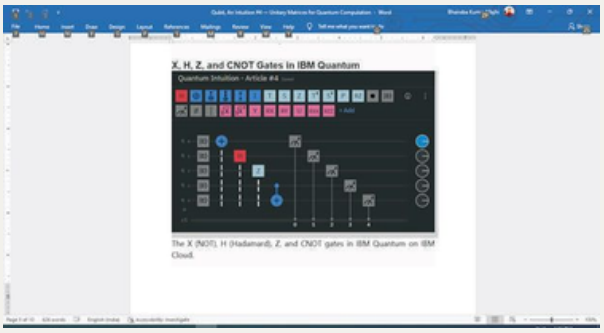




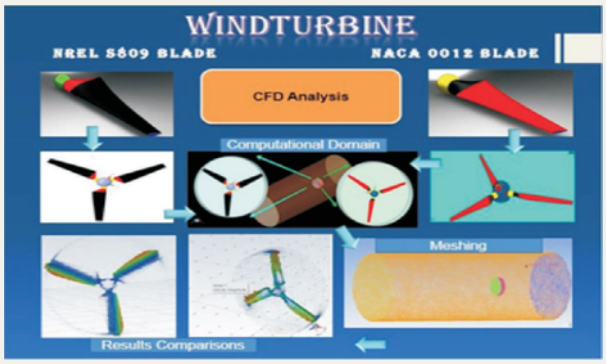
Build a University Campus on Unity Engine and Connect through the Metaverse

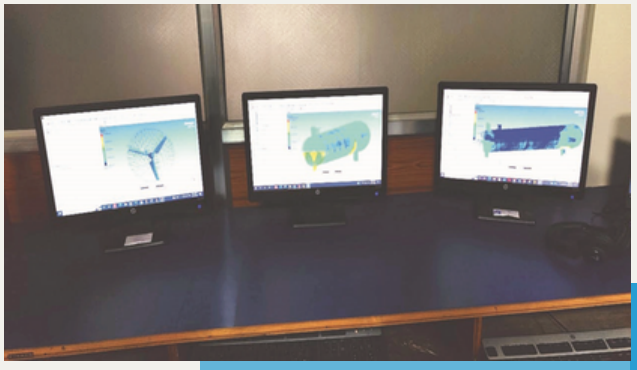
Centre for Computational Mathematics

Computational mathematics is a broad multidisciplinary and integrative area including a variety of applications in science, engineering, medical technology where computing plays a central and essential role. It plays a vital role in bridging the gap between the Academia, R&D and Industry sectors as the focus is more on computational fields in the present scenario. Computation reduces the engineering testing costs, product-to-market time and costs, provides comprehensive data which are not easily obtainable from experimental tests. Computational techniques easily complement the experimental and theoretical techniques in solving the problems with high complexity. Keeping in view the latest trends of Industry with regard to computation, the centre focuses on three major computational areas such as Computational Fluid Dynamics (CFD), High Performance Computing (HPC) and Quantum Computing (QC).



Quantum Computing





Computational Fluid Dynamics Analysis

Centre for Medical Diagnostics

The Centre for Medical Diagnostics aims at providing Community based Health care facility, it also indulges itself in various outreach programs and campaigns in the local area. Community Diagnostic Centre (Registration No. 38/2019/Khordha), the diagnostic service provider of the Centre offers a range of diagnostic tests for monitoring and screening of health conditions of the people of local community at subsidized rates. Several health camps have been conducted by the Centre in collaborations with local or global health institutions to improve health & wellbeing outcomes. The Centre provides cutting edge laboratory facilities in diagnostics sector, were in the students are trained to perform pathological investigations, radiological findings, optometry, emergency medicine care, physiotherapy training are also provided to the students.

Health screening camps in the local community

Centre for Aquaculture and Fish Processing Technology

The Centre for Aquaculture and Fish Processing Technology aims to develop and establish various aquaculture technologies and value-added fish products. It focuses on enhancing the fish production through sustainable aquaculture technologies viz. Aquaponics, Bio floc Technology, Ornamental Fish Farming, Recirculatory Aquaculture System and Integrated Culture System. Moreover, the centre is also engaged in enhancing the skills of students and farmers in developing different value-added fish products (fish cutlet, dry-salted fish, shrimp pickle, fish sausage etc.). The Centre is currently working on the development of Fish Hatching Unit, Recirculatory Aquaculture System and Fish rearing ponds.

Excavation of land for AS

Mapping of land for pond

Excavation of land for Chinese Circular hatchery

Picking of meat from fish

Centre for Agricultural Production

The Centre for Agriculture Production is mainly focusses on production and technology adaption of various research units. The research units in this Research centre are Mushroom, Bio-Fertilizer, Bio-Pesticides, Spawn, Vermicomposting, Seed Processing, Seed Production, Lemon Grass, Dairy, Bee-keeping and Honey Production, Marigold Production, Commercial Nursery, Mentha, Tulsi and Fodder Production. This research Centre is also producing Paddy rice of RNR 15043 variety, which is called DaiFit Rice with low GI index of 51.6, good for diabetic patients. The Products from this research centre are Milk, Panneer, Khova, Curd, Bakery Cakes and Biscuits, paddy straw mushrooms, Oyster mushrooms, vermicomost, liquid bio-fertilizer like Azotobacter, Rhizobium, Pseudomonas, Vegetable seed like Tomato, Brinjal, Mentha and Tulsi, Marigold flowers for extraction of oil with CO_2 extraction, lemon grass etc.

Mushroom cultivation **Liquid bio-fertilizer**

Centre for Smart Agriculture

RC for Smart Agriculture is involved in the research and application of smart tools in precision agriculture. The RC focuses on protected cultivation of gerbera and Dutch rose in IOT-based automated greenhouse; precision management of low GI rice with Paddy Predict and Kalgudi app and use ofUAV for crop health monitoring and management; soilless culture, hydroponics, and aeroponics of exotic crops such as lettuce, pakchoi, kale, broccoli, basil, Chinese cabbage under controlled environment; efficient use of water through micro-irrigation and mulching; application of various models for water management and yield estimation.

Colored capsicum & parthenocarpic cucumber under protected cultivation.

Centre for Genetics and Genomics

The Centre for Genetics and Genomics aims at investigating gene functions and inculcating the desired traits in the breeding programs and generating plants with modified traits that confer resistance to biotic and abiotic stresses. The centre focuses on improving traits in crops and vegetables and make them climate resilient by using advanced molecular breeding tools. It also focuses on giving hands-on-training to students on molecular biology, plant tissue culture and genetic engineering techniques. The centre is working on a SERB, DST, Govt. of India funded project to work on vegetable crops towards disease resistance. It is also working on a start-up grant project to identify candidate effectors from the Indian brown plant hopper (BPH) Biotype 4 via comparative transcriptomics and proteomics approach funded by SERB, DST, Govt. of India. The group is actively involved in whole genome and metagenome sequencing and data analysis.

Plant DNA extraction & Gel Electrophoresis.

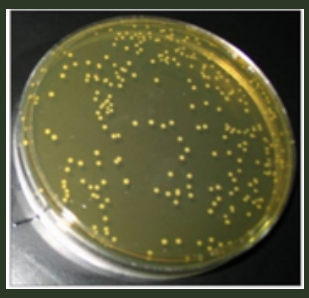
Library preparation & DNA sequencing through OXFORD NANOPORE SEQUENCER.

Centre for Plant Tissue Culture and Vegetative Propagation

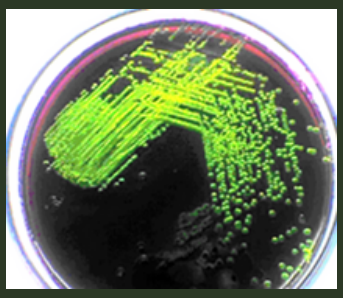
Micropropagation of banana, standardization of micropropagation protocol of chrysanthemum, and vegetative propagation of ornamental plants are some of the major activities of the centre. The laboratory works to produce healthy seedlings free from pathogens and uniformity, and aims to promote academics, research and training for skill development, professional excellence, and productivity at industrial sectors for an ultimate benefit to the tribal farmers, rural society, and entrepreneurs.

Centre for Phytopharma

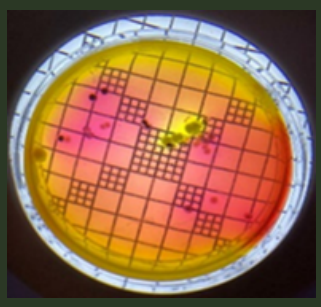
The Phytopharma Research centre has various focus areas such as Phytochemical analysis (Antioxidants, Biochemical Constituents) of different Medicinal Plants, Essential oil extractions, Implications of Phytochemicals on human Physiological Disorders, Extraction and Purification of bioactive compounds from plants, Prebiotics and Probiotics. The members of this research centre are from diverse fields, such as chemistry, nutraceuticals, agriculture and dairy technology. There are also domain programs and skill courses offered to students where they can have hand-on experience on the above-mentioned areas. A couple of funded projects also being carried out in the centre.



Growth of Lactobacillus species from fermented milk samples in MRS Agar plate



Greenish metallic sheen of E. coli in EMB agar plates isolated from spoiled milk samples



Staining photograph of E. coli

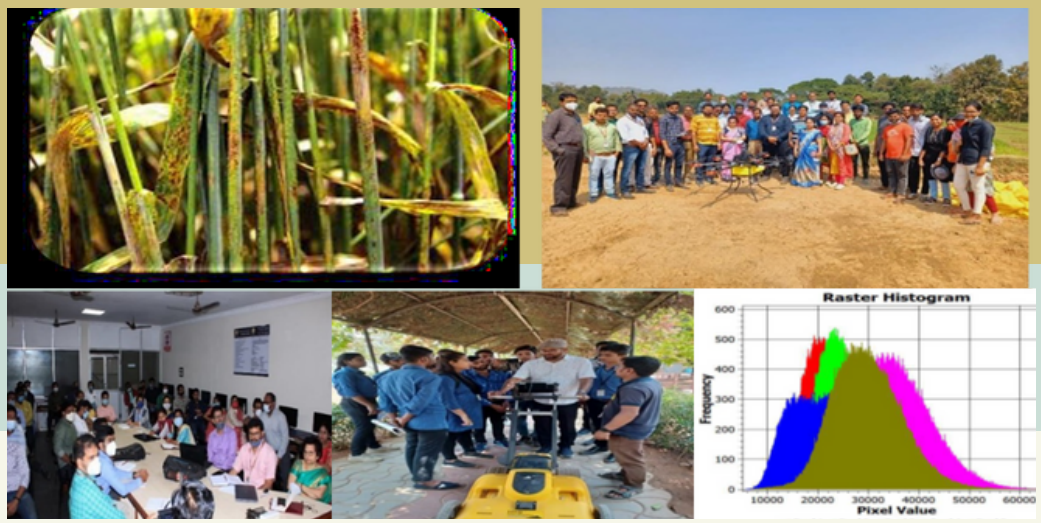
Day cream and cleanser

Centre for Drug Design

The centre consists of a group of enthusiastic and experienced faculty members actively pursuing collaborative research with in academic community as well as with industrial partners both in India and abroad. The centre comprises of 60 no of faculties from different branches of applied science like Pharmacy, Zoology, Botany, Forensic Science. The members are actively involved in discovery and synthesize of New Chemical Entities (NCEs) through In-silico, in-vitro and in-vivo approach from natural resources to fight against life threatening infectious and non-infectious diseases by doing interdisciplinary research.

Centre for Data Science and Machine Learning

Machine learning is the science of getting computers to act without being explicitly programmed. The goal of Centre for Data Science and Machine Learning is to build systems and algorithms to extract knowledge, find patterns, generate insights and predictions from diverse data for various applications and visualization. The centre conducts survey research, qualitative data collection for all type of structured and un- structured data i.e. text, multimedia, image, video, multispectral and hyperspectral and do the data analysis like prediction, classification, clustering to solve the real life problems.



Pest detection and Drone Image Analysis

Centre for Innovators and Entrepreneurs

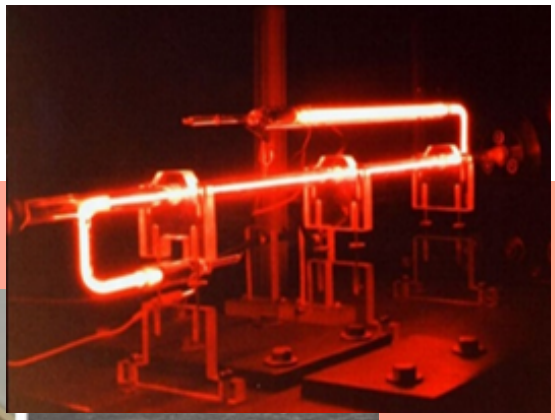
Centre of Innovators and Entrepreneurs (CIE) aims to inculcate and channelize both 'business acumen' and 'entrepreneurial skills' among the youth to develop a troupe of young entrepreneurs in the coming days. Developing an innovative mindset and entrepreneurial abilities among the educated youth is both a big challenge as well a big opportunity in the current economic situation. CIE is determined to develop young entrepreneurs by providing them necessary skills, trainings, proper guidance and motivation.

LIST OF STARTUPS INCUBATED WITH CIE_CUTM-GTET

Centurion Fab	Centurion Mush	Blockcation Pvt. Ltd.
Centurion WoodWorks	Centurion Seeds	eVArt
Gram Tarang Garments	Centurion Green Feeds	Susmita Enterprisers
Gram Tarang Transformers	Futurator India Pvt.ltd.	ODESI HANDLOOMS AND HANDICRAFTS PRIVATE LIMITED
Centurion MachTech	SKYYRIDER AUTOMATIVE PVT LTD	Aussie Fashions
Centurion Gram Sanjeevani	SKYYRIDER ELECTRIC Pvt Ltd	Centurion Coffee Connect
Susmita Enterprises	LIKHAN Ecowriting Pvt Ltd	Choudhury Consulting
Centurion Crafts	Sangam Designs	
Centurion Repairs	Zola India	
Centurion Wonderwood	Familin	
Centurion VR	Beverage Bees	
Centurion Pavers	Kalinga Fresh	
Centurion Renewables	VATSALYA WELLNESS PVT. LTD.	
Centurion Dairy	Hids Technology Pvt. Ltd	
Centurion Compost	GRAM TARANG TECHNICAL VOCATIONAL TRAINING SERVISES PVT. LTD. (GTVET)	

Centre for Lasers

The prime focus of the centre is to do research related to applications of Laser in various industries and also to develop prototypes using laser. Apart from doing research work the members work towards developing interest in students and enabling them to explore various instrumentations in Laser applications. These are done through skill courses and summer internships offered by the centre. The research centre collaborates with other in-house research centres and external Institutes for these activities.



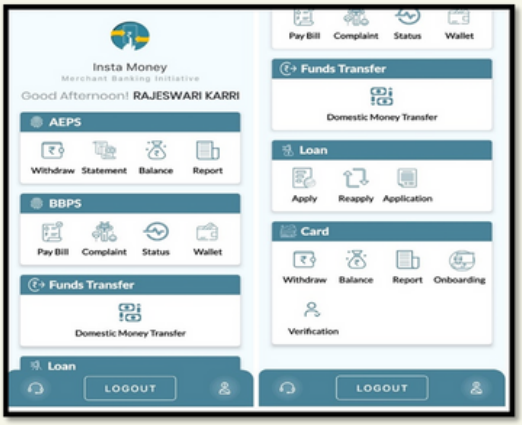
DIY Laser lab

Centre for Governance and Sustainable societies

The Centre for Governance and Sustainable Societies focusses on carrying out research to incorporate sustainable development goals in our institute and also to promote awareness regarding sustainable development goals among all the stake holders. For achieving this, the centre focuses on capacity building of the members and students through conferences, webinars, seminars, and exposure visits; on brainstorming sessions and workshops for designing interventions. It carries out consultancy projects, academic research to create a sustainable society.

Centre for Fintech

The centre for Fintech aims to create versatile and agile environments for learning through technology and skills. The mission of the centre is to disseminate technology and skills to connect, collaborate and innovate to improve teaching and learning. Some of the focus areas of the centre are InstaMoney includes AEPS, Fund Transfer and Card transactions, IMPS / NEFT / RTGS, ·QR Based Payments, Digi Pay and Mutual Funds Distributor etc.

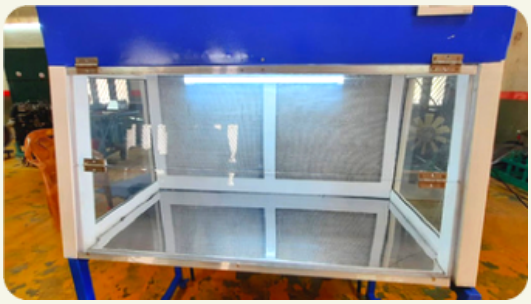


InstaMoney Dash Board

Customer Enrollment

Centre for Design and Manufacturing

Centre for Design and Manufacturing is working on converting concepts and laboratory models into real-time products ready to be launched into the open market. It has the in-house production capability to manufacture power distribution transformers, and CNC Machined components for the aerospace and automotive industry. E-Vehicle manufacturing, Apparel making, wooden furniture making, FRP product making, 3 D Printing, welding and fabrication. In the last 2 years, the clientele includes many industries and organizations of national and international repute like HAL, ISRO, BHEL, INDIAN RAILWAYS and ALIMCO, etc.



Laminar Airflow

E-Vehicle designs

Centre for Drones

The Research Centre (RC) for Drones was established in March 2023 to develop the latest, cost-effective, and efficient drone technology and its application in manufacturing customized solutions for land planning and mapping, vegetation imaging, and infrastructural inspections for Agriculture and other sectors. The centre encourages a four-pronged approach to innovations and research in MAST (Manufacturing, Application, Service, and Training) areas related to Drones. The RC collaborates with Gram Tarang Inclusive Development Services (industrial partner) for delivering on its' MAST goals.

Model Name: Snap-M
Manufacturer: CD Space
Use of Drone: Ariel Mapping
Type Certified (Y/N): Y

Awareness and Training program for farmers of the Gajapati district on modern agriculture practices and the use of agricultural "Spraying" drones for the judicious use of harmful agrochemicals.

Products :

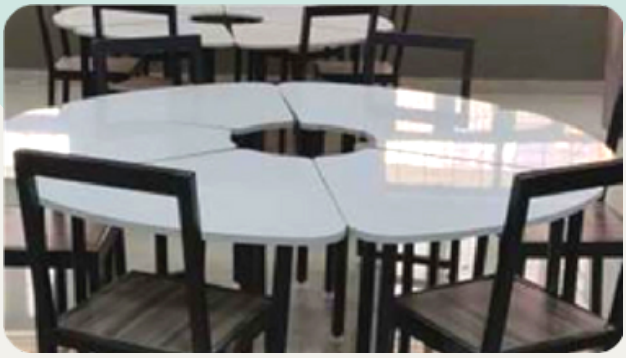
Products from Paper and Cloth Waste

Day cream and Cleansing Gel

Production Labs :

Transformer Lab

Wood Engineering



CNC Products

Production Labs :

ISRO Products

E-vehicle Products

Production Labs :

Laminar Flow Apparatus Making Products

3D Printing

Apparel Making

Externally funded projects:

- Study of Complete and Incomplete fusion reaction using loosely bound projectiles with medium mass Nuclei": Funding agency: SERB, DST, Govt of India. Funding amount: ~ 21 lakhs (Sanctioned).

- Affordable and efficacious skincare products based on natural spice extracts obtained from super critical CO2 extraction process Funding Agency: Spices board of India, Funding amount: Rs. 33,500,00/-, Project Investigator: Preetha Bhadra, Co-PI(s): Rosy Mallik, Pradipta Banerjee (ongoing).
- Development of recoverable and reusable heterogeneous Cellulose Nanocrystal (CNC) supported organocatalysts. DST-SERB ('Teachers Associateship for Research Excellence'). Funding amount: Rs. 18,000,00/- Project Investigator: Rosy Mallik(ongoing).

- Women and Domestic Violence During Times of COVID-19: Insights from Odisha. Funding Agency-ICSSR, Budget Approved: Rs. 280000/ Project Coordinators – Smita Mishra Panda and Supriya Pattanayak.

- Sustainable Entrepreneurship and Skill Integrated Education: Funding Agency- The Norwegian Centre for International Cooperation in Education. Total Budget - 1, 51 Crores, Project Coordinator – Smita Mishra Panda (ongoing)
- Engineering anthracnose resistance in chili pepper (Capsicum annum L.) using a single transcript CRISPR/Cas9 genome editing system. Funding agency: SERB, DST, Govt of India. Funding amount: ~ 30 lakhs. (Sanctioned).

- Identification and characterization of candidate effectors from Indian brown planthopper (Nilaparvata lugens) biotype. Funding agency: SERB, DST, Govt of India. Funding amount: ~ 27 lakhs. (Sanctioned).

- Genome-wide haplotype analysis for sink strength associated genes in rice. Funding agency. DST-SERB ('Teachers Associateship for Research Excellence'). Funding amount: 61 lakhs (Sanctioned).

Patents:

Patent no.	Title	Year of award
201931004151	Robotic Service System For Railway Coaches (Swab Railways)	2020
201931032613	Coriander Extract For Bone Cancer	2020
201931032614	Syzygium Aromaticum Extracts For Ovarian Cancer	2020
201931032615	Methi Extract For Liver Cancer	2020
201931032616	Bacopa Monnieri Extracts For Lung Cancer	2020
201931041144	Solar Sugarcane Juicer With Customized Cooling And Additive Dosage Design	2020
201931045677	Automatic Fault Control System Integrated 3d Printer	2020
201931049814	A Device For Detection Of Food Toxins	2020
201931051679	Bio-Gas Cylinder Monitoring And Replacing System In Mobile Bio-Toilets	2020
201931054080	Terminalia Chebula Extract Composition For Jaundice	2020
201941032262	Nanoparticles For Single Cylinder Spark Ignition Engine	2020
202031024943	A Bio-Pesticide Composition Based On Peppermint Extract And Its Preparation Method Thereof	2020
202031024944	A Biopesticide Composition Based On Bael Extract And Its Preparation Method Thereof	2020
202031024945	Cumin Extract Based Biopesticide Composition	2020
202031024946	Methi Extract Based Biopesticide Composition	2020
202031027644	Extraction Of Bioactive Principles From Oecophylla Smaragdina Based Antibacterial Composition	2020
202031027645	Extraction Of Bioactive Principles From Oecophylla Smaragdina Based Anticancer Composition	2020
202031027646	Extraction Of Bioactive Principles From Oecophylla Smaragdina Based Anti-Fungal Composition	2020
202031027647	Extraction Of Bioactive Principles From Oecophylla Smaragdina Based Multi Targeting Anti-Sars Composition	2020
202031027660	Compact Semi-Automatic Paper Pen And Pencil Making Machine	2020
202031027661	Extraction Of Bioactive Principles From Oecophylla Smaragdina Based Anti-Diabetic Composition	2020
202031035660	Multi-Level Security And Detection System To Avert Elephant Accidents At Railway Tracks	2020
202031035686	Automated Portable Diagnostic System And Method For The Patients In Covid Hospitals	2020
202031039046	Method And Automated Safety Equipment For Quick Detection Of Biological Events Of Hospitalized Patents For Covid Thereof.	2020
202031048523	System And Method For Health Care Data Processing Through Lot By Using Block Chain Technology	2020
202041052200 A	Herbal Cake Composition For Gastritis And Preparation Method For The Same	2020
202141010684 A	Artificial Intelligence Based Smart Touchless Medicine Dispensing System	2021
2021102320	Soil Fertility In Vermicomposting Prediction Utilizing Wca Based Deep Cnn-Model For The Agricultural-Domain	2021
2020103242	Prevention Of Food Harmfulness From Production To Customer For Centralized Kitchen Facility Using Iot	2021
2021100000	A Method To Measure The Air Pollution Impact On Terrestrial And Natural Vegetation In Urban Locations	2021
2021100002	Technique To Gis Modelling Of Water Bodies By Mapping Riparian Vegetation Along The Shore	2021
202141004378 A	Eclipta Alba Based Composition For Haemorrhoids And Its Preparation Method Thereof	2021

Patents:

Patent no.	Title	Year of award
202141018335 A	Artificial Intelligence Based Animal Detection And Identification For Protection Of Field Crops	2021
202131001373 A	Smart Attendance And Body Temperature Monitoring System At Working Site	2021
202131028359 A	Methods And Systems For Agricultural Work By Smart Agriculture Field Boundary With Ai & Ict	2021
202141033481 A	Intelligent System For Satellite Communication From Mobile Devices To Public Land Mobile Networks Using Iot & Method Thereof	2021
2021104155	Method For Molecular Mapping And Developing Diagnostic Markers For Detecting Anthracnose Resistance In Chili Pepper	2021
2021104564	Smart Framework For Providing Privacy and Protection In Block Chain Based Private Transactions Using Cloud Computing Approach	2021
202131042186	Hybrid Statistical Model To Distributed Server on Cloud Computing Environment	2021
2021105189	A Method For Creating Novel Anthracnose Resistant Pepper Plants Using Genome Modification Technique	2021
202141049308 A	A System For Encoding And Decoding Data Using Cloud Computing And Method Thereof	2021
202131050687	A System Based on Deep Learning Three-Dimensional Pipeline Reconstruction and Method Thereof	2021
2021103371	Solar Assisted Iot Based Automatic Vertical Medicinal Plant Cultivation Of Critically Endangered Plant Nardostachys Jatamansi	2022
2021103884	Epileptic Seizure Detection and Classification Using HOG feature based MSCA-ELM Model and Embedded Prototype Development	2022
2021103987	A Rpms System For Power Management And Power Quality Improvement Of Isolated Hybrid Microgrid	2022
2021104634	Prototype for Detection and Classification of Brain Tumor using CNN feature-based LLRBFNN Model	2022
202241021062	Launching System and Method for Bridge Construction Using Pre-Stressed Structures	2022
2021/10561	A System for synthesizing Zno-Znfe204 Nanoparticles and Investigating their role in the waste water Remediation	2022
2021/10562	A System For Enhancing Plant Immunity And Plant Growth By Using Fabricated Zno–Znfe2o4 Nanoparticles	2022
202231026515	Portable Photovoltaic Mounting Assembly for Agrivoltaics	2022
202231039408	Polycentric Knee Joint for Improved Stability and Flexion	2022
202131004379	Synthesis of Aminocyanopyridines Using Urease Mimetics	2022
202231056036	3-(2-Amino-5-hexylphenyl) Propanoic Acid for Treatment of Severe Acute Respiratory Syndrome (SARS) Coronavirus 2	2022
202231056037	3-(5-Hexyl-2-hydroxyphenyl) Propanoic Acid for Treatment of Severe Acute Respiratory Syndrome (SARS) Coronavirus 2	2022
202231056038	3-(5-Hexyl-2-Methylphenyl) Propanoic Acid for Treatment of Severe Acute Respiratory Syndrome (SARS) Coronavirus 2	2022

Copyrights:

Copyright no.	Title	Year of award
8504/2020-CO/L	Community Action Learning Program (CALP)	2020
8513/2020-CO/L	Ratcheting Pedagogy for FDP	2020
8574/2020-CO/L	Go to Market Lab and Its Practices	2020
8505/2020-CO/L	Learning Reflection Record (LLR): A Multipurpose Tool to Students Success	2020
8509/2020-CO/L	Paddy Predict APP	2020
8511/2020-CO/L	Money Instant Transaction (MINT)	2020
8512/2020-CO/L	The Five Stages Matrix of Level of Empowerment of SHGs	2020

Design patents:

Design no.	Title	Year of award
330537-001	Design Accepted and Published, Journal No is 11/2021 and Journal Date is 12/03/2021	2020
330538-001	Design Accepted and Published, Journal No is 26/2021 and Journal Date is 25/06/2021	2020

Research Publications

Research Articles	Book chapters	Book Published
2168	535	125

- Singh P, Sahoo RK, Bulle M,Gupta KJ (2020) An Efficient Method of Mitochondrial DNA Isolation from Vigna radiata for Genomic Studies Legume Genomics: Methods and Protocols. Methods in Molecular Biology. 2107, 305-315.
- A R Dash, Panda, A.K., Lenka, R.K. and Patel, R, Performance analysis of a multilevel inverter based shunt active filter with RT-EMD control technique under ideal and non-ideal supply voltage conditions. IET Gener. Transm. Distrib., 13: 4037-4048. https://doi.org/10.1049/iet-gtd.2018.7060 (SCI-IF-3.80).
- A R Dash, Panda, AK, Lenka, RK. Implementation of EMD-based control algorithm for a cascaded multilevel inverter–based shunt active filter. Int Trans Electr Energ Syst. 2019;e12087. https://doi.org/10.1002/2050-7038.12087 (SCI-IF-2.86).
- A R Dash, Panda, AK, Patel, R, Penthia, T. Design and implementation of a cascaded transformer coupled multilevel inverter-based shunt active filter under different grid voltage conditions. Int Trans Electr Energ Syst. 2019; 29:e2728. https://doi.org/10.1002/etep.2728 (SCI-IF-2.86).
- Sharma R, Mahanty B, Mishra R, Joshi RK. Genome wide identification and expression analysis of pepper C 2 H 2 zinc finger transcription factors in response to anthracnose pathogen Colletotrichum truncatum. 3 Biotech. ; 11(3):118.
- Mishra, R., Mohanty, J.N., Mahanty, B. et al. A single transcript CRISPR/Cas9 mediated mutagenesis of CaERF28 confers anthracnose resistance in chilli pepper (Capsicum annuum L.). Planta 254, 5 (2021). https://doi.org/10.1007/s00425-021-03660-x
- Meher, D., Samantra, K., Behera, A (2020) Folk Rice: Geneticstorehouse for bio fortification. International journal of Chemical studies. 18, 13-16. doi:10.2271/chemi.2020.
- Dhali S, Pradhan M, Sahoo RK, Pradhan C, Mohanty S (2020) Growth and Biochemical Variations in Macrotyloma Uniflorum Madhu under Chromium Stress. Indian Journal of Agricultural Research. 54, 1-7.

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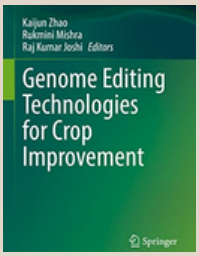
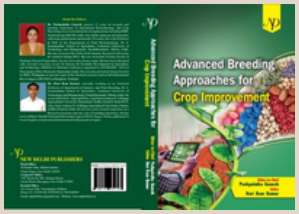
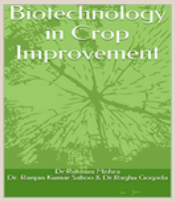
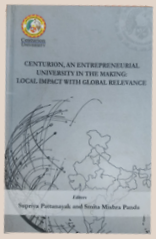
- R.K. Khadanga, D. Das, A. Kumar & S. Panda, “A Novel Improved Parasitism Predation Algorithm Based Virtual Inertia Control Approach for the Frequency Regulation of an AC Microgrid Utilizing an Interval Type-2 Fuzzy Logic PID Controller”, Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, Vol. 44, pp. 1660-1677, Mar. 2022 (SCI-IF-3.447).
- A. Kumar, R.K. Khadanga & S. Panda, “Reinforce Modified Equilibrium Optimization Technique based MS-PID Frequency Regulator for a Hybrid Power System with Renewable Energy Sources, Soft Computing, Springer (SCI-IF- 3.643)).
- S.Choudhury, S.K. Acharya, R.K. Khadanga, S. Mohanty, J. Arshad, A. Rehman, M. Shafiq, J. G. Choi,” Harmonic Profile Enhancement of Grid Connected Fuel Cell through Cascaded H-Bridge Multi-Level Inverter and Improved Squirrel Search Optimization Technique. Energies MDPI, 14(23), p.7947 (SCI-IF- 3.004).
- R.K. Khadanga, A. Kumar & S. Panda, “A Novel Sine Augmented Scaled Sine Cosine Algorithm for Frequency Control Issues of a Hybrid Distributed Two-Area Power System”, Neural Computing and Applications, Springer, pp. 1-17, 2021 (SCI- IF- 5.606).
- R. K. Khadanga, A. Kumar & S. Panda, “Design and Implementation of Interval Type-2 Fuzzy PID Controller Utilizing a Novel Modified Equilibrium Optimization Algorithm for Frequency Control of a Hybrid Distributed Power System”, IET Renewable Power Generation, Vol. 15, no. 8, pp. 1706-1723, March 2021 (SCI- IF-3.894).
- Rajib K. Majhi, Abinash Padhy, Amar N.NayakPerformance of structural lightweight concrete produced by utilizing high volume of fly ash cenosphere and sintered fly ash aggregate with silica fume, Cleaner Engineering and Technology, Elsevier, 3, 100121. (Scopus, IF-1.234).
- RK Majhi, SK Patel & AN NayakSustainable structural lightweight concrete utilizing high-volume fly ash cenosphere, Advances in Concrete Construction, Techno Press, 12 (3), 257-270. (SCI, IF-3.214)

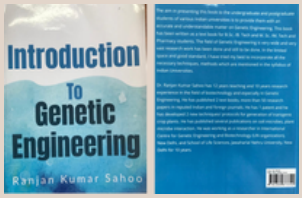
Books Published:

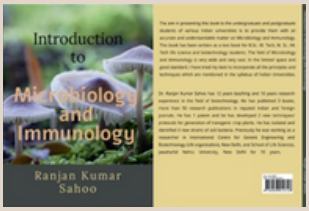


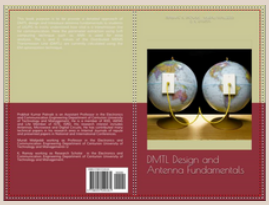


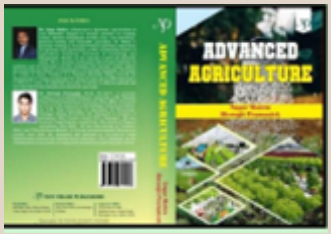


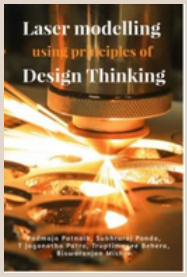


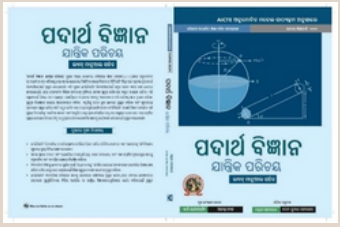


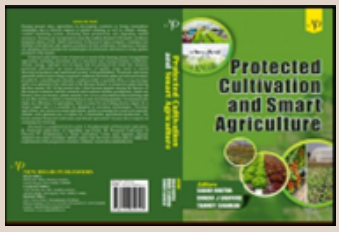


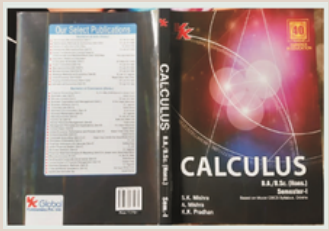


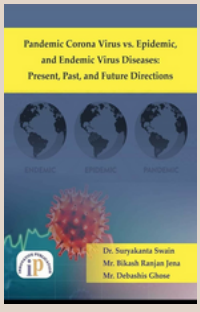


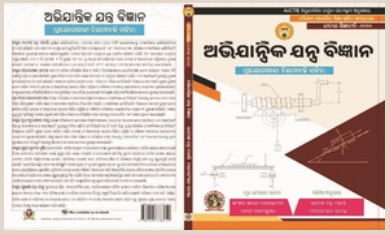


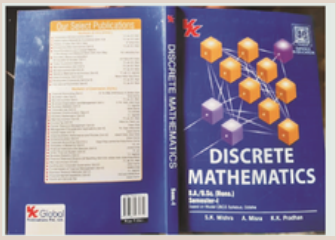


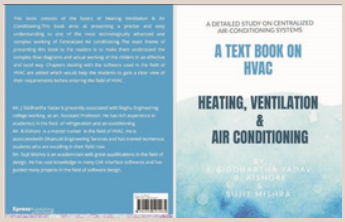


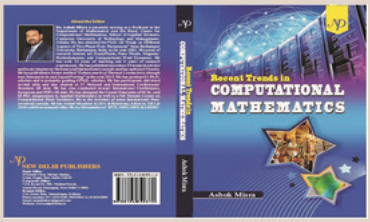












Books Published:

Sl. No	Title of the Book	Publishers	Year of Publication
1	Genome editing Technologies in Crop Improvement	© Springer Nature Singapore Pte Ltd.	2022
2	Introduction to Genetic Engineering	Notion Press	2021
3	Introduction to Microbiology and Immunology	Notion Press	2022
4	Laboratory manual for fundamentals of crop physiology	Vital Biotech Publication	2022
5	Advanced Breeding Approaches for crop improvement	New Delhi Publishers, New Delhi	2021
6	A Concept Note on Biofertilizers	Notion Press	2020
7	Pharmacobiotechnology & Nanotechnology-Therapeutic applications and Strategies	Cambridge Scholars Publishing	2022
8	An Appraisal of Performance of Municipal Services: A Study of Consumers Opinion on Greater Visakhapatnam Municipa Corporation, Visakhapatnam	Eliva Press Global Ltd.	2022
9	Silver Nanomaterials: One of the Exquisite Materials,ISBN: 979-8838866288,Amazon Publishing,2022,https://www.amazon.co.uk/dp/B0B4L3JQNL	Amazon Publishing	2022
10	Emerging materials for Future Technology, ISBN: 9798588879668,amazon publishing	Amazon Publishing	2020
11	Aspects of Commonly Prevailing Diseases and their dignosis, ISBN: 9798554317064, Amazon publishing	Amazon Publishing	2020
12	Clean Energy Products: A Path for Attaining Livelihood Security, ISBN No: 9781636691602	Notion Press, Available in Amazon Kindle	2020
13	Clean Energy and Rural Development, ISBN No:9798887720401	Notion Press, Available in Amazon Kindle	2022
14	Clean Energy Applications in Modern World, ISBN: 9781638069560	Notion Press, Available in Amazon Kindle	2021
15	Maintenance schedule of Electrical Substation Equipments, ISBN: 9789391101848	Educreation Publishing	2021
16	Project Management and Smart Electrical Systems, ISBN: 9798587652200	Amazon Kindle ; 1st edition	2020
17	Pandemic Corona Vs Epidemic and Endemic virus diseases: Present, Past and Future Directions: ISBN: 978-93-91208-61-5; https://amzn.eu/d/1zJ0uMw	IP innovative Publications (IESRF), Available in Amazon.in	2021
18	Bio-Wealth of Odisha, India (Volume-1) ISBN: 979-8551022671	Amazon Kindle	2020
19	Bio-Wealth of Odisha, India (Volume-II) ISBN: 9798838993625	Amazon Kindle	2022
20	Fundamentals to analytical chemistry	Amazon,kindle	2022

Books Published:

Sl. No	Title of the Book	Publishers	Year of Publication
21	Food and Agriculture (ISBN: 978-81-950305-9-0)	ESN Publications, Tamil Nadu, India	2021
22	AGROFORESTRY -Prospective, Strategies and Future Aspects (ISBN : 9788195339297)	Taran Publication, New Delhi	2022
23	Advanced Trends in Agricultural Extension Vol. 4 (ISBN: 978-93-95118-04-0)	Integrated Publishers, New Delhi	2022
24	Advanced Agricuture Publisher: ISBN: 978-81-947417-6-3	New Delhi Publishers	2020
25	Protected cultivation and smart agriculture: ISBN: 978-81-948993-2-7	New Delhi Publishers	2020
26	Intercropping System ISBN: 976-93-944990-42-0	New India Publishing Agency	2022
27	Innovative Approaches in Agriculture Vol.I	New Delhi Publishers	2022
28	Education Technology for Engagement and Experience: A New Approach to Learning, ISBN 979-8556242975	Amazon Kindle Self Publishing	2020
29	Drawing Fundamental, ISBN-13 : 979-8553819804,	Amazon Kindle Self Publishing	2020
30	Problems of Administration in the secondary schools, ISBN-	Amazon Kindle Self Publishing	2021
31	9.79874E+12	Amazon Kindle Self Publishing	2021
32	BIRANCHI NARAYAN A WOODEN SUN TEMPLE, ISBN-9798691959554,		
33	AWS Cloud Practitioner, 9781716506109	Shashwat Publication	2020
34	Supercritical Carbon Dioxide Extraction	Scholars Press	2021
35	Role of Phytochemicals in Human Physiological Disorders; Diabetis and Obesity.	Scholars Press	2020
36	A Journey from Conventional to Smart Coatings, ISBN: 978-93-90648-09-2	Rathore Academic Research Publications	2021
37	Trends in Thermal Spray Coatings, ISBN: 978-93-90648-33-7	Rathore Academic Research Publications	2021

Summer Intern Projects

Transformer Manufacturing

Cabinet Making using Wood

Bike Trolley Making

Creating Models in FRP

E-vehicle Manufacturing & Assembly

Internship students working with laser engraving machine

Students Internship on Biogas Production and Water Analysis

Internship students working with Oxford Nanopore Sequencer at genetic engineering & genomics Lab

Summer Intern Projects

Sl no.	Project	Research Centres
1	Development and Testing of Smart Weeder	Centre for Smart-Engineering Applications
2	Iot based ambient environment monitoring system	Centre for Smart-Engineering Applications
3	IoT in Agriculture	Centre for Smart-Engineering Applications
4	Design of Smart Phone monitoring system of Insulin Pump	Centre for Smart-Engineering Applications
5	Development of microwave assisted extraction setup	Phytopharma
6	CFD Simulation Study of Shell and Tube Heat Exchanger system	Centre for Computational Mathematics
7	CFD Simulation Study of the Flow over Wind Turbine Blades	Centre for Computational Mathematics
8	Soil Quality Monitoring using MATLAB	Centre for Computational Mathematics
9	Heat transfer analysis of rotary heat exchanger using CFD	Centre for Computational Mathematics
10	Development of fluorometric sensors for detection of Transition Metal	Centre for New Materials
11	Fabrication of graphene oxide-polymer based sponges for water purification	Centre for New Materials
12	Design of Material using Biovia material Studio	Centre for New Materials
13	Preparation of Materials (a) Vanadium doped Bismuth ferrite and (b) Vanadium doped Strontium Titanate using solid state reaction technique	Centre for New Materials
14	Preparation of Silver Nanocomposite with Conducting Polymer and Study of its Effectivity in Water Purification	Centre for New Materials
15	Wearable Antenna Design for different applications	Centre For Communication Technologies
16	In-silico design and molecular docking study of plant phytochemicals using Biovia Discovery studio	Centre for Drug Design

Summer Intern Projects

Sl no.	Project	Research Centres
17	Prescription Audit Team and Drug Information Centre	Centre for Drug Design
18	In-silico design and molecular docking study of plant phytochemicals using Biovia Discovery studio	Centre for Drug Design
19	Food Product Development (Ragi Bread)	Centre for Genetics and Genomics
20	Abiotic stress tolerance in plants	Centre for Genetics and Genomics
21	Characterization of Waste Water and its Management	Centre for Waste to Wealth Management
22	Laser controlled automatic railway crossing gate prototype	Centre for Laser
23	E Vechicle Manufacturing	Centre for Manufacturing
24	Drone Making & Piloting	Centre for Manufacturing
25	Cabinet Making using Wood engineering Lab	Centre for Manufacturing
26	E bIKE using FRP & Lithium ion Battery	Centre for Manufacturing
27	Polyhouse Making & Automation	Centre for Manufacturing
28	Trolley design and Manufacturing	Centre for Manufacturing
29	CFD SIMULATION OF OF DRONE WITH ANSYS	Centre of Design & Manufactiring
30	Extraction of Text from OCR Report	DSML
31	Machine learning approach for forecasting wheat price index in India.	DSML
17	Prescription Audit Team and Drug Information Centre	Centre for Drug Design

Summer Intern Projects

Sl no.	Project	Research Centres
31	Machine learning approach for forecasting wheat price index in India.	DSML
32	Land Use and Land Cover Detection in Bhubaneswar	DSML
33	Object Identification using Multispectral Imaging	DSML
34	Drone Image Processing	DSML
35	IoT based monitoring Sensor Parameteres	DSML
36	Named Entity Recognition (NLP)	DSML
37	Android APP Development for Agricultural Applications	DSML
38	Lane and Curve Detection using Video Processing	DSML
39	Recommendation System for Prcision Agriculture	DSML
40	Histopathology sample analysis	Centre for Medical Diagnostics
41	Biomedical Waste Management	Centre for Medical Diagnostics
42	Development of NFT Hydroponics structure using square pipes	Smart Agriculture
43	IoT in Irrigation	Smart Agriculture
44	LMS Development and Implementation	Centre for EduTech & Skills Tech
31	Machine learning approach for forecasting wheat price index in India.	DSML
32	Land Use and Land Cover Detection in Bhubaneswar	DSML

Research Collaborations with Industry and Academia

Webinars / Workshops

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Empowering Communities...

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CAMPUSES:

Paralakhemundi Campus
Village Alluri Nagar
P.O. – R Sitapur, Via- Uppalada
Paralakhemundi, Dist.- Gajapati
Odisha, India. PIN– 761211

Bhubaneswar Campus
Ramchandrapur
P.O. – Jatni, Bhubaneswar
Dist.- Khurda, Odisha,
India, PIN– 752050

Balangir Campus
Behind BSNL Office
IDCO land, Rajib Nagar
Dist.- Balangir, Odisha
India, PIN-767001

Rayagada Campus
IDCO Industrial Area
Pitamahal, Rayagada
Dist.-Rayagada, Odisha
India, PIN-765001

Balasore Campus
Gopalpur,
P.O.-Balasore
Dist.-Balasore, Odisha
India, PIN-756044

Chatrapur Campus
Ramchandrapur,
Kaliabali Chhak,
P.O-Chatrapur, Dist.-Ganjam
Odisha, India, PIN-761020