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# **Message from Chairman's Desk**



The National Institute of Science and Technology (NIST) www.nist.edu, Institute Park, Pallur Hills, Berhampur, Odisha, was established in 1996 as the first NRI higher educational venture in the state. It was the firstdegree granting engineering institute in southern Odisha affiliated to Berhampur University then. NIST is promoted by SM Charitable Educational Trust with Dr. Sukant Mohapatra and Mrs. Sanjeeta Mohapatra as founder/donor trustees. It was the vision and dream of the founding members to build NIST as a center of academic and research excellence at par with International Research Universities in their home state of Odisha. Since then, NIST has established itself as a premiere research institute in the country offering undergraduate, graduate, and Ph.D. programs and different disciplines in Engineering, Science, and Management. NIST has set benchmark through its outstanding academic programs, quality education, and cutting-edge multidisciplinary research in the areas such as VLSI Design, Data Science, High Performance Computing, Internet of Things (IoT),

Renewable Energy, and Mechatronics etc. NIST faculties are among BOYSCAST and Fulbright scholars, INSA fellows, USRI scientist and young scientist award recipients including other achievements. NIST faculties and scholars are recipients of significant research grants from multiple international and national organizations like DST SERB, DST WOSA, DST AMT, MHRD, UGC, AICTE etc. NIST has research collaboration and partnership with universities around the globe [e.g., IAMS (Taiwan), Univ. of Electro-Communication (Japan), Brunel University (London), and NJIT (USA) ...] and has strong industry-academia partnership with multiple industries in different sectors. NIST is NACC "A" and NBA accredited. Over the years, NIST has been constantly ranked highly in the country by various ranking organizations like NIRF (MHRD, Govt. of India), DATAQUEST, OUTLOOK and Times etc. In 2021, NIST ranked band PERFORMER in Atal Ranking of Institutions on Innovation Achievements (ARIIA) by Ministry of Education, Govt. of India.

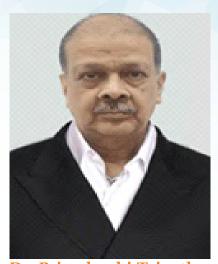
On its foundation day on September 18, 2021, NIST celebrated its glorious 25th anniversary (Silver Jubilee) with a three days long program that concluded on 21st September 2021. The Silver Jubilee function was inaugurated by Shri Naveen Patnaik, Hon'ble Chief Minister, Govt. of Odisha. The celebration was graced and addressed by many luminaries such as Shri Chandra Sekhar Sahu, Hon'ble MP Lok Sabha, Shri Sujeet Kumar, Hon'ble MP, Rajya Sabha, Shri Premananda Nayak, Hon'ble Minister Skill Development and Technical Education (SDTE), Shri Upendra Tripathy, Advisor on Higher Education to Chief Minister, Govt. of Odisha, Shri Bikram Panda, Hon'ble MLA, Sri Gokul Ch. Pati, Former Chief Secretary, Govt. of Odisha, Prof. Govind Chakrapani, Hon'ble Vice Chancellor of Berhampur University, Prof. Chita Ranjan Tripathy, Hon'ble Vice Chancellor of BPUT and others. The celebration concluded with an inspiring message from Prof. Ganeshi Lal, Hon'ble Governor of Odisha. The event included many seminars and panel discussions with distinguished guests from India and abroad. The students and faculties showcased the legacy and future, research and innovation at NIST along with dazzling cultural fests in the evenings. The function was attended by many alumni of NIST. NIST alumni were awarded with distinguished and star alumni awards. My sincere thanks to esteemed guests, NIST faculty, staff, alumni and students for the wonderful celebration of NIST legacy and vision on the occasion of its glorious 25th anniversary.

We have made tremendous progress, but we have miles to go, as our quest for excellence will never stop; our rich heritage and legacy will only continue to grow further. I take this opportunity to congratulate our NIST fraternity for wonderful accomplishment for NIST on its 25 years of glorious journey.

I congratulate the entire editorial team for their hard work and dedication for publication of this edition of NIST Chronicle.

Dr. Sukant K. Mohapatra

# **Message from Principal's Desk**



The year 2021 has been an eventful year in many ways. We saw many successes and witnessed many more achievements. We completed and celebrated 25 glorious years of the institute's foundation. The foundation that was laid by its founder members has stood strong and experienced the test of times in all respects. Despite the challenges posed by Covid and its subsequent conditions, NIST has not compromised with its quality of education. The faculty members have come up with renewed energy and enthusiasm to equip their students in the new environment too. The three days Silver Jubilee Celebration was a witness to the fact that the unity among the NISTians remains untinted. The Alumni stole the show with their presence in the campus and reminiscence about their college days. The ISO certificate of the college has added another feather to the already glorious cap of the institute. It has added even more authenticity to the institute. While we have welcomed new people to our institute, we continue to build our bonds with students and faculty members alike. The placement of the

**Dr. Priyadarshi Tripathy** bonds with students and faculty members alike. The placement of the institute has also seen the sunnier side throughout the year with the highest package shooting up to 19 LPA in Western Digital. I am sure it is going to only scale up in future times.

I hope and pray that the institute continues its winning spree and grows exponentially in all spheres.

Thanks

Dr. Priyadarshi Tripathy Principal

# 1.NIST IN FOCUS 2021

# 1.1. Team NIST bags the Smart India Hackathon 2021



15<sup>th</sup> February,2021- NIST team "GlucoNIST" won Smart India Hackathon under the "Hardware Edition" of the problem statement "Non-invasive glucometer" (PR183). We congratulate the GlucoNIST team members, Prakash Panigrahi (ECE), Debasish Panda (ECE), Shree Patnaik (ECE), K Devendra Reddy (CSE), Swosti Choudhury (EEE), and Anand Kishen Pujari (ECE), and the mentor Dr. Sandipan Mallik (faculty, ECE) for winning this prestigious national Level award!

Over 100 teams from across the country participated in the hardware edition of Smart India Hackathon-2020. Team NIST won all the levels, and finally demonstrated its prototype device that determines blood sugar level using breath instead of blood. The objective of this prototype is to provide an easy-to-use, effective, low-cost, non-invasive, painless measurement of blood glucose level. The team has already applied for its patent and believes the prototype will soon be turned into a product.

The Govt. of India and state governments have been organizing hackathons every year to inculcate a culture of problem solving and product innovation. Such events create a base for many startups that improve governance and quality of life. NIST students have participated in such hackathons every year and often won prizes for their innovative, open and positively disruptive solutions.

### 1.2. NIST clinches SRM Hackathon 5.0

NIST team "GlucoNIST" won 3rd position in the national level "SRM Hackathon 5.0". Guided by Dr. Sandipan Mallik (ECE faculty), GlucoNIST members, K Dibakar Patro, Prakash Panigrahi, Debasish Panda, Madhvi Singh (all ECE students) achieved this feat of 36-hour long online coding competition under the theme "Healthcare & Forensics".

SRM Hackathon helps participants unveil the developer within themselves and come up with viable solutions to solve real-life problems ranging from agriculture to sports and fitness to e-commerce. It provides a platform to budding coders and developers to showcase their technical skills and then work upon them to come up with solutions. The developers are asked to build their products that would lay a helping hand in building the future bit by bit. It is a national level event inviting participants from various corners of the country.



K Dibakar Patro (ECE) | Prakash Panigrahi (ECE) | S. Mallik (Mentor) | Debasish Panda (ECE) | Madhvi Singh (ECE)

# **1.3. NISTian GATE Qualifiers**

Four NIST graduates have brought laurels to the institute by qualifying GATE. Should they wish to pursue M.Tech at NIST, the Institute will provide a scholarship of 11,000 (8000 from AICTE and 3000 from NIST.



Abhisekh Sahu CSE 2021 batch All India Rank: 590

Bimalendu Swain EE 2021 batch All India Rank: 3300



Karan Kumar Singh EE 2021 batch All India Rank: 9761

Laxmikant Sahu ECE 2021 batch All India Rank: 8524

# 1.4. TIMES ranks NIST in 2021



30<sup>th</sup> June,2021- The winning spree continues! TIMES ranks NIST 11th in East Zone private Engineering college (https://times- eng ineeringsurvey.com/regionalrankings.html), 88th in India among private Engineering colleges (https://times-engineering-survey .com/private-engineering ...) & 98th all India rank Among all Institutes (https://timesengineering-survey.com/). The Chairman Dr. Sukant Mohapatra congratulated the entire NIST fraternity (faculty, staff, students and alumni) on this wonderful accomplishment.

## 1.5 INSA-Visiting Scientist Programme 2021



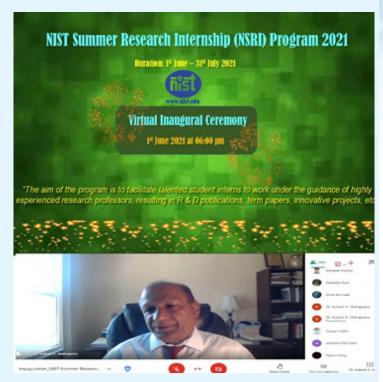
26<sup>th</sup> July,2021- Dr.Sandipan Mallik, Faculty member ,ECE,has been selected for the prestigious INSA-Visiting Scientist Programme 2021, conducted by Indian National Science Academy (INSA). The program aims to acquire furtherance of research capabilities for undergoing training in specific techniques or utilising facilities other than one's own institution. He will continue his research work as an INSA Visiting Scientist at the Department of E & ECE, IIT Kharagpur for two months.

# 1.6. Young Researcher Award for 2021



29<sup>th</sup> May,2021 - NIST family congratulates Dr Pradyumna Patra, Associate Professor, Deptt. of ECE for receiving Institute of Scholars (InSc) Young Researcher Award for 2021. Every year InSc issues "Research Excellence Award/ Young Achiever Award " to research scholars, academicians and professionals for their research work published in any International Journals or Conferences. Benefits of this award include a memento, professional membership to InSc, qualification as a resource person for InSc events, and reviewership of InSc Journals.

### 1.7. Summer Research Internship (NSRI) Program



1<sup>st</sup> June, 2021 - The virtual inaugural ceremony of the NIST Summer Research Internship (NSRI) Program was held on 1st June 2021. Honourable Chairman Dr. Sukant K Mohapatra, and the Principal of NIST, Dr. Priyadarshi Tripathy inaugurated the virtual ceremony. Registrar, Shri Kshirod Ch. Mohapatra, the HoDs, the Faculty members, and the student interns selected for the internship program were also present in the ceremony. Dr. Sukant K Mohapatra delivered a motivational talk on recent research trends in engineering to the students.

Dr Priyadarshi Tripathy welcomed the internship students and explained the importance of such a program. Dr. Sandipan Mallik, Coordinator, R&D, encouraged the students to convert their internship work into publications. Miss Nayanika Mahapatra, Head of the Dept, English was the host for the evening.

17<sup>th</sup> September,2021- Dr.(Er.) Sukant K. Mohapatra, Founder Chairman, NIST received the prestigious Visvesvaraya Award on the occasion of Engineers' Day, 15th September, 2021.Hailing from a humble background in a small village of Odisha, Dr Mohapatra rose to

# 1.8. NIST becomes the official partner in IEEE Conference



1<sup>th</sup>August,2021-NIST Autonomous, Berhampur under the visionary guidance of its Chairman, Dr. Sukant K Mohapatra, has grabbed the opportunity of being an official partner for the 15th IEEE International Conference on Networking, Architecture and Storage (NAS-2021) scheduled from 24th to 26th October 2021.

For more details, Kindly visit: http://www.nasconference.org/NAS-202l/sponsor.html

## 1.9. Visvesvaraya Award for the Chairman, Dr Sukant K Mohapatra



this position by his sheer diligence and dedication. His visionary leadership and able guidance have led NIST in the journey of success. The NIST family and fraternity is extremely proud and happy about the achievement of its founder. We wish him many more successful endeavours in the future.



23<sup>rd</sup> October, 2021 - We are extremely happy to share that, under the tutelage of Founder chairman, Dr. Sukant K. Mahapatra, NIST Autonomous has received both the ISO certificates 9001:2015 & 14001:2015. This is yet another feather that has been added to the cap of the institute. Forever proud to be a NISTian.

## 1.11. Orientation Programme for MBA, MCA, Mtech and BTech LE, 2021 batches



23<sup>rd</sup> November, 2021- National Institute of Science and Technology - Autonomous, Berhampur organised an Orientation Program for the fresh and budding talents of MBA, MCA, MTech and BTech LE on 23rd November, 2021. Dr. Shivani Guru, faculty member, department of MBA, supervised the event and introduced the students to Dr. Sukant K. Mohapatra (Founder Chairman, NIST), Dr. Priyadarshi Tripathy (Principal, NIST), Shri Kshirod Mohapatra (Registrar, NIST), Prof. Pradeep K. Jena (MCA course coordinator), Dr. Akankshya Patnaik (HoD, MBA) & Dr. Sudhir Ranjan Panigrahi (HoD, School of CSE) who welcomed the newly joinees. Most faculty members of NIST participated in the programme where around 200 freshers joined.

## 1.12. Inauguration of NCC Naval Wing



1<sup>st</sup> December, 2021 - A unit of NCC Naval wing was inaugurated at NIST. Commander Kishor Chandra Rauta, Commanding Officer and Staff of the 1 (O) Naval Unit NCC, Berhampur inaugurated the event. He encouraged the students to join Naval NCC Cadets. Dr. Sukant K. Mohapatra, Chairman, Dr. Priyadarshi Tripathy, Principal, Shri Kshirod Ch. Mohapatra, Registrar graced the event. Prof. Nilesh Dalai ended the event with a vote of thanks.

# 1.13. Orientation Programme for Btech, 2021 Batch



2<sup>nd</sup> December, 2021 - National Institute of Science and Technology - Autonomous, Berhampur welcomed its newest members to the family. An orientation program was organized for the 2021 batch BTech students. The founder Chairman, Dr Sukant Mohapatra inaugurated the ceremony. He shared the vision, mission and values of the institute along with its growth and development in the last 25 years. He also advised the students to inculcate intrinsic human values of love, care and respect for others. The Principal, Dr Priyadarshi Tripathy introduced the students to the HODs of all departments and advised them to adhere to the discipline, rules and regulations of the institute. The Registrar, Shri Kshirod C Mohapatra, informed the students about the Autonomous statute of the college and its functionalities. He also ensured the parents that their wards will be given utmost care.

## 1.14. Orientation program for MSc., 2021 Batch



 $8^{\text{th}}$ December 2021 - NIST, Berhampur organised an Orientation program for MSc. Students on 9th December, 2021. The founder Chairman, Dr Sukant Mohapatra inaugurated the ceremony virtually. He shared the vision. mission and values of the institute along with its growth and development in the last 25 years. Principal, Dr. Priyadarshi Tripathy, Registrar, Shri Kshirod Ch. Mohapatra, Dr. Duryodhan Sahu (HoD, Chemistry), Dr. Bhaskar Bhaula (HoD, Math) & Dr. Asish Ku Mohapatra (HoD, Physics) graced the event. The students were informed about the placement and career development opportunities available at the college by Dr Bhanu Prasad Behera (Placement Head).

# 2. NIST Silver Jubilee Celebration (1996-2021)

# 2.1 Day 1

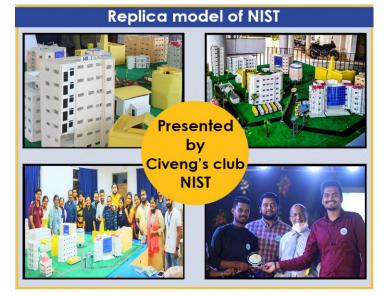
### 2.1.1 Inauguration



18<sup>th</sup> September,2021- NIST Autonomous, Berhampur kickstarted its three-day Silver Jubilee Celebration on 18th September, 2021 which was virtually inaugurated by the Hon'ble CM of Odisha, Shri Naveen Patnaik. Shri Chandrasekhar Sahu, Hon'ble MP, Shri Bikram kumar Panda, Hon'ble MLA graced the occasion as the Guests of Honour, Prof. Govind Chakrapani, Hon'ble VC, Berhampur University was the Chief Speaker for the ceremony.

It was a memorable day for all NISTians and especially the founder Chairman, Dr Sukant K Mohapatra who dreamt of establishing an engineering college in Southern Odisha.

### 2.1.2 Replica model of NIST



18<sup>th</sup> September,2021- A replica model of NIST was prepared and presented by the institute's Civeng's Club, the departmental club of Civil Engineering on the occasion of its Silver Jubilee Celebration. The students prepared the structure of the existing buildings as well as the proposed planned buildings with their amazing crafts. The model was immaculately designed with careful attention to intricate details of the buildings. The existing buildings that were displayed are Lecture Hall Complex (LHC), CORE, TIFAC, Galleria, Atrium, Octagon, EDC, HR-1, HR-2, Ladies Hostel. There are plans to have two more buildings namely Mongolia and Academic along with a faculty residence inside the campus.

The replica was designed by the core members of Civing's club under the guidance of Dr. Barada Prasad Sethy, HoD, Dept. of Civil Engineering. Kudos to the whole team of Civeng's Club!!

#### 2.2 Day 2

### 2.2.1 Alumni Day



Silver Jubilee Celebration @NIST



### 2.2.2 Distinguished Alumni Award



19<sup>th</sup> September,2021- NIST Autonomous, Berhampur, conferred Dr. Chitaranjan Mohapatro with the Distinguished Alumnus Award, at its Silver Jubilee Celebration on 19th Sept. 2021.

This is Dr Sukant K. Mohapatra, the Chairman's attempt to encourage other Alumni to follow Dr Chittaranjan's footsteps, make their Alma Mater proud and be a role model for their juniors. Congratulations!!!

19<sup>th</sup> September,2021- NIST Autonomous Berhampur celebrated its 2nd day of Silver Jubilee as ALUMNI Day. The ceremony was inaugurated by the Hon'ble Minister, SDTE, Premananda Nayak. Shri Upendra Tripathy, Hon'ble Principal Advisor (Education) to CM, Odisha graced the occasion as the Guest of Honour and Prof Chitaranjan Tripathy, Hon'ble VC, BPUT was the Chief Speaker for the ceremony. In this occasion more than 100 alumni of the last 25 years from B.Tech, MBA and MCA were present to relive their days of learning. It was a nostalgic moment for all the Alumni when they visited their Alma Mater.

A cultural night followed the events of the day; mesmerising performances by the faculty members and students captivated the audience and made the evening even more special and memorable.

### 2.2.3 Star Alumni Award



19<sup>th</sup> September,2021- National Institute of Science and Technology - Autonomous, Berhampur honored Mr. Shekhar Suman Majhi, Mr. Abhijeet Padhy, Dr. Badri Patro & Wg. Cmd. Anupam Baral with Star Alumni Award, at Silver Jubilee Celebration on 19<sup>th</sup> Sept. 2021. This award recognizes an accomplished graduate for his/her significant contribution to the society and leadership in their respective professions. This award is an attempt to recognise the extraordinary achievements of its Alumni.

### 2.3 Day 3

### 2.3.1 Closing Ceremony



20<sup>th</sup> September,2021- NIST Autonomous Berhampur celebrated its last day of Silver Jubilee which was virtually inaugurated by Hon'ble Governor Odisha, Prof. Ganeshi Lal. Shri Sujeet Kumar, Hon'ble MP, Rajya Sabha graced the occasion as the Guest of Honour & Shri Gokul C. Pati, former CS, Govt. of Odisha was the Chief Speaker for the ceremony.

All the guests talked about the role of youth in building the society and giving back to it. A Souvenir was released on this special occasion.

The three days celebration came to an end with a grand cultural night with many scintillating performances by the faculty members and students.

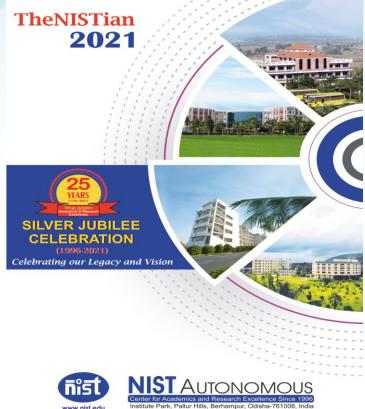
# 3. Industry and Academic Collaboration

### 3.1. Parklands Solar Pvt. Ltd.



24<sup>th</sup> March 2021 - National Institute of Science and Technology (NIST) and Parklands Solar Private Limited signed an MoU for social and technical upliftment by harnessing hybrid renewable power. It's noteworthy that

# 2.3.2 Release of the Souvenir



20<sup>th</sup> September,2021- National Institute of Science and Technology - Autonomous, Berhampur, proudly shares the Souvenir that was released on the occasion of its Silver Jubilee Celebration. The Souvenir reflects the journey of NIST from the eyes of its Founder Chairman, students and Alumni.

Happy reading:

https://nist.edu/downloads/souvenir/souvenir -2021.pdf

Parklands Solar Pvt. Ltd. is Odisha's largest integrated solar company that is driven by the singular vision of harnessing the power of the sun to enable solar everywhere. It operates in three distinct segments - cutting-edge manufacturing, EPC services for solar power projects, and innovative solar products. NIST is a premier autonomous institute of Odisha. It leads Eastern India in technical and higher education.

Under the leadership of the chairman of NIST, Dr. Sukant Mohapatra, Principal Dr. Priyadarshi Tripathy, Registrar Kshirod Mohapatra and the sincere efforts of Innovation Incubation and Industry Collaboration Center (I3C2), NIST stepped into this industrial collaboration to provide innovative solutions on solar energy based on the needs of the society. The collaboration focuses on synergic projects and research on green/clean energy. Parklands Solar Director Mr. Gopal Krishna Dash and the visionary leadership of NIST ensure that the partnership gets the complete roadmap of the new era of technologies and innovation and makes a bright footprint on renewable energy at national and international levels.

### **3.2. AEP Certification**



18<sup>th</sup> March 2021 - NIST signed an MoU with AEP Certification to work collaboratively on Industry Aligned Curriculum Enhancement and FDPs, and design Unique Multi Domain Certification programs across Core Engineering branches, enabling industrybased internships and placement opportunities for its graduates. AEP Certification is targeted for aspiring engineering graduates and working professionals who aim to jump start in their career and transform from Job Ready to Role Ready to Growth Ready. Through an unique competency and skill baselining framework which covers a wide range of independent certification programs, the engineering professionals will be enabled to be day-one deployable resources aligning with any industry specific role.

# 4. Career Development@2021

### Placements upto December 2021

- More than 80 Companies including the likes of Western Digital, Infosys & Capgemini visited NIST for campus recruitment in 2021.
- The highest package shot upto 19 LPA in this year.
- Over 360 students have been successfully placed in various MNCs. The placement drives continue for the final year students and we aim to achieve 90% placement for this batch.
- 87.86 % of the eligible students have been placed.

# **108** Students Placed in Cognizant

108 NISTians placed in Cognizant through its campus recruitment drive at NIST Berhampur. The fruits of efforts by the institute in shaping the students showed fruitful results and achievements. NIST is proud of the students, the Cell, and the proficient teachers who gave their best to educate and nurture the students to their best.

43 STUDENTS ARE PLACED IN Born Digitel . Born Agile

43 students of NIST Berhampur (2022 graduating batch) from different branches have been successfully placed in Happiest Minds Technologies through its campus recruitment drive at NIST. Students @NIST made the institution and the teachers proud with their excellent performance at the placement drives. This has been possible under the able guidance of our Founder Chairman Dr. Sukant K. Mohapatra and Placement head, Dr. Bhanu Prasad Behera along with the placement team.

99 Students placed in wipro

99 students of NIST Berhampur (2022 graduating batch) have been successfully placed in Wipro through its campus recruitment drive at NIST.

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and many more	

# 5. Achievements and Laurels by NIST Fraternity

**Dr.** Asit Kumar Panda, Associate Professor, Dept. of ECE has been selected for University Foundation Day Research Award – 2021 by BPUT, Odisha. NIST congratulates Prof. Panda and is proud of his achievements.





**K. Venkateswar Reddy**, an alumnus of School of Computer Science, secured the 24th rank in the Odisha Administrative Services (OAS) conducted by the Odisha Public Service Commission (OPSC). Best wishes from NIST fraternity for a bright future ahead!

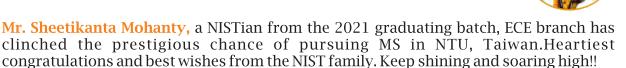
**Mahapatra Kuldeep Mohanty,** an alumnus of Department of Electronics & Instrumentation Engineering, secured the 14th rank in the Odisha Administrative Services (OAS) conducted by the Odisha Public Service Commission (OPSC). Best wishes from NIST fraternity for a bright future ahead!





**Umasankar Koya,** an alumnus of Department of Electronics & Communication Engineering, secured the 127th rank in the Odisha Administrative Services (OAS) conducted by the Odisha Public Service Commission (OPSC). Best wishes from NIST fraternity for a bright future ahead!

**Ms. Darsana Deo**, a NISTian from the 2021 graduating batch, ECE branch has clinched the prestigious chance of pursuing MS in NTU, Taiwan.Heartiest congratulations and best wishes from the NIST family. Keep shining and soaring high!!



**Ms. Swosti Choudhury,** a NISTian from the 2021 graduating batch, ECE branch has clinched the prestigious chance of pursuing MS in NTU, Taiwan.Heartiest congratulations and best wishes from the NIST family. Keep shining and soaring high!!





**Mr. Ashutosh Panda,** a NISTian from the 2021 graduating batch, CSE branch has clinched the prestigious chance of pursuing MS in NTU, Taiwan.Heartiest congratulations and best wishes from the NIST family. Keep shining and soaring high!!

**Mr. Bishal K Nahak**, a NISTian from the 2021 graduating batch, CSE branch has clinched the prestigious chance of pursuing MS in NTU, Taiwan.Heartiest congratulations and best wishes from the NIST family. Keep shining and soaring high!!





**Mr. Arup Mohanty**, a 3rd Year student from CSE branch for getting selected in one of the world's most competitive research internship - MITACS Globalink Research Intern 2022 at York University, Toronto, Canada. Only 2500 students got selected throughout the globe for this summer internship in Canada. This internship is fully funded by the Govt. of Canada and Govt. of India (AICTE, MHRD).



**Roshan Kumar Patro V** (CSE 3rd Year) and **Debasish Panda** (ECE 4th Year) of team Pulmocrabtor (Lung cancer detection system), under the mentorship of Dr. Sandipan Mallik, Faculty ECE, bagged the 1st Prize in Startup idea Pitching, organized by Entrepreneurship Cell, IIT Kharagpur on the theme "Health Tech and Wellness". As a part of winning, they have



gained direct entry to the semi-finals of the Annual Global Business Model Competition, Empresario 2022, with an opportunity to win up to 50 Lakh Rupees.

# 6. Research and Development

# Research highlights - 2021:

- **Dr. Preeti Ranjan Sahu, faculty of ELE,** published two Indian Patents entitled "A QUALIFICATION AND LABELING PROCEDURE FOR INVERTERS FOR PHOTOVOLTAIC SYSTEMS CONNECTED TO THE ELECTRICAL GRID" [Patent Application no: 202131050804], and "POWER SOFTENING OF WIND GENERATION USING FUZZY LOGIC AND ENERGY STORAGE SYSTEM" [Patent Application no: 202131061655]
- **Dr. Duryodhan Sahu, faculty of Chemistry,** has published a journal entitled "Study of chromium immobilization behavior in unbound and concrete bound ferrochromium slag" in the Journal of Material Cycles and Waste Management [doi: 10.1007/s10163-021-01337-x. SCIE IF: 2.8]; and "Size quantization effect in water-dispersible LEEH caped ZnSe Nanocrystals" in Materials Today: Proceedings [doi:10.1016/j.matpr.2021.11.208, Scopus indexed]. He also published a book chapter entitled "Effects on mental health by the coronavirus disease 2019 (COVID-19) pandemic outbreak" in Springer and presented a paper entitled "Size quantization effect in water-dispersible LEEH caped ZnSe Nanocrystals" in the First international conference on Advances in mechanical Engineering and materials science [ICAMEMS-2022], organized by the School of Mechanical Engineering, VIT-AP University, Amaravati held from 22nd to 24th January 2022.
- **Prof. Siba Prasada Tripathy, faculty of CSE,** published an article entitled "A multi-objective Covering Salesman Problem with 2-coverage" in Applied Soft Computing [SCIE IF 6.7, doi: doi.org/10.1016/j.asoc.2021.108024], in collaboration with Durgapur Government College and NIT Durgapur.
- **Dr. Thokala Soloman Raju, faculty of Department of Physics,** published a journal entitled "Nonlinear Lorentzian-type standing wave solutions of ac-driven sine-Gordon equation" in Physics Letters A [SCIE IF 2.6, doi: 10.1016/j.physleta.2021.127623]. He also published another article entitled "Nonlinearly chirped self-similar waves on a cw background in inhomogeneous long optical waveguide" in Journal of Modern Optics [SCIE IF 1.46, doi: 10.1080/09500340.2021.1983055] in collaboration with B M University, Algeria
- Dr. Ranjan Kumar Padhy and Prof. Sarita Padhy, faculty of Chemistry, have published two articles entitled "Kinetic investigation of oxidation of alkanolamine by Cerium(IV) in acidic medium: catalytic effect of Mn(II) in Springer-Journal of Chemical Sciences [SCIE IF-1.57, doi:10.1007/S12039-021-01921-6] and "Zirconia supported rhodium nano materials: Catalytic application in selective oxidation of alcohols in Materials Today: Proceedings [Scopus Indexed, doi: 10.1016/J.MATPR.2021.04.204]. Dr. Ranjan Padhy also published another article entitled "Surfactant Catalyzed Oxidation of Ethanolamines by Cerium(IV)" in Asian Journal of Chemistry, [Scopus Indexed, doi: 10.14233/AJCHEM. 2021.22907]
- Dr. Kunjabihari Swain, faculty of EEE, and Dr. Ch. Murthy, faculty of EEE, published a journal entitled, "LI-Care: A LabVIEW and IoT Based eHealth Monitoring System" in Electronics [SCI IF: 2.39, doi:10.3390/electronics10243137] in collaboration with KIIT Bhubaneswar, University of Pitesti, Romania and Polytechnic University of Bucharest, Romania. They also published a book chapter entitled, "Situational Awareness of Micro-Grid Using Micro-PMU and Learning Vector Quantization Algorithm" in Intelligent Renewable Energy Systems by Wiley Online Library [doi:10.1002/9781119786306.ch10].
- **Dr. Sandipan Mallik, faculty of ECE,** has published an article entitled "Influence of Current Conduction Paths and Native Defects on Gas Sensing Properties of Polar and Non-polar GaN" in the Journal of Alloys and Compounds [Quartile 1; SCIE IF 5.3, doi: 10.1016/j.jallcom.2021.162808], which ranks 6 out of 80 in Metallurgy & Metallurgical

Engineering. This collaborative work was headed by CSIR-National Physical Laboratory New Delhi, along with Academy of Scientific & Innovative Research Uttar Pradesh, RMIT University Australia, Cambridge Centre for Gallium Nitride, University of Cambridge, UK, UNSW Australia and NIST Berhampur, Odisha. He was also invited as the Session Chair of the International Conference of Computational Techniques and Application (ICCTA 2021), jointly organized by WINAR Charitable Trust, IETE Kolkata and The Electronic Inventor, Kolkata.

- **Prof. Nilesh Dalai, faculty of ME,** published an article entitled "UHMWPE/nanodiamond nanocomposites for orthopaedic applications: A novel sandwich configuration based approach" in Journal of the Mechanical Behavior of Biomedical Materials [SCIE IF 3.9, doi:10.1016/j.jmbbm.2021.104327] in collaboration with VIT AP. Prof. Dalai and Dr. Duryodhan Sahu, faculty of chemistry also published two Scopus indexed journals entitled "Study of thermo mechanical properties of surface modified graphene on E-glass composite" and "Behavioural study of graphene oxide/functionalized graphene on bamboo fiber reinforced composite" in Materials Today: Proceedings. [doi: 10.1016/j.matpr.2021.01.701 and doi: 10.1016/j.matpr.2021.01.100]
- A total number of 6 book chapters are accepted to publish in the book entitled "Intelligent Technologies for Sensors Applications: Design, and Optimization for a Smart World" by Apple Academic Press [ISBN: 9781774911853]. The chapters of the book were contributed by more than 25 students from the Department of ECE, School of Computer Science Engineering and School of Electrical Engineering; under the guidance of Dr. Kunja Bihari Swain (faculty ELE), Dr. Sudhir Ranjan Pattanaik (faculty CSE), Prof. Manoj Kumar Sahoo (faculty CSE), Prof. Ashish Kumar Dash (faculty CSE), Prof. Bhabani Shankar Gouda (faculty CSE), Dr. M. Suresh (faculty ECE), and Dr. Sandipan Mallik (faculty ECE). The complete book will be published on November 2022. The chapter details are mentioned below:
  - 1. IoT-Based Teaching Assistant System for the Smart Classroom, Manoj Kumar Sahoo, Sudhir Ranjan Pattanaik, Yashwardhan Kumar, S. Sovan Kumar, Monik Raj Sahu, Sai Swarup Patnaik, and Sanjana Mahapatra.
  - 2. Automatic Fault Detection, Locating, and Monitoring in Distribution Lines Using Labview, Kunjabihari Swain, Sandipan Mallik, Kanishk Kashyap, Sumanjit Pattanayak, and Arpita Bebarta.
  - 3. Intelligent Big Data Analytics: A Perspective for Online Education Systems, Manoj Kumar Sahoo, Bhabani Sankar Gouda, Priyanka Pratihari, Anand Kumar Satapathy, Shyam Sundar Pradhan, and Sonalika Nayak.
  - 4. IoT-Based Traffic and Router Management System for Drivers, Manoj Kumar Sahoo, Ashish Kumar Dash, Swadhin Kumar Senapati, Bora Pavani, P. Deepak, Swastid Dash, and G. Akshaykumar.
  - 5. A Low-Cost Advanced Device for Detection of Pesticide with a NDVI Method, S. S. Kumar, D. Panda, R. R. Padhi, V. R. K. Patro, S. R. Dash, K. Kashyap, T. K. Giri, D. Mishra, and S. Mallik.
  - 6. IoT-Based Smart Security and Home Automation System, M. Suresh, Sandipan Mallik, Yashwardhan Kumar, Obbinti Sankar Rao, Madhvi Singh, Deepika Adhikary, Sai Swarup Patnaik, and Monik Raj Sahu.

### Book Cover:

https://www.appleacademicpress.com/intelligent-technologies-for-sensors-applications-designand-optimization-for-a-smart-world/9781774911853



# From the Publisher's Desk



NISTians have proved time and again what mettle they are made of. The daunting will power to excel in each hardship is the hallmark of every NIST family member. We have had a couple of proud moments- Dr. Sandipan Mallick, Associate Professor, ECE, has been selected for the prestigious INSA Visiting Scientist 2021, TIMES has ranked NIST 98th among all institutes, a record number of six students have been selected for MS programs in Taiwan and the USA with partial/full scholarships. These achievements are

testimonials of the fact that NISTians can surpass any challenge with their sheer dint of determination. This journey is never going to be an easy one but we will reach our destination anyways.

We value you and your opinions. Please send us your feedback to connect@nist.edu.

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Er. Pitambar Sahu

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