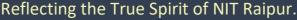


VOLUME 4 ISSUE 1

NATIONAL INSTITUTE OF TECHNOLOGY RAIPUR







Institute News

Republic Day Celebration

NIT Raipur celebrated the 72nd Republic Day of the nation on 26th Jan., 2021 with enthusiasm and patriotic fervor. Commemorating this historic day, **Dr. A. M. Rawani**, *Director*,



followed by the National Anthem. While addressing the gathering and the online viewers, the Director, NIT Raipur underlined the trying times of the worldwide COVID-19 pandemic and the positive life lessons one should take away from the past year. He also advised all the staff and faculty members of the Institute to use this unprecedented crisis as an opportunity for the development and enrichment of skills. He spoke about the paradigm change in the teaching and learning system. He mentioned the changes the institute underwent in this period which included switching from offline to online modes of teaching, the smooth and safe conduction of online exams, Virtual Convocation 2020, and Virtual Foundation Day Celebration 2020. He also urged all the stakeholders to work hard for achieving the Institute Goals of 2021 through focusing on research and patents to create a better research environment and academic ecosystem. To recognize and acknowledge the research outputs, he announced a special Research Newsletter of the Institute that would publish the research publications, sponsored and consultancy projects, research collaborations and patents of students and faculty members. He also announced the initiation of Best Researcher Award for faculty members and the Young Achiever Award, Distinguished Alumnus Award and Lifetime Achievement Award for Alumni of the Institute. The celebration was witnessed by the masses through Institute's Social Media handles.

Deliberations on NEP 2020

NIT Raipur deliberated the various aspects of **New National Education Policy (NEP) 2020** under the banner of **Transformation of the Technical Education** in the context of NEP 2020. The webinar event, which was organized on 27th Feb., 2021, was inaugurated by **Dr. A. M. Rawani**, *Director*, *NIT Raipur.* The event was aimed at discussing the specific provisions of the NEP and its impact on technical education. It also provided a common platform for dialogue and debate on the



various means and ways to imbibe the spirit of NEP that could bring the transformation in education and establish the fastchanging technology spectrum for the Institute. This was the first webinar of the Institute to bring awareness for in-house stakeholders to understand the NEP 2020 and to get feedback to serve as a base for setting up the forthcoming second and third webinars for deliberation with outside experts. As an important stakeholder of technical education at the national level, it is imperative for all staff, faculty members and students of the Institute to become conversant with the new policy paradigm of NEP and to finalize the blueprint for a smooth and fruitful transition of NIT Raipur in line with NEP. The event was convened by Dr. S. Bajpai, Professor, Department of Civil Engineering (CE) and coordinated by Dr. M. Chopkar, Associate Professor, Department of Metallurgical and Materials Engineering (DMME) and Mr. S. Pandey, System Admin, Central Computer Center.

Dr. Arif Khan joins as Registrar

Dr. Arif Khan joined as the *Registrar*, *National Institute of Technology Raipur* with effect from 24th Feb., 2021. Team Mirror on behalf of the NIT Raipur fraternity welcomes him.



NIT Raipur is all set to establish the First Technology Business Incubator of the State

Chhattisgarh's first Technology Business Incubator is going to be set up in the National Institute of Technology, Raipur. The Section-8 company of NIT Raipur, **NIT Raipur Foundation for Innovation & Entrepreneurship** is awarded with a grantin-aid of Rs. 7 Crore 95 Lakhs by DST under the NIDHI-TBI SCHEME. This achievement came due to tremendous efforts to promote innovation and entrepreneurship ecosystem at NIT Raipur its Career Development Centre (CDC), which is a brainchild of **Dr. A. M. Rawani**, the visionary Director of NIT Raipur. This new technology incubation center aims to develop a flair of innovation and entrepreneurship in the youth of Chhattisgarh and the students of NIT Raipur.

The activities and working of the NIDHI-TBI at NIT Raipur will be guided as per the conditions laid down by the Department of Science and Technology. A well-qualified team including a CEO, Incubation Manager and other manpower will be inducted soon for the proper functioning of the center. Over a period of five years, the incubation center targets to promote 70 new ventures.

The alumni network of NIT Raipur has extended a very strong handholding support to promote innovation and entrepreneurship at NIT Raipur. Responding to the appeal of **Dr. A. M. Rawani**, the Alumni Association of GEC-NIT Raipur has dedicated second floor of the Golden Tower building with 5500 square feet built-up area to the Technology Business Incubator of NIT Raipur. In addition to these, a strong mentorship was also provided by alumni **Dr. A. Gupta** (1987 batch of Mech. Engineering) whose constant guidance played a key role in getting the NIDHI-TBI grant approved from DST.

Director **Dr. A. M. Rawani** has extended his hearty congratulations to Team-CDC, all the Alumni and also to the students, faculty and entire NIT Raipur fraternity on this historical achievement and assured his continued support to strengthen such efforts in future as well.

Health Awareness Lesson

NIT Raipur organized a webinar on the topic Relieving of Mental Stress during Examination in Covid - 19 Pandemic times under HeAL on 15th Mar., 2021. The speaker of the event was **Dr. S. Parial**, *MBBS*, *MD* (*Psychiatry*), and **Dr. A. Varwandkar**, *Counselor and Career Developer*. The event was coordinated by **Dr. P. Diwan**, *Dean Students' Wellfare*.

Best Alumni Awards

As announced by **Dr. A. M. Rawani**, *Director*, *NIT Raipur* on **Republic Day 2021**, the Institute will start recognizing the contributions of the Alumni through the following three Best Alumni Awards:

- i. Lifetime Achievement Alumnus Award
- ii. Distinguished Alumnus Award
- iii. Young Achiever Alumnus Award

These awards will be presented to the selected Alumni on the Institute Foundation Day (1st Dec.,) every year starting from the Foundation Day 2021. For this year, the interested Alumni of the institute can submit their nomination by 30th Oct., 2021. The detailed guidelines including eligibility, criteria and process for

these awards is available on the Institute website at the link: <u>http://www.nitrr.ac.in/Alumni%20Awards.php</u>

Student Welfare Fund

NIT Raipur created a **Student Welfare Fund** from the **unclaimed caution money amount**, which can be utilized for full tuition fee reimbursement of students belonging to Economically Backward Sections and for Emergency Medical Assistance. Full tuition fee reimbursement from the Student Welfare Fund was awarded to 3 Students for academic session 2020-21.

COGNITION-First Quarterly Research Newsletter of NIT Raipur

As announced by Dr. A. M. Rawani, Director, NIT Raipur on Republic Day 2021, the Institute will start publishing a Quarterly Research Newsletter which is named as "COGNITION", the first issue of which will be published in the first week of April 2021. This newsletter will contain technical articles and will also showcase summaries of the research papers, book chapters, books published, patents published/awarded, research projects undertaken, etc. by all the faculty members and students across different departments during the respective quarter. The objective of this Research Newsletter is to recognize the research work carried out by the faculty members and students and foster an environment of interdisciplinary research and learning. The circulation of this newsletter will only be done through electronic mode, keeping in view the objectives of 'e-Abhiyan'. The Editorial Board of this Quarterly Research Newsletter comprises of Dr. A. Khare, Associate Professor, Department of Physics (DP), Dr. S. Das, Assistant Professor, Department of Metallurgical and Materials Engineering (DMME), Dr. Y. V. Babu, Assistant Professor, Department of Humanities and Social Sciences (DHSS), and Dr. A. K. Dash, Assistant Professor, Department of Mining Engineering (DME).

MoUs

MoU between NIT Raipur and 3D Srishti Private Limited

NIT Raipur signed an MoU with **3D SRISHTI Private Limited** on 29th Dec., 2020, to develop edible polymers, biodegradable materials, smart composite materials, and explore the usage of developed mate-rials in 3D printing technologies.



MoU between NIT Raipur and MSME

NIT Raipur executed a MoU with **Ministry of Micro, Small** and **Medium Enterprises** (**MSME**) on 6th Jan., 2021 to jointly implement the programme *Design Expertise for Manufacturing MSME sector* by providing expert advice and cost-effective solutions on real-time design problems.



MoU between NIT Raipur and MSME Technology Centre, Durg

NIT Raipur signed an MoU with **MSME Technology Centre**, **Durg** on 5th Feb., 2021 to develop skilled manpower in the

Academic Activities

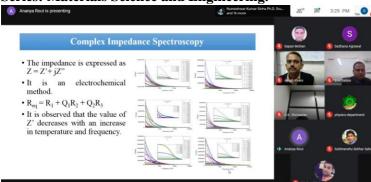
STTP/Conference/Workshop conducted

STTP on Computational Structure-based drug design, Biologics design, and Molecular dynamics

Department of Biotechnology (DBT), NIT Raipur organized a five-day self-financed online STTP on **Computational Structure-based drug design, Biologics design, and Molecular dynamics** from 14th Dec., to 18th Dec., 2020. The STTP was coordinated by **Dr. P. Gupta,** *HoD, DBT* and **Dr. A. Kumar,** *Assistant Professor, DBT.* The distinguished experts from industry and academia have been invited to deliver the lectures. The Courses covered with hands-on training in various topics such as *Biologics Suite and its Various Modules, Protein-Protein docking and Protein Interaction, Protein Engineering Tools, Surface Analysis,* and *Residue Mutations Surface* and *Hotspot analysis.*

2nd National Conference on Advanced Materials and Applications

Department of Physics (DP), NIT Raipur conducted the 2nd **National Conference on Advanced Materials and Applications (NCAMA-2020)** on 28th and 29th Dec., 2020 to discuss and debate on various fields of materials science at a common platform and to make researchers aware of the latest developments in the related allied area of research. The expert lectures were delivered by **Dr. P. K. Dwivedi**, *IIT Kanpur*, **Dr. B. R. Sankapal**, *VNIT Nagpur* and **Dr. S.P. Patel**, *GGU Bilaspur*. **Dr. A. Khare**, *Associate Professor*, *DP* was the Chairperson of the conference. The conference was coordinated by **Dr. B. K. Sahoo** and **Dr. S. M. Saini**, *Associate Professors*, *DP*. Thirty-five papers were selected for the presentation, which will be published in the forthcoming issue of **IOP Conference Series: Materials Science and Engineering**.

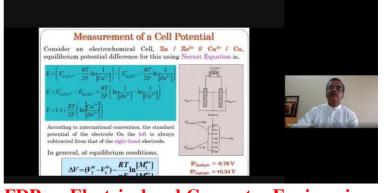


STTP on Advances in Corrosion Engineering and Electrochemical Characterization Techniques

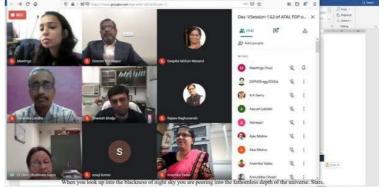
Department of Metallurgical and Materials Engineering(DMME), NIT Raipur organized a five-day online Short TermTraining Program (STTP) on Advances in CorrosionEngineering and Electrochemical Characterization

specialized domain of Engineering and Emerging Technologies by conduction of joint certification courses and short/long term training programmes for students, faculty and industry professionals.

Techniques from 2nd Jan. to 4th Jan.,2021. The keynote speaker of the event was **Prof. U. K. Mudali**, *Former Chairman & Chief Executive Officer, Heavy Water Board, Department of Atomic Energy, Mumbai* The program was concluded with feedback and a closing session, which was presided by **Dr. M. K. Manoj**, *Head, DMME* **and Dr. M. K. Tripathi**, *Assistant Professor, DMME*.



FDP on Electrical and Computer Engineering Department of Electrical Engineering (EE), NIT Raipur organized an ATAL sponsored Online FDP on **Electrical and Computer Engineering** from 4th Jan., to 8th Jan., 2021. **Dr. S. Gupta**, *Professor, EE* and **Dr. A. Yadav**, *Associate Professor, EE* coordinated the programme. The experts from eminent academicians from IITs, NITs and other institutions delivered the keynote lectures on various topics of Electrical and Computer Engineering by emphasizing their applications from the point of view of Artificial Intelligence.



International Conference on Materials and Technologies 2021

Department of Metallurgical and Materials Engineering (DMME) and Department of Mechanical Engineering (ME), NIT Raipur jointly organized an International Conference on Material and Technologies (MaterialTECH 2021) on 9th and 10th Jan., 2021. The conference was inaugurated by the Chief Patron Dr. A. M. Rawani, *Director, NIT Raipur*. Dr. S. Gupta, *Dean (R&C)* was the patron of the conference and the conference was chaired by Dr. M. K. Tripathi, *Assistant Professor, MME*. The conference instilled a dialogue between industrial organizations and academic institutions for the transformation of adequate knowledge from academia-research to industry. The selected and peer-reviewed research articles have already been published in SCI-indexed proceedings 'Materials Today Procedia'.



Electrochemical Impedance on **Spectroscopy: Fundamentals and Application**

Department of Metallurgical and Materials Engineering (DMME), NIT Raipur organized an online STTP on the topic **Electrochemical Impedance Spectroscopy: Fundamentals** and Application from 26th Feb., to 2nd Mar., 2021. The STTP which was organized under the chairmanship of Dr. M. K. Manoj, HoD, DMME, was coordinated by Dr. M. K. Chopkar, Associate Professor, DMME and Dr. M. K. Tripathi, Assistant Professor, DMME. Dr A. M. Rawani, Director, NIT Raipur inaugurated the event. Experts from academia and industries delivered the lectures on various topics such as Basics of Electrochemical Impedance Spectroscopy by Mr. S. K. Tripathi, Professor, Mahatma Gandhi Central University, Motihari.

Twinning Program: TEQIP, NIT Raipur and VEC Lakhanpur

NIT Raipur organized an STTP on Advances in Mechanical, Industrial Engineering and Management (AMIEM-2021) on 9th Mar., to 13th Mar., 2021. under the twinning activity between the NIT Raipur and VEC Lakhanpur. The event was jointly convened by Dr. R. Salhotra, Head, ME, and Dr R. N. Khare, Principal, VEC Lakhanpur-Ambikapur and coordinated by Dr. S. K. Mukti, Dr. Jagadish, Assistant Professors, ME, and Ms. P. Diwan, Department of Mechanical Engineering, VEC Lakhanpur. It provided training and up-gradation of knowledge for students, research scholars, faculty members and industrial persons who are working in the field of manufacturing processes, industrial engineering, and management.



Webinar on IPR and Patent Filing

Continuing Education Cell, NIT Raipur, organized a webinar on the topic of **IPR and Patent Filing** on 26th Mar., 2021. The aim of the event was to increase the present state of awareness regarding IPR and Patent Filing. Dr. A. Dubey, Scientist 'D', Chhattisgarh Council of Science and Technology delivered the Expert talk. He discussed about patents and copyrights, significance of Intellectual Property in the present scenario and the various stages in patent filing. The session was attended by students, PhD scholars and faculty members. The event was coordinated by Dr. S. Ghosh, Chairman Continuing Education Cell & Coordinator, IPR Cell.



Expert Lectures Delivered by Director, NIT Raipur

• Dr. A. M. Rawani, Director, NIT Raipur delivered an invited talk as a Panelist on the topic 'Reimagining Indian Higher Education: Scope of Automation & Opportunities' on 3rd Mar., 2021 in the 18th World Education Summit organized virtually by Elets Technomedia Pvt. Ltd. https://insights.eletsonline.com/2021/03/elets-exclusive-reimagining-indian-higher-education-scope-ofautomation-opportunities/

Expert Lectures Delivered by Institute Faculty/Staff

- Dr. S. G. Setti, Assistant Professor, ME, delivered an expert lecture on Composites Workshop on Frontier of 3D Printing Technology Industrial and Its Applications organized by the Department of Mechanical Engineering, Lakireddy Bali Reddy College of Engineering, Mylavaram,
- Andhra Pradesh from 7th to 19th Dec., Dr. L. K. Sahu, Assistant Professor, EE 2020.
- in 3D Printing during the National Dr. A. Yaday, Associate Professor, EE, delivered an expert lecture on Fault detection and classification schemes for smart grid system in AICTE sponsored STTP, which was organized Knowledge Institute of Technology, **Salem** on 16th Dec., 2020.
- delivered an expert lecture on the *Role of* IoT in Renewable Energy Distributed Generations in ATAL sponsored FDP organized by LNCT, Bhopal on 16th Dec., 2020.
- by Dr. S. L. Sinha, Professor, ME delivered an expert lecture on *Energy Conservation*: A New Frontiers in an AICTE-Training

Learning and Program Development on Energy Engineering, which was organized by Institute of Engineering & Technology, Devi Ahilya University, Indore on 16th Dec., 2020.

- Dr. G. P. Gupta, Assistant Professor, Department of Information Technology (IT), delivered an expert lecture on the • Dr. A. Sharaff, Assistant Professor, CSE, topic Introduction to Hyperledger Blockchain Framework in a five-day AICTE ATAL Faculty Development Programme on"Blockchain" in Bharati Vidyapeeth College of Engineering, Navi Mumbai on 17th Dec., 2020.
- Dr. A. Yadav, Associate Professor, EE delivered an expert lecture on the Application of IOT in Renewable Energy Based Distributed Generations in the ATAL sponsored Faculty Development Programme (FDF), which was organized by LNCT, Bhopal on 18th Dec., 2020.
- Dr. A. Sharaff, Assistant Professor, Department of Computer Science and Engineering(CSE), delivered an expert lecture on Machine Learning in a Webinar organized by RSR Rungta College of Engineering and Technology, Bhilai on 19th Dec., 2020.
- Dr. S. Ghosh, Associate Professor, EE delivered an expert lecture on Fractional Calculus in Modeling and Control in AICTE sponsored FDP organized by VSSUT, Burla on 21stDec., 2020.
- Dr. S. L. Sinha, Professor, ME delivered an expert lecture on Exergo Economic Analysis of Performance Evaluation of Thermal Power Plant at an AICTE Sponsored one-week Short Term Training Program, which was organized by Pragati Engineering College, Andhra Pradesh on 24th Dec., 2020.
- Dr. G. Bhatt, Assistant Professor, CE delivered an expert lecture on New Technologies in Rural Roads-Status and Research Requirements in AICTE-ISTE sponsored refresher program on Recent Practices in Design and Construction of Flexible and Rigid Pavements at PDA College of Engineering Gulbarga, Karnataka on 26th Dec., 2021.

- EE delivered an expert lecture on Devanagari Script Input Based P300 Speller System for Brain-Computer Interface in AICTE sponsored FDP organized by Kakatiya Institute of Technology and Science, Warangal (**KITSW**) from 4th to 8th Jan., 2021.
- delivered an expert lecture on Nature Inspired AI Techniques in an ATAL sponsored FDP organized by **GSSSIETW, Mysore** from 4th to 8th Jan., 2021.
- Dr. S. Ghosh, Associate Professor, EE delivered an expert lecture on Smart Grid: Implementation and Security Challenges in TEQIP-III sponsored FDP organized by Engineering College, Jhalawar on 8th Jan., 2021.
- Dr. S. L. Sinha, Professor, ME delivered Dr. A. Sharaff, Assistant Professor, CSE, an expert lecture on an AICTE Sponsored one-week STTP on Exergo Economic Analysis of Performance Evaluation of Thermal Power Plant, which was organized by **Pragati Engineering** College, Andhra Pradesh on 9th Jan., 2021.
- Dr. K. A. Siddiqui, Assistant Professor, Department of Chemistry, delivered an invited lecture on Structural Diversity in Metal-orotate Coordination Architectures Sustained by Hydrogen 6th Bond in the Conference of Bangladesh Crystallographic Association held online between 15th and • Dr. L. K. Sahu, Assistant Professor, EE 16th Jan., 2021.
- Dr. A. Khare, Associate Professor, DP delivered a keynote speech at a webinar on Inspire to Aspire organized by the Department of Govt. Physics, Nagarjuna PG Science College, Raipur • Dr. D. C. Jhariya, Assistant Professor, on 18th Jan., 2021.
- Dr. D. Sanyal, Associate Professor, Department of Architecture (DA), delivered an expert lecture on Smart Buildings to Smart Cities: A Necessary Transition in FDP on Smart City Development and Green Energy at Rajasthan Technical University, Kota on 20th Jan., 2021.

- (ATAL)-Faculty Dr. N. D. Londhe, Associate Professor, Dr. L. K. Sahu, Assistant Professor, EE delivered an expert lecture on the *Role of* AI in Electric Vehicle Charging Station in ATAL sponsored FDP organized by **BIT**, **Durg** on 21st Jan., 2021.
 - Dr. S. L. Sinha, Professor, ME delivered an expert lecture on an AICTE Sponsored one-week STTP on Exergo Economic Analysis of Performance Evaluation of Thermal Power Plant, which was organized by Pragati Engineering College, Andhra Pradesh on 21st Jan., 2021.
 - Dr. N. D. Londhe, Associate Professor, EE delivered an expert lecture on Fault Classification in Power System Distribution Network Integrated with Distributed Generators using CNN in a workshop organized by SATI, Vidisha from 28th to 29th Jan., 2021.
 - delivered an expert lecture on Introduction to Machine Learning and Supervised Learning in a Webinar organized by G Pulla Reddv Engineering College, Kurnool from 1st to 5th Feb., 2021.
 - Dr. G. Bhatt, Assistant Professor, CE, delivered an expert lecture on *Earthquake* Resistant Design of Structures in FDP on Sustainable Development in Civil Engineering, which was organized by Engineering Department, Civil MMMUT, Gorakhpur from 8th - 12th Feb., 2021.
 - delivered an expert lecture on Recent Trends and Advancements in EV and HEVs in an STTP under the banner of AQIS and organized by LNCT, Bhopal on 11th Feb., 2021.
 - Department of Applied Geology (DAG), delivered an expert lecture on the topic Essential of Groundwater Recharge and Multi-Electrode Resistivity Imaging System-Field and Data Interpretation during the Gyan Ganga Programme Initiative for Teaching Learning Excellence in the field of geology at Govt.

Dungar College, Bikaner on 12th Feb., 2021.

- EE delivered an expert lecture on Robotics Process Automation at the G H Raisoni Institute of Engineering and Technology Pune on 13th Feb., 2021.
- Dr. L. K. Sahu, Assistant Professor, EE, delivered an expert lecture on Multiple Input Converter for Renewable Energy Applications in a Faculty Development Programme organized by LNCT, Bhopal on 15th Feb., 2021.
- Dr. A. Yadav, Associate Professor, EE delivered an expert lecture on Micro-grid Fundamentals, Operation and Challenges in an FDP organized by LNCT, Bhopal on 16th Feb., 2021.
- Dr. D. C. Jhariya, Assistant Professor, DAG delivered an expert talk on Importance of Geological Knowledge in Groundwater Recharge Study and Remote Sensing, GIS Application in Groundwater Recharge Zone Delineation during the 4th Faculty Induction Programme, which was organized by the UGC-Human Resource **Development Centre, Doctor Harisingh** Gour Vishwavidyalaya, Sagar (MP) on 22nd Feb., 2021.
- Dr. N. D. Londhe, Associate Professor, *EE* delivered expert lectures on Introduction to Machine Learning and Its Applications and Deep Learning and Medical Imaging in AICTE-ISTE sponsored Online Induction Program, which was organized by R. C. Patel

Institute of Technology, Shirpur, • Dr. A. Sharaff, Assistant Professor, CSE, Maharashtra from 9th to 15th Feb., 2021.

- Dr. N. D. Londhe, Associate Professor, Dr. G. P. Gupta, Assistant Professor, IT delivered an expert talk on the topic Internet of Things: Enabling Technologies and Applications during the 6-week Technology Entrepreneurship Development Program (TDEP) sponsored by the **Department of Science &** Technology at the Healthcare Technology Incubation Centre, IIT Madras from 20th to 26th Feb., 2021.
 - Dr. N. D. Londhe, Associate Professor, EE delivered an expert lecture on EEG Classification Using Signal Deep Learning in an STTP organized by G. H. Raisoni Institute of Engineering and Technology (GHRIET), Pune on 24th Feb., 2021.
 - Dr. N. D. Londhe, Associate Professor, EE delivered an expert lecture on EEG Signal Classification Using Deep Learning in MATLAB in TEQIP-III sponsored FDP organized by Rajasthan Technical University, Kota and Shree **Digamber Institute of Technology** (SDIT), Dausa from 22nd to 26th Feb., 2021.
 - Dr. D. Pal, Assistant Professor, Department of Chemical Engineering (DCE), delivered a keynote speech on Wastewater treatment and energy production using Microbial Fuel Cells: Challenges and opportunities during the event Renewable Energy and Effluent Treatment (REET-2021), which was held at the Institute of Engineering and Technology, Lucknow on 1st Mar., 2021.

- delivered an expert lecture on Recent Trends in Machine Learning and Its Applications in an STTP organized by MANIT Bhopal from 1st to 5th Mar., 2021.
- Dr. L. K. Sahu, Assistant Professor, EE delivered an expert lecture on *Electric* Vehicle Charging Station Infrastructure in India in an STTP organized by MANIT Bhopal on 4th Mar., 2021.
- Dr. G. Bhatt, Assistant Professor, CE, delivered an expert lecture on Performance-Based Design of Seismic Base Isolation of structur An overview in **TEOIP III sponsored STTP on Advances** in Special Civil Engineering Structures and Materials at NIT Surat on 9th Mar., 2021.
- Dr. L. K. Sahu, Assistant Professor, EE delivered an expert lecture on Simulation of Electric Vehicle Charging Station in an STTP organized by LNCT, Bhopal on 10th Mar., 2021.
- Dr. L. K. Sahu, Assistant Professor, EE delivered expert lectures on Fault-Tolerant Operation of Multilevel Inverter and Multiple Input Converter for Electric Vehicle Applications in an FDP organized by NIT Warangal on 12th Mar., 2021.
- Dr. S. L. Sinha, Professor, ME, delivered an expert talk on Energy Conservation: A New Frontiers in a Workshop on Recent Trends in Clean Energy, which was organized by Chemical Engineering Department, MANIT, Bhopal on 12th Mar., 2021.

Research Frontier

Books Published

• Dr. A. M. Rawani, Director, NIT Raipur and Dr. A. K. Singh, Temporary Faculty, ME have published a book titled E-Revolution in Indian Higher Education with COVID-19. This book addresses various issues in the higher education sector that have arisen due to the COVID 19 pandemic and offers suggestions that will not only help in re-establishment of higher education and higher education institutions post the pandemic but will also help in implementation of the visionary Education 4.0 faster than expected.

The book is available for purchase at the link: https://www.amazon.in/dp/9390636140/ref=cm_sw_r_wa_apa _i_JB1FWN5QYS9T2JMZAE0Q.



Awards, Recognition, and Fellowships

- Dr. R. N. Patel, Associate Professor and Dr. L. K. Sahu, Assistant Professor, EE acted as Mentors and Jury members in the final round of ASEAN- India Hackathon 2020 organized by the Ministry of Education's Innovation Cell, New Delhi from 2nd to 4th Feb., 2021.
- Dr. A. Khare, *Associate Professor, DP* was the Guest of Honor at the *National Science Day* Celebration organized by the Department of Physics, Govt. Kaktiya PG College, Jagdalpur on 28th Feb., 2021.
- Dr. J. S. Eswari, Assistant Professor, DBT was appointed as a Special Issue Editor along with Dr. A. Nadda and Dr. V. Nguyen to carry out the special issue on Microbial Enzymes for Sustainable Energy and Environment in the Journal of Chemical Technology and Biotechnology (SCI), Wiley Publisher.
- Dr. D. C. Jhariya, Assistant Professor, DAG, was conferred with the Best Paper Award in Recent Trends in Geospatial Technology: Issues & Challenges at Ranchi on 19th Jan., 2021 for his paper titled Demarcation of Groundwater Potential Recharge Zone Using GIS-based MIF and Electrical Resistivity Technique in Raipur City, Chhattisgarh.

Patents

• Dr. G. S. Srinivasu, Assistant Professor, ME along with 4 Outside Faculty filed a patent title Process of Forming Three-Dimensional Objects with Enhanced Degradability, which was published by Controller General of Patents, Designs & Trademarks, Govt. of India. This was filed on 8th Jan., 2021 and published on 15th Jan., 2021 as per its file number 202141000882 A.

PhD Thesis Defended

- Mr. V. Ashok defended his PhD thesis titled Pattern Recognition Based Protection Schemes for Power Transmission Lines on 2nd Mar., 2021 under the supervision of Dr. A. Yadav, Associate Professor, EE.
- Mr. M. Dash defended his PhD thesis titled *Improving* Automated Detection of Psoriasis Lesion and Its Severity Assessment Using Swarm Intelligence and Deep Learning on 10th Feb., 2021 under the supervision of Dr. N. D. Londhe, and Dr. S. Ghosh, Associate Professors, EE.

Students' Corner

- Team Yield. Ai of NIT Raipur developed an application that helps in enhances cropyield and maintaining soil fertility. They developed a device to monitor crops and keep track of all relevant data using artificial intelligence algorithms. This was developed by Aman Kumar Dewangan, 6th sem., EE, Ananya Agrahari and Arnav Tripathi, 4th sem., EE who worked under the guidance and supervision of Dr. S. Gupta, Professor Incharge, Innovation Cell.
- Team ALPHA created a website 'LOCALE' to locate all the architectural works of various architects in a single platform to visualize geographical locations and provide authentic information regarding their projects with links. The external website was developed by Yukta Sinha, 8th sem., DA, Aditi Gupta, Sumit Kumar, 8th sem., IT and Siddharth Mishra, 4th sem., CSE. Who worked *under the guidance of* Mr. H. Poptani, Assistant professor, DA.
- Ashish Sharma, 8th Sem, Biomedical Engineering (BME) and Founder & CEO

- of Calidad Healthcare Pvt. Ltd. was honoured with the **Best Student Entrepreneur in Chhattisgarh** at the **Global Student Entrepreneur Awards** by *Entrepreneurs Organization (EO)* on 26th Jan., 2021. He received a trophy as well as one lakh rupees from EO, Raipur.
- Suparna Bitasoka, 4th sem., DAG won a silver medal at the National level Discussion and Competition, which was organized by the National **Environmental Youth Forum**an initiative of Paryavaran Sanrakshan Gatividhi on 26th Jan, 2021. Shri. Prakash Javadekar, Honorable Union Minister of Environment, Forest & Climatic Change, Govt. of India was the Chief Guest for the award distribution ceremony.
- Yogesh Bopche and Roshan Singh, 6th Sem., CE, and Amitabh Sinha, 6th Sem., Electronics and Communication Engineering founded a start-up project Vigour Meals under the guidance of Dr. G. Bhatt, Assistant Professor, Dept. of Civil Engineering, NIT Raipur. The start-

- Mr. Manik defended his PhD thesis titled Development of Single Phase Fault-Tolerant Topology of Multilevel Inverter with Reduced Number of Components Count for Photovoltaic Applications on 22nd Feb., 2021 under the supervision of Dr. S. Gupta, Professor and Dr. L. K. Sahu, Assistant Professor, EE.
- Ms. D. Lilhare defended her PhD thesis titled $(Cd_x-Zn_{1-x})S/CdTe$ Films for Solar Cell Applications on 23rd dec., 2020 under the supervision of Dr. A. Khare, Associate Professor, DP.

up aims to bring awareness to dietary problems faced by students and fitness enthusiasts.

- Pratik Singh Thakur, Sanjog Mohapatra 4^{th} sem., EE, Ajinkya Deshpande, Navoday and Satyam Shukla, 4th sem., ECE developed an innovative device based on IOT called Agribot, which was selected under the Seed grant project of the NIT Raipur. This innovative project was guided and supervised by Dr. L. K. Sahu, Assistant Professor, EE. This device aims to create live reports of the nutrient contents that are available in the soil and to analyze other parameters such as humidity and other macro and micronutrients present in it. The data collected by sensors would be transferred to a cloud platform from which results will be displayed on a website. This will help to take the necessary steps for soil treatment and to maximize the production of crops.
- Sarandeep Singh Khurana, 8th Sem, DMME and Ankit Sahu, 8th Sem, CE were selected for the prestigious Young

India Fellowship on 15th Mar., 2021 at Ashoka University, Delhi.

- Gara Shashi Kumar, 8th sem., BME & Devendra Kumar Dewangan, 8th sem., BME under the guidance of Dr. S. Gupta, Assistant Professor, BME, NIT Raipur developed a project to provide information and measurement parameters of blood pressure, spo2 level, heart rate, temperature, etc. at the domestic level at low cost. This innovative medical device can be used in households, small clinics, educational institutes etc.
- Ishneet Singh Bhatia, Shubham Rao, 8th sem., DMME, Nihal Dewangan, Himanshu Ranjan Shende, 8th sem., DBT, Tanay Naik, 8th sem., BME developed a smart sanitization tunnel

Placement

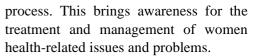
Mr Naman Jain, of computer science and engineering, secured a placement offer of **62.5 LPA** at **ByteDance**, **Singapore**. Naman's offer is the highest among all the campus placements offered for the batch of 2020-21.

which utilizes A.I. and IOT to provide an automatic touch-free sanitization experience. It works on a threefold process, where the person is checked for wearing a mask and having low body temperature, and then it goes for the sanitization option.

• Anjali Patle, Sakshi Bhandarkar and Priyanshi Sharma, 6th Sem., CSE won the Best Performing All Girls Team at Codebreak 2021 which was organized by MIT School of Engineering, Pune from 30th Jan. to 1st Feb. 2021. They built an all-in-one women healthcare platform that detects and diagnosis womenspecific health issues such as Breast Cancer, Cervical Cancer, PCOS and streamline the detection and treatment

CAT 2020

• Ayush Tiwari, 8th sem., ME scored an overall percentile of 99.99 in CAT 2020 honoring him among the top qualifiers of CAT in Chhattisgarh. He scored 96.77 percentile in verbal ability and reading comprehension, 100 percentiles in data interpretation and logical reasoning, and 99.93 percentile in quantitative ability.



• Anjali Patle, Sakshi Bhandarkar, and Priyanshi Sharma, 6th Sem., CSE won the Best Performing Women Team at HackNagpur -Central India's Largest Community Hackathon, which was organized by Hack Nagpur from 26th to 30th Dec., 2020. They built Stree - A **Breast Cancer Diagnostic Platform** Breast which provided Cancer Awareness, Detection by analyzing histopathological Images, Breast Examinations and a platform to streamline the entire process of treatment.

GATE 2021

Students of NIT Raipur have proven their mettle by giving an outstanding performance in the Graduate Aptitude Test in Engineering (GATE) 2021. The results for GATE 2021 was released by the Indian Institute of Technology, Bombay on March 19, 2021.

B Vinith and **Shivam Kishor** of NIT Raipur have both secured an **All India Rank of 1** in **GATE 2021** B Vinith is a student of the Materials and Metallurgical Engineering Branch of the 2019 batch. Shivam Kishore is a student of Mining Engineering Branch of batch 2021.



B Vinith (Metallurgical and Materials)



AIR – 1 Shivam Kishore (Mining)

The students of Institute brought laurels by securing good ranks in GATE 2021. Team MIRROR congratulates them and wishes them success in future

Student	AIR	Student	AIR	Student	AIR
B Vinitha (Metallurgical and Materials)	1	Shivam Kishore (Mining)	1	Aditi Bhattacharya (Biomedical)	12
Ayush Pandey (Mining)	21	Amritmay Biswas (Biomedical)	24	Pratyush Kesharwani (Biomedical)	27
Sai Shankar Parto (Electrical)	27	Harsha (Metallurgical and Materials)	32	Sai Ayyappa (Metallurgical and Materials)	36
Shivam Kumar (Mining)	43	S Jerom Vishal (Biomedical)	56	Rohan Chitale (Mining)	59
Abin Thomas (Biomedical)	66	Abhijeet Dadarya (Metallurgical and Materials)	77	Prajjwal Mandlik (Mining)	88
Shikhar Ranjna (Metallurgical and Materials)	107	Gara Shashi (Biomedical)	150	Manish Mishra (Chemical)	156
Kuntal Kumar Sahu (Biomedical)	167	Palay Manna (Civil)	197	Afia Siddaqui (Architecture)	198
Mayank Gupta (Chemical)	253	Gautam Kumar (Biomedical)	318	Arpita Shinde (Architecture)	393
Sajal Tiwari (Architecture)	416	Prabhjot Kaur (Mechanical)	417	Naveen Singh (Metallurgical and Materials)	421
Pankaj Yadav (Elecctrical)	438	Rituj Shrivastava (Architecture)	470	Shashwati Khawale (Architecture)	523
Ayush Paikra (Electrical)	579				

 Praveer Pandey,8th Sem., DME has been awarded with John Sidney Marshall Memorial Scholarship along with an award of \$1000 dollars by Society of Mining Metallurgy and Exploration (SME). This award was given to 13 students from Mining Engineering discipline globally for students having keen interest and innovation for Coal and Energy industry. The award ceremony was held at Phoenix USA on 5th March 2021.

- Christi. S. Mathai, 6th Sem., DME won the First Position in a Paper Presentation at NIT Surathkal held on 5th and 6th Mar., 2021.
- Purva Verma, Shivam Chandrakar, and Shivani Chaudhary, 4th Sem., DME won the Second Position in a Paper

Presentation at NIT Surathkal held on 5^{th} and 6^{th} Mar., 2021.

- Shumela Naz, 4th Sem., DME won the Second Position in a Quiz at NIT Surathkal held on 5th and 6th Mar., 2021.
- Narendra Kumar Rout and Nimisha Gupta *Research Scholar*, *MCA* Won the 1sr and 2nd Prize in Research Conclave heald at NIT Mizoram on 25th Mar., 2021.

Club/Committee Activities

Go Green Club

National Youth Day Speech Competition

Go Green Club, NIT Raipur organized a speech competition on 12th Jan., 2021 under the flagship programme National Youth Forum- an initiative of Paryavaran Sanrakshan Gatividhi.

The event was organized under the guidance of **Dr. D. C. Jhariya**, *Professor Incharge*, *Go Green Club*. The event was focused on discussing the importance of environmental awareness among the youth of the nation and taking steps towards a sustainable environment.



Republic Week Series

Go Green Club, NIT Raipur conducted an online events on the occasion of 72nd Republic Day named the Republic Week Series which was organized under the guidance of **Dr. D.C. Jhariya,** *Professor Incharge, Go Green Club.* There were three online events such as the Eco Quiz, Painting and Rangoli Competitions. The **Eco Quiz** was first organized on 26th Jan., 2021, which was followed by **Painting** and **Rangoli Competitions**. The theme of events was related to environmental issues and challenges.

Solid Waste Management Project



Go green club, NIT Raipur organized an online event on the subject of Solid Waste Management on 28th Feb 2021. The event

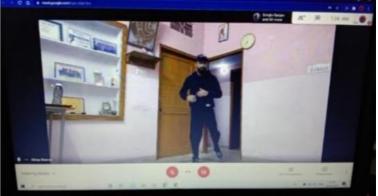
was organized by **Dr. D. C. Jhariya**, *Professor In-charge, Go Green Club*.

Nrityam - The Dance Club

Catch The Beat

Nrityam-The Dance Club, **NIT Raipur** organized an online Dance Competition titled **Catch the Beat** from 26th Dec., 2020 to 8th Jan., 2021 to arouse the flair of dance in the hearts of talented individuals. This event was conducted under the guidance of **Dr. M. Singh**, *Professor Incharge*, *Nrityam*.

Street Dancer 2.0



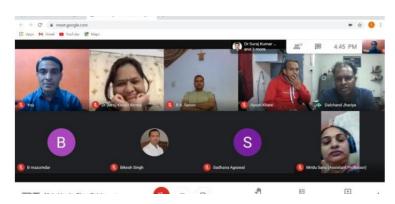
Nrityam-The Dance Club, **NIT Raipur** organized an online Dance competition called **Street Dancer 2.0** from 29th Jan., to 16th Feb., 2021 to serve as an opportunity for passionate dancers to showcase their skills. This competition was judged by **Mr**. **Prateek Modi**, Aka Professor Pop. This event was conducted under the guidance of **Dr. M. Singh**, Professor Incharge, Nrityam.

Nrityashaala - Dance Workshop

Nrityam-The Dance Club, NIT Raipur organized an Online Dance Workshop was named as Nrityashala Dance ki Pathshala from 20th to 23rd Feb., 2021. Mr. A. Sharma, *Founder of Hiphopsthaan* was the instructor of the workshop. He taught three different dance choreography styles: House, Locking and Hip-Hop. This event was conducted under the guidance of Dr. M. Singh, *Professor Incharge, Nrityam*.

Matribhasha Divas

Rajbhasha Samiti, NIT Raipur celebrated **Matribhasha Diwas** on 21st Feb., 2021. Online events like the Essay competition, Slogan competition, Singing competition and Drawing competition were organized. The program was coordinated by **Dr. S. M. Saini**, *Professor Incharge*, *Rajbhashsa Samit*i, **Dr. K. Verma**, *Associate Professor*, *Department of Computer Application* and **Dr. M. Sahu** *Assistant Professor*, *IT*. The performance of the participants was judged by **Dr. S. Agarwal**, *Professor*, *DP*, **Dr. B. Mazumdar**, *Associate Professor*, *DCE* and **Dr. A. Khare** *Associate Professor*, *DP*.



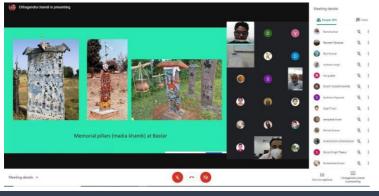
EBSB Cell Cleanliness Oath

NIT Raipur swore **a cleanliness oath** on 30th Jan., 2021 on the occasion of Martyr's Day. The ceremony was organized under **Ek Bharat Shreshtha Bharat (EBSB)**, Flagship program of



of cleanliness. **Dr. A. M. Rawani**, *Director, NIT Raipur* administered the oath of cleanliness to all. Two-minute silence was also observed on the occasion of Martyr's Day in memory of Mahatma Gandhi. **Dr. S. Gupta**, *Dean, Research & Consultancy*, **Dr. S. Agarwal**, *Nodal Officer, EBSB*, **Dr. D. Sharma** and **Mr. M. Tenguriya**, *Professor Incharge, EBSB Cell* organized the event.

Webinar on Visual Arts of Chhattisgarh



EBSB Cell, NIT Raipur organized a webinar on **Visual Arts of Chhattisgarh** to promote Chhattisgarhi language, culture and arts on 19th Feb., 2021. In this event, **Mr. C. Usendi**, *Assistant Professor, IKS University, Khairagarh*, joined as a Speaker. He conveyed the knowledge about art and sculpture of Chhattisgarh referring to Dokra Art, Bastar Art, Chhattisgarhi Cave Paintings and Metal arts. The event was coordinated by **Dr. S. Agarwa**l, *Nodal Officer, EBSB*, **Dr. D. Sharma** and **Mr. M. Tenguriya**, *Professor Incharge, EBSB Cell*.

Unity of India- A musical event

EBSB Cell, NIT Raipur organized a virtual musical event to celebrate the **Unity of India** on 6th Mar., 2021. In the event Chhattisgarhi, Gujrati, Hindi and Bengali songs were performed by the participants. The event was coordinated by **Dr. S.** Agarwal, *Nodal Officer, EBSB*, **Dr. D. Sharma** and **Mr. M.** Tenguriya, *Professor Incharge, EBSB Cell.*



Mock placement

Sahyog-The Mentorship Club, NIT Raipur conducted the **Mock Placement** on 14th Feb., 2021 for first-year students and on 21st Feb., 2021 for second-and third-year students. The event was conducted in three rounds as per the **real standards of the campus placement process**, which included an aptitude round followed by a technical round and HR round.

National Youth Day Webinar, painting and essay writing competition

Team NSS, NIT Raipur celebrated the occasion of National Youth Day with multiple activities which included a webinar, a painting competition and an essay-writing competition. Mr. A. Bachelet, Integration Project Manager, Life Project 4 Youth, France was the Chief Guest of the event who inspired the youth about embracing entrepreneurship and becoming world leaders. The topic of the painting and essay writing competition was "Life of Swami Vivekananda", given the occasion was his birth anniversary. The event was organised under the guidance of Dr. G. Bhatt, Professor Incharge, NSS, NIT Raipur. The entire event was coordinated by Mr. T. Behera, NSS Head Coordinator and Ms. D. Karteeka, Assistant Coordinator.

5th edition of TEDx NIT Raipur

TEDx, NIT Raipur organized the 5th edition of TEDx virtually on 28th Feb., 2021. The event hosted 7 eminent speakers with diverse backgrounds and vivid impactful real-life stories. The speaker of the event were **Mr O. P. Rawat**, *IAS* (*retired*) 22nd *Election Commissioner of India*, **Ms S. Rao**, *Model*, *fbb Colors*

Femina Miss India 2018 2nd Runner up, Ms K. Shree, Story teller. Dr. S. Gupta, Professor, IIM Banglore, Ms S. Pandey, IAS officer, 4th rank in UPSC 2016, Ms V. Agarwal, WIM (women International master), Chess player, member of Gold medallist Indian chess team of Online Chess Olympiad 2020 and Mr. N. Sharma, Film maker and travel blogger. The Event was coordinated under the guidance of Dr. S. Das, Professor Incharge TEDx, NIT Raipur.



E-Shruti

Raaga - The Music Club, NIT Raipur organized "E-SHRUTI"- the Music Festival of NIT Raipur on 14th Mar., 2021. Dr A. M. Rawani, Director, NIT Raipur was the Chief Guest of the event. The event was organised under the guidance of Dr. P.

Alumni Achievement

- Ms. S. Upadhyay, DCE (2020), was appointed as Scientific Officer at Bhabha Atomic and Research Centre (BARC), Kalpakkam Unit, Tamil Nadu.
- Mr. A. Shrivastava, EE (1995), Chief Manager (Design), HAL, Lucknow led the design and development of Starter-Generator for ALH and LCH. This technology was developed indigenously for the first time in India, which can be used in all helicopters and small aircraft.
- Rear Admiral S. Sharma, EE (1987) was promoted as Admiral Superintendent, Naval Ship Repair Yard, Kochi, Kerala.

Diwan, Dean Student welfare, the coordinator of the event was Dr. S. Sanyal and Dr. A. Khare, , Professor Incharge, Raaga.



Virtual Yoga Camp:

Yoga camps are organised in the Institute regularly to address physical and mental health of the students, faculty, and staff. In the era of COVID focusing the physical and mental well-being of NIT Raipur fraternity daily virtual yoga classes of one-hour, Virtual Yoga Camp is being organized from 20th Feb., 2021 to 31st May, 2021 Mr. S. Nishad and Dr M. Shukla, Faculty of Yoga and Health, DHSS are the facilitators of the camp.

- S. M. Tripathi, ME (2020), was awarded the CNS Gold Medal in overall order merit at the passing out parade held at Indian Naval Academy (INA), Ezhimala, Kerala on 26th Jan., 2021. He ranked as the best among sixty-two trainees and received an award from Vice Admiral M A Hampiholi, Commandant, INA.
- Mr P. K. Sinha, DME (1982) received the prestigious award **CSR TIMES-EDITORS CHOICE AWARD-2020.**
- Ms. M. Yadav, Arch (2019) is selected as Scientist/Engineer 'SC'- Architecture at Indian Space Research Organization (**ISRO**), Bengaluru.

Contribution to the Institution

Donations

NIT Raipur expresses sincere gratitude towards the following people who have made their generous donations to the Institute. • Shri Shailesh Chandak

• Shri Pankaj Sarda

- Shri Amey Tripathi
- Dr. Chandrakant Thakur.

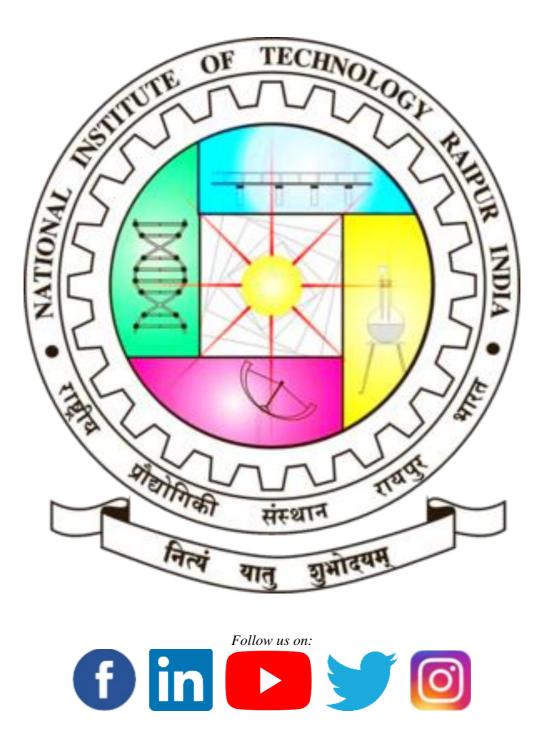
Appeal

Ever since its establishment in 1956, the institute has been serving and maintaining steady progress to achieve a unique feat in the highly competitive area of engineering and technology. To focus on cutting-edge multidisciplinary and frontier areas of engineering and technology as well as innovation-based research, a strong and continuous financial support from alumni, faculty members, students and all well-wishers is the need of the hour. All the stakeholders of the Institute have a major role in building a corpus fund to support various teaching and research infrastructures, and other allied facilities for the welfare of students. NIT Raipur appeals to all alumni, faculty members, students and well-wishers for their contribution to the NIT Raipur Donation Fund. The financial donation is exempted under section 80G (5) (vi) of the Income Tax, 1961 Vide IT Order Number ITBA/EXM/S/80G/2019-20/1015830613(1) dated 29/04/2019.

How to Contribute:

The payment may be made either online (<u>https://www.eduqfix.com/OnlineForms/nitrdfform/add</u>).or directly into the bank account of "NIT Raipur Donation Fund".

Name of the Account: NIT Raipur Donation Fund Account Number: 50100254910087 Name of the Bank: HDFC Bank, Tatibandh Branch, Raipur IFSC Code: HDFC0003692



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