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May - August, 2021

Message from Director



It is heartening to note that the new edition of the newsletter is going to be published again with the persistent efforts of our editorial team and enthusiastic contributors for it. After scorching hot summer, we have experienced a hot and humid spell of the rainy season with erratic showers. The climate becomes very unreliable and fickle like the turbulent mind of modern human beings caused due to modern materialistic lifestyles. As a result, we are facing the vagaries of climate change along with unprecedented problems of global warming. We cannot escape from the current onslaughts of extreme climate events namely floods, cyclones, stormy rainfall, aridity, and droughts. The impact of climate change and global warming on all living beings including human beings is quite far-reaching for which there is no immediate and tangible solution. Of course, human beings can use their fertile mind and intellect to find a suitable solution, provided they are educated properly. Unfortunately, people are not in a position to seek suitable solutions for the life-threatening current problems as modern education is marred with profit maniac market and becomes a

self-annihilating entity like a suicide bomb as it is involved in the destruction of very lives in this beautiful blue planet in the name of development. We can strive to find the tangible solution to the life-threatening problems of climate change and global warming perpetuated by so-called self-styled educated people provided these messiahs of humanity are to be re-educated about the Indian ways of living with our beloved Mother Nature of all living and non-living beings while leading a simple and purposeful life for making human life sublime. For this purpose, the age-old culture and tradition of Indian civilization that has survived the onslaughts of ruthless and brutal invaders is to be re-looked and rejuvenated with a modern outlook that can be adopted by people in a systematic and organized manner. In other words, the basic principle of human life of Indian culture and tradition which is grounded with nature-centric lifestyle is to be identified of course with the elimination of its unwanted drawbacks which can be used to design and develop a sustainable and eco-friendly model for sustaining of all forms of lives on this beautiful planet. This nature-centric model has to be embraced with vigour and vitality from the core of the heart by the majority of people including government policies and programs so that we can integrate our life with eternal Mother Nature which is nothing but manifested form of Brahman as described in most ancient scripture of Veda.

ॐ सर्वशां स्वस्तिर्भवतु ।

सर्वशां शान्तिर्भवतु ।

सर्वशां पुर्णभवतु ।

सर्वशां मङ्गलंभवतु ।

ॐ शान्तिः शान्तिः शान्तिः ॥

Prof. Debi Prasad Mishra
Director, NITTR, Kolkata

The Story of the First Picture of a Black Hole

Dr. Kinsuk Giri

Asst. Prof., Dept. of Computer Science and Engineering,
NITTTR Kolkata

Black hole is the end product of massive stars. As stars reach the ends of their lives, most will inflate, lose mass, and then cool to form white dwarfs and subsequently the white dwarfs are destined to reduce either super dense neutron stars or so called black holes. It is the mathematically defined region of spacetime exhibiting such strong gravitational pull that no particle or even light can escape from it. Hence, Black holes are points in space that are so dense they create deep gravity sinks.

The term '*event horizon*' which is a measure called radial distance is the boundary defining the region of space around a black hole from which nothing can escape (Fig. 1). Anything that passes this point will be swallowed by the black hole and forever vanish from our known universe. The size of an event horizon which is generally termed as black hole size depends on the black hole's mass. For a non-rotating black hole, the radius of the event horizon is known as the Schwarzschild radius, and marks the point at which the escape velocity from the black hole equals the speed of light.

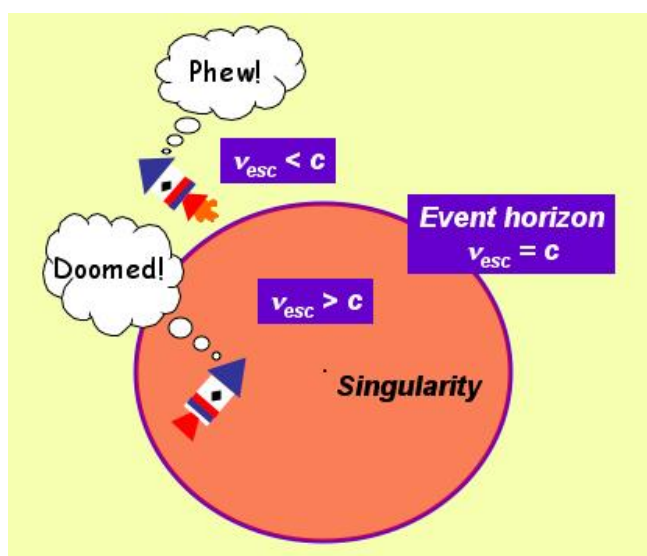


Fig1: Basic structure of a black hole
(PC: <https://astronomy.swin.edu.au>)

If we ask ourselves; how big are we here on Earth when compared to other planets and the sun? Fig.2 will give you a rough idea on this query. However, sun is not only the star or object at the solar system. The solar system

has a range of different sized objects. The sun is just a little too small to form a black hole, but suppose we squashed it! How big would that black hole be? Interestingly, it would be about 5.84 kms wide, about the size of a village or small town. There are four types of black holes: stellar, intermediate, supermassive, and miniature depending upon its mass.

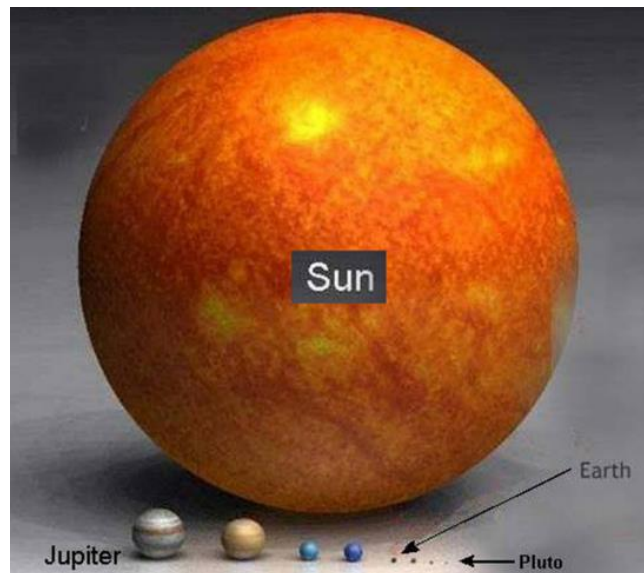


Fig 2: Comparative planetary and the sun
(PC: <https://www.co-intelligence.org>)

The concept of a black hole was first hinted at back in the 1780s. The mathematics behind them came from Albert Einstein's 1915 general theory of relativity. And the phenomenon got its name "black hole" in the 1960s. But until now, all "pictures" of black holes have been illustrations or simulations. Since black holes are 'black', there cannot be any direct observational evidence of them. Thus they must be observed by detecting the radiations emitted by accreting matter. However, about two decades ago, astronomers began wondering if they might be able to capture a photo of a black hole if it was backlit against the hot swirling gases close to its event horizon.

Two year's back, on 10th April, 2019, the same group of scientists announced they had captured the first-ever image (fig. 3) of a black hole! The image in fig.3 shows the black hole at the centre of Messier 87 (M87*), a massive galaxy in the nearby Virgo galaxy cluster. This black hole M87* is 55 million light-years from earth and is 6.5 billion times the mass of the Sun. They used the Event Horizon Telescope (EHT), a worldwide network of eight radio telescopes, that together form a virtual telescope the size of the earth. Interlinking the eight telescopes has resulted in unprecedented sensitivity and resolution. Interestingly, the shape and size of the shadow perfectly match the expectations based on Einstein's general theory of relativity and the existence of an event horizon

After two years, on March 2021, EHT published a new view of the massive object at the centre of the Messier 87 (M87*) galaxy: how it looks in polarised light as shown in fig.4. This is the first time astronomers have been able to measure polarisation, a signature of magnetic fields, this close to the edge of a black hole. The lines mark the orientation of polarisation, which is related to the magnetic field around the shadow of the black hole. It has been compared the photo with supercomputer simulations of different black-hole models. These simulations match up surprisingly well with the observations and make it possible to determine the characteristics of the black hole.

This discovery is ground breaking in many ways. It presents the direct evidence for the existence of black holes, showing that Einstein (and hence the theory of General Relativity) was right, It shows the first ever image of lensed and relativistic beamed emission on the scale of the event horizon in extreme gravity, And it helps to constrain models for jet formation and energy extraction from black holes. The good news is that by now, EHT already included three more telescopes, i.e, total 11 observatories. Adding more telescopes should allow the team to extend the image. The same group also plan to make observations using light having a slightly higher frequency. That can further sharpen the image.

Refernces:

1. K. Akiyama et al. [Event Horizon Telescope Collaboration], First M87 Event Horizon Telescope Results. I. The Shadow of the Supermassive Black Hole, *ApJ*,. 875, no. 1, L1 (2019)
2. K, Akiyama et al. [Event Horizon Telescope Collaboration], First M87 Event Horizon Telescope Results. VIII. Magnetic Field Structure near The Event Horizon, *ApJL*, 910, L13, 2021
3. <https://www.space.com/>
4. <https://astronomy.swin.edu.au/cosmos/>
5. <https://www.jpl.nasa.gov/>
6. <https://spectrum.ieee.org/>
7. <https://www.ru.nl/astrophysics/black-hole/>

Teachers' Training

Teachers' Training During the period of May to August 2021, a total of 4453 technical teachers have been trained, through various short-term training programmes, broadly in the areas of content updating, management, pedagogy and professional skill development. A total of 97 training programs were conducted for the teachers of polytechnic colleges and engineering colleges all over India. Due to lockdown situation these programmes have been conducted primarily in online mode. Details of the programmes, such as programme title, programme coordinator, date etc. are given below.

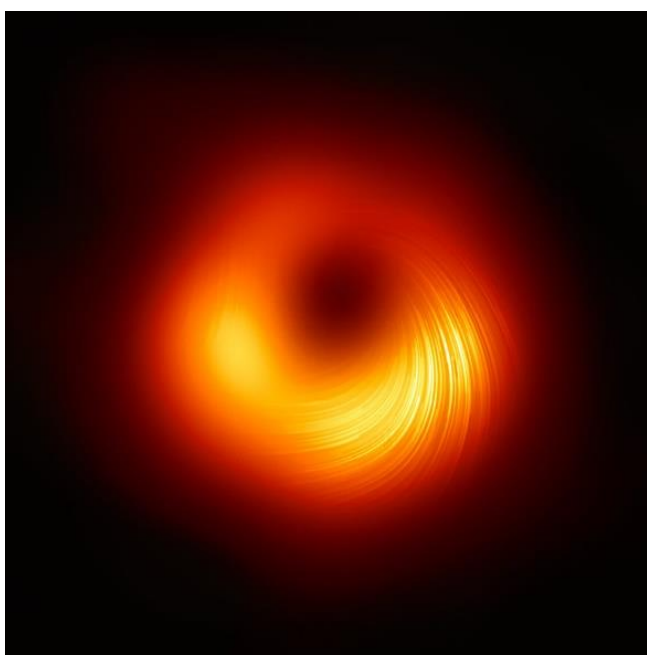
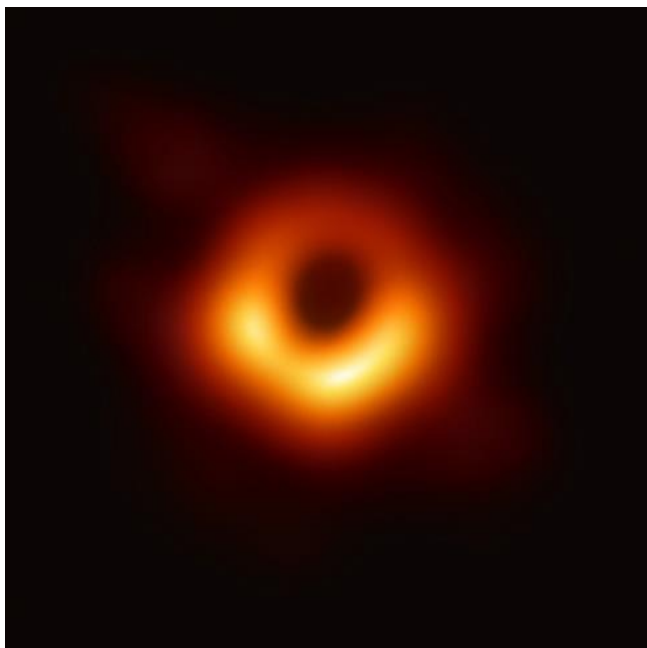


Fig.3: First ever image of M87*

Fig.4: A view of the M87* in polarised light

(PC: <https://www.eso.org/public/images/>)

(PC: <https://www.eso.org/public/images/>)

List of Training Programmes (May to August 2021)

Sl. No.	Programme Co-ordinator	Prog. Code	Programme Title	From	To
1	Habiba Hussain	ICTSPL01	Evaluating Students' Performance (with special focus on mentoring) - Gargi Memorial Institute of Technology, Baruipur, Kolkata	03/05/2021	07/05/2021
2	Urmila Kar	ICT037	Induction Training programme for Technical Teachers	03/05/2021	14/05/2021
3	Rayapati Subbarao	ICT026	NBA Accreditation and SAR preparation	10/05/2021	14/05/2021
4	Samiran Mandal	ICT040	Introduction to Automobile Engineering	10/05/2021	14/05/2021
5	Rajeev Chatterjee	ICT042	IP Networking	10/05/2021	21/05/2021
6	Chandan Chakraborty & Kinsuk Giri	ICT044	Machine Learning with Python	17/05/2021	21/05/2021
7	Soumitra Kumar Mandal	ICT050	MATLAB & LABVIEW Applications in Engineering	17/05/2021	21/05/2021
8	Subrata Mondal	ICT051	Development of Laboratory Instruction and Manual	17/05/2021	21/05/2021
9	Mithu Dey	ICT053	Seismic Analysis of Structures using Software	24/05/2021	28/04/2021
10	Indrajit Saha	ICT054	Image Processing using MATLAB	24/05/2021	28/05/2021
11	Ranjan Dasgupta	ICT055	Concepts of Software Engineering	24/05/2021	28/05/2021
12	Arpan Kumar Mondal	ICT056	ICT Tools for Teaching and Learning 1	24/05/2021	28/05/2021
13	Habiba Hussain	ICT057	Soft Skills for Teachers	31/05/2021	04/06/2021
14	Nirmal Kumar Mandal	ICT058	Introduction to Manufacturing Systems	31/05/2021	04/06/2021
15	Santanu Bhanja	ICT059	Philosophy of RC Design – From Prescriptive as per Codes of Practice to Performance Based	31/05/2021	04/06/2021
16	Subrata Mondal	ICT060	Advanced Materials Science and Engineering	31/05/2021	04/06/2021
17	Subrata Chattopadhyay	ICT061	Teaching – Learning Process using Instructional Media	31/05/2021	04/06/2021
18	Nirmal Kumar Mandal	ICT062	Applied Machine Learning in Engineering	07/06/2021	11/06/2021
19	Rayapati Subbarao	ICT063	NBA Accreditation and SAR Preparation	07/06/2021	11/06/2021
20	Dipankar Bose	ICT064	Skill Assessment in Laboratory and Workshop Classes	07/06/2021	11/06/2021
21	Prasanta Sarkar	ICT065	Engineering Capstone Project	07/06/2021	11/06/2021
22	Samiran Mandal	ICT066	Development of Mechanical Engineering Laboratory Experiments and Instruction Sheets	07/06/2021	11/06/2021
23	Sheela Yadav Rai	ICT067	Renewable Energy Sources and Emerging Technologies	07/06/2021	11/06/2021
24	Sukanta Kumar Naskar	ICT068	Induction Training	07/06/2021	18/06/2021
25	Uday Chand Kumar	ICT069	Fundamental of Surveying	07/06/2021	11/06/2021
26	Urmila Kar	ICT070	Capstone Project	14/06/2021	18/06/2021
27	Chandan Chakraborty	ICT071	Machine Learning with R Programming	14/06/2021	18/06/2021
28	Jagat Jyoti Mandal	ICT072	Settlement & Bearing Capacity Analysis of Shallow Foundations	14/06/2021	18/06/2021
29	Sagarika Pal	ICT073	Programming and Automation using PLC	14/06/2021	18/06/2021
30	Samir Roy	ICT074	Fuzzy and Rough Set Theory	14/06/2021	18/06/2021
31	Soumitra Kumar Mandal	ICT075	Solar Photo Voltic System	14/06/2021	18/06/2021
32	Subrata Mondal	ICT076	Fundamental and Applications of Nanomaterials	14/06/2021	18/06/2021
33	Rajeev Chatterjee & Ranjan Dasgupta	ICT079	Design and Development of content for e-Learning	14/06/2021	25/06/2021

34	Kinsuk Giri	ICT080	Numerical and Statistical Methods with SCILAB	21/06/2021	25/06/2020
35	Dipankar Bose	ICT081	Fluid Powered Systems	21/06/2021	25/06/2021
36	Indrajit Saha	ICT082	Machine Learning and it's Applications	21/06/2021	25/06/2021
37	Mithu Dey	ICT083	Advanced Structural Analysis and Introduction to FEM	21/06/2021	25/06/2021
38	Nirmal Kumar Mandal & Santanu Bhanja	ICT084	Course on Ancient Engineering, Science and Technology	21/06/2021	25/06/2021
39	Sheela Yadav Rai	ICT085	Induction Training	21/06/2021	25/06/2021
40	Subrata Chattopadhyay	ICT086	Sensors and Transducers	21/06/2021	25/06/2021
41	Arpan Kumar Mondal	ICT077	ICT Tools for Teaching and Learning 2	28/06/2021	02/07/2021
42	Habiba Hussain	ICT087	Online Pedagogy	28/06/2021	02/07/2021
43	Soumitra Kumar Mandal	ICT088	Digital Electronics using VHDL	28/06/2021	02/07/2021
44	Subrata Mondal	ICT089	Entrepreneurship Development	28/06/2021	02/07/2021
45	Sukanta Kumar Naskar	ICT090	Fundamentals of Modern Office Management	28/06/2021	02/07/2021
46	Chandan Chakraborty	ICT091	Research Methodology and Data Analytics	05/07/2021	16/07/2021
47	Dipankar Bose & Samiran Mandal	ICT092	Instructional Planning	05/07/2021	16/07/2021
48	Mithu Dey	ICT093	Professional Values and Ethics	05/07/2021	09/07/2021
49	Prasanta Sarkar	ICT094	MATLAB and its Applications	05/07/2021	09/07/2021
50	Rajeev Chatterjee	ICT095	Network Infrastructure Management	05/07/2021	09/07/2021
51	Rayapati Subbarao	ICT096	NBA Accreditation and SAR Preparation	05/07/2021	09/07/2021
52	Sagarika Pal	ICT097	Laboratory Instruction for Electrical, Electronics and Instrumentation Engineering	05/07/2021	09/07/2021
53	Sailendra Nath Mandal	ICT098	Environmental Pollution and Solutions	05/07/2021	16/07/2021
54	Sheela Yadav Rai	ICT099	Power Generation from Energy Resources	05/07/2021	09/07/2021
55	Soumitra Kumar Mandal	ICT100	Analog Electronics Circuit Design	05/07/2021	09/07/2021
56	Subrata Chattopadhyay	ICT101	Power Generation And Control	05/07/2021	09/07/2021
57	Subrata Mondal	ICT102	Laboratory Safety Management	05/07/2021	09/07/2021
58	Indrajit Saha, Sagarika Pal, Kinsuk Giri & Arpan Kumar Mondal	ICT103	Problem Based Learning	12/07/2021	16/07/2021
59	Subrata Mondal	ICT104	Induction Training	12/07/2021	16/07/2021
60	Uday Chand Kumar	ICT105	Ecology and Environmental Studies	12/07/2021	16/07/2021
61	Subrata Chattopadhyay	ICT106	Control and Automation	19/07/2021	23/07/2021
62	Sukanta Kumar Naskar	ICT107	Managerial Skills for Technical Teachers	19/07/2021	23/07/2021
63	Habiba Hussain	ICT109	Essentials of OBE	26/07/2021	30/07/2021
64	Indrajit Saha	ICT110	Introduction to Data Analytics	26/07/2021	30/07/2021
65	Jagat Jyoti Mandal	ICT111	Fundamental Concepts of Geotechnical Engineering	26/07/2021	30/07/2021
66	Mithu Dey	ICT112	AutoCAD for Engineers	26/07/2021	30/07/2021
67	Sailendra Nath Mandal	ICT113	Environmental Engineering Laboratory: Equipment and Procedure	26/07/2021	06/08/2021
68	Sheela Yadav Rai	ICT114	Role of Technical Institutions in Community Development	26/07/2021	30/07/2021
69	Soumitra Kumar Mandal	ICT115	Application of MATLAB in Control System and Fuzzy Logic Control	26/07/2021	30/07/2021

70	Prasanta Sarkar	ICT117	Application of MATLAB in Engineering	02/08/2021	06/08/2021
71	Rajeev Chatterjee	ICT118	Networking Principles, Management and Administration	02/08/2021	06/08/2021
72	Ranjan Dasgupta and Samir Roy	ICT119	Concepts of Software Engineering	02/08/2021	06/08/2021
73	Rayapati Subbarao	ICT120	How to Write Thesis and Research paper	02/08/2021	06/08/2021
74	Subrata Chattopadhyay	ICT121	Power Generation And Control	02/08/2021	06/08/2021
75	Subrata Mondal	ICT122	Development of Laboratory Instruction and Manual	02/08/2021	06/08/2021
76	Uday Chand Kumar	ICT123	Laboratory Practice on Civil Engineering Materials – Bricks & Cement	02/08/2021	06/08/2021
77	Urmila Kar	ICT124	Outcome Based Curriculum – Design and Implementation	02/08/2021	13/08/2021
78	Chandan Chakraborty	ICT125	Choice Based Credit System (CBCS) and Student’s Performance Evaluation	09/08/2021	13/08/2021
79	Kinsuk Giri	ICT126	Problem Solving with PYTHON	09/08/2021	13/08/2021
80	Prasanta Sarkar	ICT127	Control System analysis and Design with MATLAB	09/08/2021	13/08/2021
81	Sagarika Pal	ICT128	Industrial Process Control	09/08/2021	13/08/2021
82	Sheela Yadav Rai	ICT129	Estimating & Costing of Non-conventional Energies	09/08/2021	13/08/2021
83	Soumitra Kumar Mandal	ICT130	CAD for Digital Electronics Circuits	09/08/2021	13/08/2021
84	Habiba Hussain	ICT131	People Management & Leadership	09/08/2021	13/08/2021
85	Mithu Dey	ICT132	Advanced Structural analysis using software	09/08/2021	13/08/2021
86	Rayapati Subbarao	ICTSPL02	Outcome Based Education and NBA-SAR Preparation (St. Xavier's University, Kolkata)	10/08/2021	11/08/2021
87	Arpan Kumar Mondal & Sukanta Naskar	ICT133	Managerial and Technical Skills for Non-Teaching Employees of Technical Institutes	23/08/2021	27/08/2021
88	Dipankar Bose	ICT134	Refresher course on Fluid Mechanics	23/08/2021	27/08/2021
89	Indrajit Saha	ICT135	Introduction to Image Processing	23/08/2021	27/08/2021
90	Jagat Jyoti Mandal	ICT136	Analysis & Design of RCC Shallow Foundations	23/08/2021	27/08/2021
91	Santanu Bhanja	ICT137	Code on Plain and Reinforced Concrete - IS:456-2000 with Amendments – Explanation, Interpretation and Limitations	23/08/2021	27/08/2021
92	Sheela Yadav Rai	ICT138	Community Development through Technical Institutes	23/08/2021	27/08/2021
93	Soumitra Kumar Mandal	ICT139	Analysis of Electrical and Electronics Circuits using MATLAB	23/08/2021	27/08/2021
94	Subrata Chattopadhyay	ICT140	Industrial Process Control	23/08/2021	27/08/2021
95	Subrata Mondal	ICT141	Entrepreneurship Development	23/08/2021	27/08/2021
96	Urmila Kar	ICT143	Induction Training	23/08/2021	03/09/2021
97	Arpan Kumar Mondal	ICT144	Introduction to Welding Processes	30/08/2021	03/09/2021

Special Training Programmes conducted

- Dr. Habiba Hussain conducted a one-week special training programme on **“Student Assessment & Evaluation with Special Focus on Mentoring”** during 3rd to 7th May 2021 for faculty members of Gargi Memorial Institute of Technology (GMIT), Baruipur, W.B.

- Dr. Rayapati Subbarao conducted a two-day contact mode workshop on **“Outcome Based Education and NBA-SAR Preparation”** at St. Xavier’s University, Kolkata for all the deans and senior faculty Members of the University from 10th -11th August 2021.

Workshop / Seminars

Workshop (web) on Prospective of Entrepreneurship for North Eastern States

The banner features the NITTTR Kolkata logo at the top corners. The central text reads: "Workshop (web) On Prospective of Entrepreneurship for North Eastern States". Below this, there are seven circular portraits of the participants and organizers, each with their name and title. The participants are: Dr. Abhay Jere, Chief Innovation Officer, Innovation Cell, MoE, Govt; Prof. Debi Prasad Mishra, Director, NITTTR Kolkata; Prof. Siddhartha Das, MD, Sci. & Tech., Entrepreneurs Park, IIT Kgp; Dr. Laldinliana Varte, Director, Incubation Centre, Mizoram University; Shri. Rajeev Saikia, MD, RD Grow Green India Pvt. Ltd., Guwahati; Shri. Dhruba Jyoti Deka, Founder & CEO, Brahmaputra Fables, Guwahati; and Dr. Subrata Mondal, NITTTR Kolkata, Coordinator. A box on the right lists the objectives: "Encourage entrepreneur activities in the North Eastern States; Develop a linkage with entrepreneurship ecosystem; Develop an entrepreneurship faculty capacity in the region." At the bottom, it provides the date and time: "08th May 2021 & 10:00 AM – 02:00 PM", registration link: "https://bit.ly/31B62x8", G-link: "meet.google.com/kvj-fydv-foz", and feedback link: "https://bit.ly/3ubdprx".

Under the patronage of the Director, Prof. Debi Prasad Mishra, the Workshop (web) on “Prospective of Entrepreneurship for North Eastern States” was organized on 08th May 2021 for principals, faculty members and directorate of technical education from the north eastern region of the nation by a team of the National Institute of Technical Teachers’ Training and Research (NITTTR) Kolkata, Coordinated by Dr. Subrata Mondal, Dept. of Mechanical Engineering, NITTTR Kolkata. North eastern states are reservoir of rich natural resources and vibrant source of energy rich in oil, natural gas, coal, limestone etc. Further, there is huge potential for the socio-business ventures using an eco-system in traditionally strong areas like tourism, handicraft, ethnic fabric design, bamboo furniture, agro produce processing, water treatment, service like transportation and logistics etc. There is ample scope for development in these sectors to address the gap helping and creating micro and small enterprise in the region. Objectives of the workshop were: (i) encourage entrepreneur activities in the North Eastern States; (ii) develop a linkage with entrepreneurship ecosystem; (iii) develop an entrepreneurship faculty capacity in the region.

Prof. Debi Prasad Mishra, the Director, NITTTR Kolkata welcomed the guests and participants. In the welcome speech, Prof. Mishra stressed upon the entrepreneurship for welfare of mankind. The western approach to the entrepreneurship has many lacuna and that in true sense, it is degenerating to the society to large extent. Dr. Abhay Jere, Chief Innovation Officer, Innovation Cell, Ministry of Education, Government of India was the Chief Guest of the inaugural session of the workshop. In the inaugural speech Dr. Jere stressed on idea generation for global impact and chase upon the idea. He has discussed National Innovation Policy and various Government of India’s innovation programme.

Further, Dr. Abhay Jere pointed out nation’s poor IPR filling record and give importance on filling of good IPR.

Prof. Siddhartha Das, Professor of the Department of Metallurgical and Materials Engineering, Managing Director, Science & Technology Entrepreneurs Park, Indian Institute Technology, Kharagpur delivered a talk on “Entrepreneurship for Innovators”. Dr. Laldinliana Varte, Director & Coordinator of the Incubation Centre, Mizoram University discussed “Entrepreneurship-Issues and Challenges”. Apart from expert academician, two emerging entrepreneurs from the North Eastern states, Shri. Rajeev Saikia, Managing Director, RD Grow Green India Pvt. Ltd., Guwahati, Assam and Shri. Dhruba Jyoti Deka, Founder & CEO, Brahmaputra Fables, Guwahati, Assam shared their achievement and challenges in entrepreneurship activities in the north eastern states. Dr. Subrata Mondal, Coordinator of the workshop discussed some of the NITTTR Kolkata’s entrepreneurship initiatives for north eastern region of the nation. A total ninety (90) participants from various North Eastern states of the country registered for the programme. The workshop (web) was successfully organized with active support and valuable contributions by Prof. Santanu Bhanja, Professor, Dept. of Civil Engineering and Dr. Sukanta Kumar Naskar, Associate Prof., Dept. of Education & Management.

Workshop on Student’s Innovation and Idea Generations

An on line workshop on Student’s Innovation and Idea Generations was held on 29th May 2021 and organized by Incubation Centre of NITTTR, Kolkata. Programme was coordinated jointly by Prof. Chandan Chakraborty, Chairman, NITTTR, Kolkata Incubation Centre and Prof. Sukanta Kumar Naskar, Convener of the Centre. Around 175 participants attended the workshop and 10 selected ideas / innovative concepts were presented by students throughout the country.

In the workshop, Director of NITTTR, Kolkata welcome the participants. During his welcome address he explained the meaning of innovations, and under this context he mentioned the concept of market driven innovation for making money which may not serve the purpose to uplift our society.

Teachers and teacher-student relationship plays an important role to practice innovativeness starting from school level, according to him, which is decorating from day to day.

He mentioned that to develop need based product is the purpose of innovation, but most of the time we fail to produce the same. Creativeness is the prerequisite

for being innovative, which need to practice in our formative stage of learning starting from school days. Present practice of mechanical way to become innovative may be effective to practice the true spirit of innovation. Applying appropriate skills along with knowledge are very essential in innovations according to him.

He opined that some ideas like decentralization of authority, problem definition and identification are the necessary ingredients to practice innovativeness.

Dr. Mahuya Hom Choudhury, Scientist C (Senior Scientist) and Nodal Officer in Patent Information Centre, West Bengal State Council of Science & Technology (WBSCST), Department of Science & Technology (DST) and Biotechnology, Govt. of West Bengal was the invited key note speaker of the workshop. During her illustrative and informative presentation Dr. Hom Choudhury share useful ideas about innovations, inventions; start up, Intellectual Property Right (IRPs), copy rights etc.

What is a not invention are also mentioned by her along with citing appropriate examples of industrial applications of innovations particularly during Covid Pandemic situation and post-Covid situation. She shared the statistics of present situation of patents of the country along with start-up trends. She also highlighted the purpose and objectives of World Intellectual Property Organization (WIPO). She ended her presentation by showing some encouraging figures of innovations, patents etc.

Finally the workshop ended with a vote of thanks proposed by Prof. Rayapati Subbarao of NITTTR, Kolkata.

One-day (Special ICT) online workshop on Instructional Strategies for New Teaching-Learning Paradigm

NITTTR Kolkata organized one-day (Special ICT) online workshop on Instructional Strategies for New Teaching-Learning Paradigm for International Management Institute (IMI) Kolkata dated on 5th June 2021. The programme was coordinated by Prof. Chandan Chakraborty, Dept. of CSE.

As we are aware that the Outcome Based Education system has been successful due to its primary focus on developing student-centric educational approach that maps with course objectives and measures students' performance in respect to learning outcome time to time. Amongst several factors, systematic instructional strategies and assessment methods play important role in such teaching learning paradigm. Therefore, the teachers need to learn and practice in such a way that

they can develop and deliver the content in more scientific, systematic and efficient manner. This one-day workshop covered the following:

- (a) Concept of teaching and learning
- (b) gaining knowledge and skills of instructional strategies and appropriate teaching-learning methods for effective instructions and learning by the students in respect to the subject content; and
- (c) designing mechanisms for assessment and performance evaluation of the students in a scientific manner using Rubrics; and how research has been influential in outcome-driven education.

Prof. Debi Prasad Mishra, Director, NITTTR Kolkata and Prof. Mahuya Banerjee, Director IMI Kolkata both have graced the inaugural function. Prof. Mishra also delivered a lecture on the concept of teaching and learning with its importance in the line of NEP 2020. Prof. Dipankar Bose, Professor & Head, Mechanical Engg. highlighted the instructional strategies in teaching-learning framework. Prof. Samir Roy, Professor & Head, CSE also delivered a lecture on the principles and techniques of educational assessment and evaluation. Finally, Prof. Chandan Chakraborty concluded with the notion of Research & Development in Educational Framework.

National Workshop (web) on "Lokvidya"

National Workshop (web) On Lokvidya

Prof. Debi Prasad Mishra
Director, NITTTR Kolkata

Dr. Subrata Mondal
Coordinator, NITTTR Kolkata

The purposes of the workshop (web) are as follows:

- To realize the relevance of Lokvidya in modern era;
- To share experiences of artisans and discuss strategies for engagement with initiatives;
- To develop a linkage of ancient art, craft, textile, metal, ceramics, and other related items ecosystem in eastern and north eastern region of the nation;
- To develop technological intervention and modify ancient items with a modern look & functionality;
- To develop documentation of process, production and scale up for ancient items;
- To indigenize modern products and processes.

Who can participate?

- Artisan
- NGO Promoting Artisan
- Cooperative Society Promoting Artisan
- NITTTR Kolkata's Faculty Members
- Others Promoting Artisans.

Date & Time : 19th June 2021 & 10:00 AM onward
G-link : meet.google.com/obn-fduj-gdj

Registration Link : <https://cutt.ly/8nDEM1G>
Feedback Link : <https://cutt.ly/ANDE4oo>

Under the patronage of the Director, Prof. Debi Prasad Mishra, the National Workshop (web) on "Lokvidya" was organized on 19th June 2021 for artisan, NGO promoting artisan, cooperative society promoting artisan, NITTTR Kolkata's faculty members, and others promoting artisans in the nation, by a team of the National Institute of Technical Teachers' Training and Research (NITTTR) Kolkata, Coordinated by Dr. Subrata Mondal, Dept. of Mechanical Engineering, NITTTR Kolkata.

Ours is a diverse country with varied culture, arts, crafts, tradition and rich history. There are ample of scope for

development in these traditional sectors to address the gap helping and creating micro, small and medium enterprise in the nation. Objectives of the workshop were: (i) to realize the relevance of *Lokvidya* in modern era; (ii) to share experiences of artisans and discuss strategies for engagement with initiatives; (iii) to develop a linkage of ancient art, craft, textile, metal, ceramics, and other related items ecosystem in eastern and north eastern region of the nation; (iv) to develop technological intervention and modify ancient items with a modern look & functionality; (v) to develop documentation of process, production and scale up for ancient items; (vi) to indigenize modern products and processes.

Prof. Debi Prasad Mishra, Director, NITTR Kolkata welcomed guests and participants. In the welcome address, Prof. Mishra stated that we are losing *Lokvidya* due to the globalization. He has stressed upon importance of ancient art, craft, culture etc. in modern era and advocated that *Lokvidya* can be solution for solving many problems that we are facing now a days. He has further advocated that to make India stronger we have to take the advantages of *Lokvidya*. Prof. Mishra urged participants to contribute and collaborate for the *Lokvidya* to bring back the glory of artisans.

Presenters and panellists were notable personalities working in the area of ancient Indian arts, crafts, culture, textiles, ceramics, metals and others related items across the nation, such as Prof. Ashish Ghosh, Assistant Professor, Silpa Sadana, Visva-Bharati, Represented Mrittika, Shantiniketan, Birbhum, West Bnegal; Mr. P. Nagendra Satish, Principle Designer, Youth Club of Bijjipuram and Kora, Srikakulam, Andhra Pradesh; Mr. Rajesh Kumar, Chief Executive Officer, Asha Handicraft Association, Maharashtra; Mr. Rajendra Kumar Joshi and Mr. Rajnish Pant, Manager, Avani Society, Kumaon Earthcraft Self Reliant Cooperative, Tripuradevi, Uttarakhand; Madam Surangama Bhadra and Madam Nilam Upadhyay, Swayambhar Nari, Kolkata West Bengal; Dr Anil Kumar, State Project Administrator, Lucknow, Uttar Pradesh; Dr. Hesheto Chishi, Director, Indigenous Cultural Society, Dimapur, Nagaland and Dr V Jayarajan, Folkland, International Centre for Folklore and Culture, Elambachi, Kasargod, Kerala. Various issues related with the traditional art, craft, ceramics, metals, textiles and other related items, their challenges and opportunities have been discussed. Last topic of the national workshop (web) was a panel discussion on “*Technical problems faced by Artisans and their possible Solution*”. The workshop (web) was successfully organized with active support and valuable contributions by Prof. Santanu Bhanja, Professor, Department of Civil Engineering and Dr. Rayapati Subbarao, Associate Professor, Department of Mechanical Engineering.

Special Webinar (Virtual Mode) on “Yoga Therapy and Post COVID Management”

National Institute of Technical Teachers' Training & Research, Kolkata
(An Autonomous Institute under the Ministry of Education, Govt. of India)
राष्ट्रीय तकनीकी शिक्षक प्रशिक्षण एवं अनुसंधान संस्थान, कोलकाता
(एनएनआईटीटीआर, विद्यालय शिक्षक के अधीन है, भारत सरकार)

A Special Webinar On
Yoga Therapy and Post COVID Management

Chairman
Prof. Debi Prasad Mishra
Director, NITTR Kolkata

Speaker
Rajeev Sharma
IAS

Convener
Dr. Kinsuk Giri
Assistant Professor, NITTR Kolkata

Date: June 19, 2021
Time: 4 PM

Google Meet Link
meet.google.com/pky-enxa-zkp

A Special Webinar (Virtual Mode) on “Yoga Therapy and Post COVID Management” was held at NITTR Kolkata on June 19, 2021, organized by National Institute of Technical Teachers’ Training and Research Kolkata (NITTR-Kolkata).

The programme started at 4 PM and Dr. Kinsuk Giri, Assistant Professor of NITTR Kolkata and convener of the webinar briefed the objectives of the webinar. Prof. Debi Prasad Mishra, Director of NITTR Kolkata and the chair of this program welcomed the guests and participants. The Chief Guest and invited speaker of this program Mr. Rajeev Sharma, IAS discussed about the importance of Yoga and it’s impact on post COVID-19 scenario. He emphasized on COVID rehabilitation that must focus on breathing exercises. He mentioned on food habits, body movements and regulated breathing by way of traditional Yoga can boost natural resistance and aid in speedy recovery from COVID-19. The last part of this webinar was the meaningful discussions and personalised interactions. The programme ended with vote of thanks. More than two hundred participants attended the seminar through web.

Webinar on Construction and Maintenance of Sustainable Rural Roads

Webinar On
Construction and Maintenance of Sustainable Rural Roads
July 31, 2021

Organized by
Department of Civil Engineering
National Institute of Technical Teachers' Training & Research (NITTR), Kolkata
Block-FC, Sector-III,
Salt Lake City, Kolkata - 700106

About the webinar
The webinar is going to address the sustainability aspect of transportation infrastructure. This area has been relevant and contemporary, particularly in the construction and maintenance of rural roads. The webinar intends to cover a wide range of topics that include an overview of rural roads and traffic issues, road design and materials, and soil problems and mitigation. The deliverables would follow subject-area based modules as outlined in the program schedule section.

About NITTR, Kolkata
National Institute of Technical Teachers' Training & Research (NITTR), Kolkata was established in 1965 on Technical Teachers' Training Institute (TTTI), Calcutta. This was the first among four such institutes (other three being at Chandigarh, Bhopal & Coimbatore) established by the Ministry of Education, Govt. of India on fully centrally funded autonomous institutions for providing area & discipline specific to the teachers and staff of Degree and Diploma level technical institutions and also for conducting various activities related to quality improvement of the technical education system of the country.

Program Schedule:

Inaugural Function	9:30 am - 10:00 AM
Prof. Debi Prasad Mishra, IAS, Director, NITTR, Kolkata will inaugurate the webinar.	
Module 1: Overview of rural roads and traffic issues	9:30 am - 10:00 am
10:05 - 10:55 AM	Technical issues related to roads: Road design & Road, C&P, Drainage
10:55 - 11:15 AM	Administrative set up and related issues Prof. U. C. Kanti, NITTR, Kolkata
Module 2: Road design and materials	
11:20 - 11:55 AM	Design of pavement structure - Prof. Tapas K. Saha, IIT, Guwahati
12:05 - 12:35 PM	Pavement materials and distress - Dr. Preeti Saha, IIT, Guwahati
Module 3: Soil problems and mitigation	
1:20 - 2:15 PM	Soil problems and mitigation - Prof. Rajapathi Subbarao, NITTR, Kolkata
Vote of Thanks	2:15 - 2:30 PM
Vote of Thanks	2:30 - 3:30 PM

Venue: Google Meet platform
Registration link: <https://forms.gle/XwGj35zXPevRA029>
Target audience
Educators, practicing engineers, researchers, students
Last date of registration July 29, 2021. There is no registration fee.

The webinar was jointly coordinated by Prof. J. J. Mandal, Prof. U. C. Kumar.

Civil Engineering Department organized a webinar on **“Construction and Maintenance of Sustainable Rural Roads”** on July 31, 2021. The honourable Director, Prof. D. P. Mishra, gave the welcome address to the participants. He emphasized on sustainability in the present context of rural road development in India in his address. Experts from institutes, including IEST Shibpur and NITTTR, Kolkata, sequentially delivered lectures in the webinar, followed by question-answer sessions. While conducting sessions, the event followed three distinctive modules as detailed hereunder.

Module 1: Overview of rural roads and traffic issues

Module 2: Road design and materials

Module 3: Soils problems and mitigation

Mrs. Mithu Dey, faculty member of Civil Engineering, NITTTR, Kolkata, introduced respected speakers to the participants.

Deliberation on Module 1

Prof. Sudip Kumar Roy of IEST, Shibpur delivered the first lecture of Module 1 on the topic **“Traffic issues in Rural Roads”**. The following section provides a brief outline of the lecture content.

The lecture started with discussion on various factors required for the estimation of traffic in design of rural roads. These factors involve Axle-wheel configuration, Repetition of wheel load, Tyre pressure, Future traffic growth etc. Vehicle Damage Factor is the most important parameter which is a multiplier that can convert repetition of different axle loads to the number of standard axle repetition. The lecture includes a brief account on the method of traffic assessment as per IRC: SP: 72-2015. It covers different issues like Traffic Growth Rate, Design Life, Computation of Average Annual Daily Traffic, Computation of Vehicle Damage Factor and Computation of Equivalency Factors for converting to the Standard Axle

Prof. U. C. Kumar of NITTTR, Kolkata, delivered the second lecture of the same module on the topic **“Rural Administrative setup and related issues”**. In his deliberation, Prof. Kumar presented in detail the administrative structure during pre-independence and post-independence in rural areas for developmental activities in general and rural roads in particular. He discussed the present PRI (Panchayat Raj Institution) system has come through on recommendations by different committees of GOI. He also discussed the administrative setup and role & responsibilities of the PRI system vis-a-vis the Governmental system. The

classification of rural roads based on the material used and the authorities responsible for constructing and maintaining the rural roads was deliberated upon.

Deliberation on Module 2

Dr. Tapas K Roy of IEST, Shibpur delivered the first lecture of Module 2 on the topic **“Design of pavement structure”**. Dr Roy highlighted the basics of the pavement design process vis a vis design life in his deliberation. The following section provides a brief abstract of the lecture.

Pavement Design is a method of developing a safe and cost-effective combination of pavement layers to suit the soil foundation and traffic to be carried during the design life. So during the design, it is essential to consider the magnitudes of distresses and justify the quality of the road materials that can withstand the expected traffic loading and limit the stresses induced in the subgrade by traffic to a safe level. Further to ensure that the road pavement layers do not deteriorate severely during its design life.

Dr. Pritam Saha of IEST Shibpur delivered the second lecture of the module on **“Pavement materials and distress”**. An elaborate discussion on the possible causes of distress in the pavement focused on various measures for remedy and the need to utilize non-conventional materials. The following section gives details of the lecture framework.

Planning and designing sustainable rural roads seek innovative ways to ensure both infrastructure and sustenance development. A context-sensitive approach while construction and maintenance of such roads should essentially balance economic and environmental objectives. Hence, it appears to be extremely important for the practitioners to be champions of liveability principles and look for appropriate solutions. The deliverables of the lecture were twofold. Firstly, it contemplated new, innovative and re-use of materials in road building. Then it created a premise for an elaborate discussion on various distresses in the pavement, possible causes especially highlighting material properties affecting such concerns and specific maintenance suggestions. The topical arena focused on the pressing needs of the understanding necessity of utilizing non-conventional materials, properties, and performances. The lecture concluded with a note on major types of distresses that may occur in any given pavement structure.

Deliberation on module 3

Module 3 had an intensive focus on the aspects of **“Soils problems and mitigation”**. Prof. J. J. Mandal of NITTTR,

Kolkata, covered the whole arena by including the following deliverables in his presentation.

Prof. Mandal highlighted the importance of soil subgrade in the construction and maintenance of roads in general. Notably, the lecture emphasized the specifications for low volume traffic roads that practitioners need to deliberate on. Elaborate discussions highlighted the (a) importance of soil survey, (b) testing and identification of soil groups along the alignment of the road, and (c) basic features of compaction and CBR tests. Further, it focused on the usefulness of DCPT (Dynamic cone Penetrometer Test), especially during maintenance. The talk ended with a discourse on the determination of effective CBR relevant for pavement design.

141 participants attended the webinar, and their active participation made the sessions lively and interactive. The webinar ended with a vote of thanks proposed by Mrs. M. Dey. At the outset, she expressed her sincere thanks to the Hon'ble Director for his constant encouragement and inspiration. She also expressed her profound gratitude to the external experts who have been kind enough to accept the invitation and deliver talks in the webinar despite their busy schedules. The session ended with a token of appreciation to the distinguished participants for making the event a grand success.

7th Regional (online) Workshop on TECHNICAL EDUCATION SYSTEM focusing on Polytechnics of North Eastern States

Institute has been organising Regional Workshop on Technical Education for the states of North-Eastern Region of India since 2015 and five such workshops have already been conducted in different parts of North Eastern Regions.

7th Regional Workshop on Technical Education focusing on Polytechnics of North Eastern States
August 16, 2021
10:00 a.m.

Mode of Event - Virtual

Chairperson
Prof. Debi Prasad Mishra
Director, NITTTTR, Kolkata

Workshop Link:
meet.google.com/ovv-cetg-bqz

Registration Link <https://forms.gle/Zn5J2Wipu4hipGaVA>

Programme Schedule:
09:00 - 10:00 - Opening of Workshop Link
10:00 - 11:00 - Inaugural Session
11:10 - 13:30 - Presentation Sessions
13:30 - 14:00 - Break
14:00 - 15:30 - Panel Discussion and Discussion Forum

Organized by
National Institute of Technical Teachers' Training and Research, Kolkata
Block-FC, Sector-III, Salt Lake City, Kolkata - 700 106

Contact us : Mobile- 9432319816 Email: sknaskar@nittrkol.ac.in

The 7th Regional Workshop on Technical Education System focusing on Polytechnics of North Eastern States was conducted through online mode on 16th August 2021 through ICT mode.

Around 70 participants from different Polytechnics and Directorates of the North Eastern Region were participated in the said workshop. Professor Debi Prasad Mishra, Director, NITTTTR Kolkata, was the Chairperson of the workshop and Prof. Sukanta Kumar Naskar, Associate Professor of Education & Management department along with Prof. Santanu Bhnaja, Professor of Civil Engineering department of NITTTTR, Kolkata coordinated the workshop with active support from Directorate of Higher and Technical Education Govt. of Mizoram being the host state.

The workshop was divided into three parts: Inaugural Session, Technical Session and Panel Discussion. In the inaugural session, honourable Director of NITTTTR, Kolkata, welcomed the Chief Guest, dignitaries and other participants. In his welcome address, he highlighted some issues of Technician Education system of North Eastern Region. He suggested that by rejuvenating its own culture and heritage of North Eastern States might be the leader of Technical Education System of the country and by utilizing local skills and resources. According to him, concept of self-sustainability and ecosystem is very much essential to the present education system. He also highlighted the importance of Humanistic Education and Humanistic Entrepreneurship a new concept that may be integrated to education system.

Er. K. Zodingliana, Jt. Director (Technical), DHTE, Mizoram, while addressing the gathering mentioned the importance of online classes in Teaching Learning process under the present pandemic situation but implementation of it at Mizoram is not up to the mark because of some limitations. He appreciated NITTTTR, Kolkata for extending necessary support strengthening Polytechnic Education System.

Dr. Sukanta Kumar Naskar, Jt. Coordinator of the workshop spelt out the objectives of the workshop. During the inaugural speech by the honourable chief guest of the workshop, Chief Guest: Smt. Esther Lal Ruatkimi, Commissioner and Secretary- Higher and Technical Education, Govt. of Mizoram appreciated the efforts of NITTTTR, Kolkata for organizing such kind of workshops and thanks to the Director of NITTTTR, Kolkata for considering Mizoram as the host state for organizing the workshop. She also mentioned, "training is expensive but no training is more expensive" and in this context she acknowledged the support of NITTTTR, Kolkata to train their faculty members and support staff of Polytechnics.

In the technical sessions, FIC, Training Cell, Academic Affairs, Kolkata presented the Academic Achievement Report of NITTTTR, Kolkata for the Academic Year 2020-21. In his presentation, he requested to all principals,

their representatives, and other state authorities to depute more number of faculty members and support staff to attend training programme offered by NITTTR, Kolkata.

During discussion session with the participants (DTEs & Principals or their representatives), some important points were raised few of them are as follows:

- Internet facility is not up to the mark which is essential for implementing ICT based teaching learning process and it is true for all N.E States.
- Training on use of ICT tool for Teaching Learning purposes need to organised and NITTTR, Kolkata may help them in this respect.
- Training and workshops on impact of National Policy on Education (NEP-2020) on Polytechnic Education is important and NITTTR, Kolkata may take some initiatives in this respect.
- Since in N.E Regions no. of industries are very less some actions may be taken by NITTTR, Kolkata to arrange industrial visits for teachers and students.
- NITTTR, Kolkata may help the polytechnics in implementing certain projects of AICTE, implementing NEP 2020, and government schemes like MODROB, CDTP etc.

In the panel discussion eminent panellist from NITTTR, Kolkata and polytechnics discussed at length in the topic on NEP 2020- Implications of Regional Language in Diploma Courses. Most of them opined that it will take time to implement it and has to be implemented in step-by-step manner.

10th National Seminar (web) on Ancient Indian Science and Technology

Under the patronage of the Director, Prof. Debi Prasad Mishra, the “10th National Seminar (web) on Ancient Indian Science and Technology” was organized on 21st August 2021 by a team of the National Institute of Technical Teachers’ Training and Research (NITTTR) Kolkata, Coordinated by Dr. Subrata Mondal, Associate

Professor, Dept. of Mechanical Engineering, NITTTR Kolkata to look back to the treasure of knowledge available to us from the past. The national seminar was open to all. Objectives of the national seminar were: (i) to disseminate the knowledge in ancient science and technology; (ii) to explore perspectives of ancient Indian science and technology in modern era; and (iii) to encourage participants to conduct research in indigenous art, craft and culture.

Prof. Debi Prasad Mishra, the Director, NITTTR Kolkata welcomed the guests and participants. In the welcome speech, Prof. Mishra stressed upon the lacuna of materialistic development. He has discussed the current environmental degradation and advocated for the way of life that our ancestors have lived in order to save this beautiful planet from the ever increasing environmental pollution. Prof. Mishra has further pointed out the importance of ancient Indian science and technology that has been given in the National Education Policy 2020 by the Government of India.

Prof. Amitabha Ghosh, former Professor of Indian Institute of Technology, Kanpur and former Director of Indian Institute of Technology, Kharagpur, was the Chief Guest of the inaugural session of the seminar. In the inaugural speech Prof. Ghosh has stated contributions made by scholars in the study of ancient Indian science and technology. He has discussed the importance of standardization and management that has been given in the ancient time. Further, Prof. Ghosh has discussed various reasons to study the ancient Indian science and technology. One of the important reason he has pointed out to study the ancient Indian science and technology for the youth could be self-respect and self-confidence.

Prof. Tanuja Manoj Nesari, Director, All India Institute of Ayurveda, New Delhi, was the guest of honour of the inaugural session of the seminar. Prof. Nesari has discussed the cause, manifestation and management of diseases by using the scientific ancient tools and approach. She has emphasized that technology can be developed with ancient method for better disease detection and management of patient. Dr. Tanuja Manoj Nesari further emphasized that there are huge potential for ancient science in medicine, social, psychological and philosophical aspect of human life. Dr. Nesari also discussed the management of Covid 19 patient by ancient Ayurveda.

In the technical session, first talk was delivered by Prof. Debi Prasad Mishra, Director, NITTTR, Kolkata on *Environmental Consciousness in Ancient India*. Prof. Ashok Nene former professor of Civil Engineering and Dean of Visvesvaraya National Institute of Technology (VNIT), Nagpur has delivered a talk on *Building Sciences*

of Ancient India. Prof. Amartya Kumar Dutta, Professor, Indian Statistical Institute, Kolkata has discussed the *Aryabhata's Method for Finding Integer Solutions of Linear Equations*. Dr. Subrata Mondal, Associate Professor, NITTR Kolkata delivered a talk on *Ancient Textiles*. Last topic of the national seminar was a panel discussion on *Relevance of Ancient Science and Technology in Modern Era*, and the panellists were Prof. Debi Prasad Mishra, Director, NITTR Kolkata; Prof. Ashok Nene, Former professor of VNIT, Nagpur; Prof. Amartya Kumar Dutta, Professor, Indian Statistical Institute, Kolkata, and Dr. Subrata Mondal, Associate Professor, NITTR Kolkata. Prof. Mishra highlighted sustainable development in ancient time for peaceful living of all organism. He has further pointed out that ancient Indian science and technology is relevant in modern era and will be helpful for entire humanity. Prof. Nene stated ancient Indian science and technology with prospect in modern science and technology such as tissue engineering, nanotechnology, stone softening etc. Prof. Dutta has pointed out that as far as the mathematics is concern there is no difference between ancient Indian and modern mathematics. Mathematics that we do that base was created in ancient India. Prof. Amartya Dutta stated that decimal system was originated from India and it is root of modern algebra, polynomial. He has further stated that arithmetic that taught in school are Indian origin. Dr. Mondal highlighted pollution from modern textiles and has stressed to look back to ancient Indian style of governance of natural resources. Prof. Santanu Bhanja, Professor of Civil Engineering Department, NITTR Kolkata was the moderator of the panel discussion. More than five hundred participants from all over the country registered for the programme. Mrs. Sheela Yadav Rai, Assistant Professor, Department of Electrical Engineering, NITTR Kolkata has done the anchoring of whole programme.

Webinar on Evolution of Reinforced Concrete Design Philosophy from IS 456- 2000 to IRC 112-2020.

About NITTR, Kolkata
National Institute of Technical Teachers' Training & Research (NITTR), Kolkata was established in 1965 as Technical Teachers' Training Institute, Calcutta. The Institute was established by the Ministry of Education, Govt. of India, with a primary focus to provide in-service training to the teachers and staff of Technical Institutions in 2003. Since then, India accorded national status to the institute along with three other sister institutes, located at Bhopal, Chandigarh and Chennai – recognition of their special services rendered to the society for overall improvement of the quality of Technical Education System.

About the Webinar
Concrete is the second largest material in the world w.r.t. per capita consumption which proves the world as a concrete structure material. The design philosophy of Reinforced Concrete has been evolving rapidly to cope with the rapid technological improvements, rising costs, behaviour, fire, global uncertainties, the member codes for concrete in India, IS 456, has not been revised over the last 56 years and the IRC 112 first published in 2011 and revised in 2020 has incorporated significant modifications in reinforced concrete design, all par with international standards. These modifications are also expected to be incorporated in the forthcoming revision of IS 456. The webinar will highlight the fundamental design principles of IS 456 along with the improvements in reinforced concrete design philosophy till the IRC 112-2020. An introduction to members say RC design irrationally strength capacity and ductility along with the design on software will be included.

Free Registration
Last date of Registration: 27/05/2021 at 4:00 PM

Contact: 9423107530 | Email: sbhanja@nittrkolkata.ac.in

Highlights of the Webinar
• All participants will receive certification on title.
• Last date of Registration: 27/05/2021
• Registration is free but mandatory.

Objective:
The webinar will address the basic principles of concrete design as envisaged in the standards and highlight the improvements in design philosophy as per IRC 112 - 2020.

Resource Persons
Apart from the Coordinator Mr. Sanjib Das, Manager, Global Technical Support, Bentley Systems, will discuss on the latest version of software Pro Connect Edition regarding reinforced concrete design.

Tentative schedule:
Inauguration: 9:45 to 10:00 AM Inauguration of the Webinar by Prof. Debi Prasad Mishra, Hon'ble Director, NITTR, Kolkata
Session I – 10:00 to 10:10 AM Overview of the Webinar
Session II – 10:10 to 10:50 AM Basics of design philosophy as per IS 456 - 2000
Session III – 11:00 to 11:35 AM Shortcomings of Limit State Method as per IS 456 - 2000
Session IV – 11:40 to 12:15 PM Improvements in Limit State Method as envisaged in IRC 112 - 2020
Session V – 12:20 to 01:00 PM Introduction to strength and ductility design as per STAAD Pro Connect Edition, Mr. Sanjib Das, Manager, Global Technical Support, Bentley Systems
Feedback and Vote-count

Webinar on EVOLUTION OF REINFORCED CONCRETE DESIGN PHILOSOPHY FROM IS 456- 2000 TO IRC 112-2020
August 28, 2021
Organized by Department of Civil Engineering, National Institute of Technical Teachers' Training and Research, Kolkata (Ministry of Education, Govt. of India) Block FC, Sector III, Salt Lake City, Kolkata - 700 106

Coordinators
Dr. Santanu Bhanja
Professor, Civil Engg. Department

Target Participants:
Faculty members, research scholars, students, industry professionals, design engineers, architects working in the domain of RC design.

Registration Link:
<https://forms.gle/yY3KzG5koMLM8a8A>

The Webinar was inaugurated by Director, Prof Debi Prasad Mishra at 9-45 AM. The entire content of the Webinar was covered in the following sessions -

- Session I- 10:00 to 10:10AM Overview of the Webinar
- Session II-10:10 to 10:50AM Basics of design philosophy as per IS 456-2000
- Session III-11:00 to 11:35AM Shortcomings of Limit State Method as per IS 456-2000
- Session IV-11:40 to 12:15PM Improvements in Limit State Method as envisaged in IRC 112 -2020
- Session V-12:20 to 01:00PM Introduction to strength and ductility design as per STAAD. Pro Connect Edition, Mr Sanjib Das, Manager, Global Technical Support, Bentley Systems

The Coordinator, Prof S Bhanja covered the basic philosophy and principles of RC design in the first four sessions whereas the last session was covered by a senior industry personnel.

About 215 participants from diploma and degree level Institutions all over India successfully participated in this National Webinar. Deliberations about the design philosophy of a material which is second largest in the world w.r.t. per capita consumption evoked significant interest amongst the participants and their active interactions added to the success of the Webinar.

Workshop

Dr. Habiba Hussain conducted Curriculum revision (preparatory) workshop for the state of Meghalaya held online on 19th May 2021.

List of Talks Delivered by Prof. Debi Prasad Mishra, Director, NITTR, Kolkata

A. In programmes organized by NITTR, Kolkata

1. Workshop (web) on “Prospective of Entrepreneurship for North Eastern States” on 8th May, 2021 at 10:00 AM by Dr. Subrata Mondal.
2. Workshop on “Student Innovation and Idea Generations” on 29th May, 2021 by Dr. Sukanta Kumar Naskar.
3. Special Webinar on “Yoga Therapy and Post COVID Management” on 19th June, 2021 at 4:00 PM by Dr. Kinsuk Giri.
4. National Workshop (Web) on “Lokvidya” on 19th June, 2021 at 10:00 AM by Dr. Subrata Mondal.
5. Observance of “International Day of Yoga – 2021” and Special Seminar on “Yoga Therapy and Post COVID Management”, 21st June, 2021 by Dr. Arpan Kumar Mondal and Mr. Joseph Bhutia.

6. Webinar on “Construction and Maintenance of Sustainable Rural Roads” on 31st July, 2021 at 9:30 am by Dr. J. J. Mandal and Dr. U. C. Kumar.
7. Observance of 75th Independence Day 2021 of the Institute.
8. 7th Regional Workshop on “Technical Education Focusing on Polytechnics of North Eastern States” on 16th August 2021 at 10:00 AM by Dr. Sukanta Kumar Naskar.
9. National Webinar on “Transforming Waste into Wealth: Global Challenge. Local Solutions” on 19th August 2021 at 11:00 AM organized by SPIU Uttar Pradesh and NITTTR Kolkata.
10. 10th National Seminar (web) on “Ancient Indian Science and Technology” on 21st August 2021 at 10:00 AM by Dr. Subrata Mondal.
11. Webinar on “Environmental Protection - People Participation” on 24th August 2021 at 11:00 AM organized by NITTTR, Kolkata and SPIU, Uttar Pradesh.
12. Webinar on “Climatic Change - Issues and Challenges” on 27th August 2021 at 11:00 AM organized by NITTTR, Kolkata and SPIU, Uttar Pradesh.
13. Webinar on “Evolution of Reinforced Concrete Design Philosophy from IS 456-2000 to IRC 112-2020” on 28th August 2021 at 9:45 AM by Dr. Santanu Bhanja.

B. In programmes organized by other institutions

1. Webinar on राष्ट्र निर्माण के लिए युवा on 3rd June, 2021, organized by Allahabad University
2. NITTT - Mentor Training Programme, June 14 - 18, 2021, organized by NITTTR Chandigarh.
3. International Conference on “Ancient Indian Wisdom – Panacea for sustainable wellbeing” on 27th June, 2021, organized by SMS Varanasi in association with California State University San Bernardino.
4. Six days National online Workshop on “Ancient Indian Science and Technology (AIST-2021)”, 5th-10th July, 2021, organized by National Institute of Technology Jamshedpur.
5. Webinar on “World Youth Skills Day”, Conversation on “Reimagining Youth Skills Post-Pandemic” on 15th July, 2021 organized by PSS Central Institute of Vocational Education, a Consultant Unit of NCERT, under Ministry of Education, Govt. of India.
6. “Jigyasa – Promoting Scientific Temper through Student-Scientist Connect Program”, Popular Lecture Series, an ATAL Innovation Mission, Topic: Ancient Indian Science & Technology, on 18th August, 2021 organized by NITI Aayog.
7. Implementation of National Educational Policy (NEP) 2020 on August 23, 2021 organized by I. K.

Invited Lectures by Faculty Members

1. **Prof. Chandan Chakraborty** delivered an invited lecture entitled ‘Statistical Machine Learning with Applications’ in the AICTE-ATAL Programme organized by Institute of Engineering and Management (IEM) Kolkata on 15th June during June 14-18, 2021.
2. **Prof. Chandan Chakraborty** delivered an invited lecture entitled “Machine Learning in Medical Diagnosis” in the AICTE-ATAL Programme organized by Institute of Engineering and Management (IEM) Kolkata on 16th June during June 14-18, 2021.
3. **Prof. Chandan Chakraborty** was invited as a keynote speaker to deliver a talk on “Bayesian Machine Learning with Challenging Applications” in the International Conf. on Computational Intelligence and Computing Applications, 18-19th June 2021, organized by G H Raison College of Engineering, Nagpur, India.
4. **Prof. Chandan Chakraborty** delivered an invited lecture entitled “Machine Learning for Cancer Image Screening” in the AICTE-RGVP Teachers’ Training Programme on Data Science for ML and IoT with healthcare applications, organized by Sri Aurobindo Institute of Technology, Indore, Aug 23-28, 2021.
5. **Prof. Dipankar Bose** delivered a lecture on Instructional Strategies in Teaching-Learning Framework at One Day Online Workshop on Instructional Strategies for New Teaching-Learning Paradigm on 5th June for IMI, Kolkata organized by NITTTR, Kolkata.
6. **Dr. Habiba Hussain** delivered an invited talk on 24th June 2021 in a AICTE Sponsored FDP on Digital Pedagogy (Phase-I), organised by JIS College of Engineering, Kalyani, W.B.
7. **Dr. Habiba Hussain** delivered an invited talk on 9th July 2021 in a AICTE Sponsored FDP on Digital Pedagogy (Phase- II), organised by JIS College of Engineering, Kalyani, W.B.
8. **Dr. Habiba Hussain** conducted an online training Session on “Online Pedagogy” on 12th July 2021 for the faculty members of Contai Polytechnic, Purba Medinipur, W.B.
9. **Dr. Habiba Hussain** delivered an invited talk on 19th July 2021 in a FDP on “Achieving Excellence in Teaching, Research and Commercialization” organised by Amity University, Kolkata, W.B.

10. **Dr. Habiba Hussain** delivered an invited talk on 29th July 2021 in a NAAC Sponsored Online Webinar (for faculty) on “Going Contactless: Online Education” organised by J D College of Engineering & Management, Nagpur.
11. **Dr. Kinsuk Giri** delivered invited talk on “Need of Optimization for Engineers”, Special Webinar, June 19, 2021, at Shree Ramkrishna Institute of Science and Technology (SRIST), Kolkata, India
12. **Prof. Santanu Bhanja** Acted as Resource person for a AICTE-ISTE sponsored one-week online Refresher programme on Earthquake Resistant Design, Phase III, held during 17-22 May 2021 organized by Civil Engineering Department, Govt. Polytechnic, Bolangir, Odisha.
13. **Dr. Subrata Mondal** delivered a talk on “Ancient Textiles” at the 10th National Seminar (web) on Ancient Indian Science and Technology, Organized by the National Institute of Technical Teachers’ Training and Research, Kolkata, 21st August 2021.
14. **Dr. Subrata Mondal** delivered a talk on “Polymer Composite Manufacturing” at two weeks Faculty Development Programme on Manufacturing Technology Research and Management (MTRM), Organized by the Department of Mechanical Engineering, Aliah University (Under the Dept. of Minority Affairs and Madrasah Education, Govt. of West Bengal, India), 02 – 14th August 2021.
15. **Dr. Subrata Mondal** delivered a talk on “NITTR Kolkata’s Entrepreneurship Developmental Activities for Northeastern States” at the Workshop (web) on Prospective of Entrepreneurship for North Eastern States, Organized by the National Institute of Technical Teachers’ Training and Research, Kolkata, 08th May 2021.
16. **Dr. Sukanta Kumar Naskar** delivered lecture on Incubation Centre Policy in the webinar on Plan for Start-ups- Legal and Ethical Steps on 22.5.21. Conducted by Innovation and Incubation Cell of Sree Ramkrishna Institute of Science and Technology, Govindapur, South 24Parganas.
17. **Dr. Sukanta Kumar Naskar** delivered lecture on Classroom Management and Outcome Based Education & Accreditation in the AICTE sponsored FDP on Digital Pedagogy: Phase I & II on 25.6.21 and 9.7.21 respectively. Conducted by JIS college of Engineering, Kalyani, Nadia.
18. **Dr. Urmila Kar** delivered an invited talk on “Direct and Indirect Assessment under NBA” on 1st May 2021 in one-week Induction/Refresher Programme on "NBA Accreditation, Phase-I" organised by Advanced Technical Training Centre (ATTC), Sikkim and sponsored by AICTE-ISTE
19. **Dr. Urmila Kar** acted as Resource Person in AICTE-ISTE sponsored refresher program on “Outcome Based Education and NBA Accreditation”: Phase 1, at Assam Textile Institute, Guwahati, Topic : “Characteristics and Principles of Outcome Based Education” on 8th May 2021
20. **Dr. Urmila Kar** delivered an invited talk on “NEP-2020 and its Salient Features” in AICTE-ISTE sponsored refresher program : Phase 3, at Rajiv Gandhi Govt. Polytechnic, Itanagar, Arunachal Pradesh, on 8th May 2021
21. **Dr. Urmila Kar** acted as Resource Person in AICTE-ISTE sponsored refresher program on “Outcome Based Education and NBA Accreditation”: Phase 1, at Assam Textile Institute, Guwahati, Topic : “New Education Policy in the perspective of OBE” on 11th May 2021
22. **Dr. Urmila Kar** delivered an invited talk on “Outcome Based Curriculum Design and Implementation for Polytechnic” on 19th May 2021 in one-week Induction/Refresher Programme on " NBA Accreditation – Its Opportunity and Advantages for Polytechnic Institutes" organised by Advanced Technical Training Centre (ATTC), Sikkim and sponsored by AICTE-ISTE
23. **Dr. Urmila Kar** delivered an invited talk on “Pedagogy for 21st Century Learners” in a one-day webinar on “Education for Post–Millennial Learner”, at Government General Degree College, Kalna, West Bengal on 19th May 2021.
24. **Dr. Urmila Kar** delivered an invited talk on “Continuous Improvement in Attainment of Outcomes” on 21st May 2021 in AICTE-ISTE Sponsored Faculty Development Programme on Preparation for NBA : 3rd phase at Women's Polytechnic,
25. **Dr. Urmila Kar** delivered an invited talk on “NEP 2020 : Reforms in Higher Education” at BMS Institute of Technology & Management, Bengaluru, on 20th May 2021
26. **Dr. Urmila Kar** acted as Resource Person in AICTE-ISTE sponsored refresher program on “Outcome Based Education and NBA Accreditation”: Phase 2, at Assam Textile Institute, Guwahati, Topic : “Key Constituents of OBE framework: Mission, Vision, PEO, PO & CO” on 26th May 2021
27. **Dr. Urmila Kar** delivered an invited talk on “Bloom’s Taxonomy, Teaching- Learning Methods under OBE” in AICTE-ISTE sponsored program on “NBA Accreditation Process for Polytechnics”: Phase 2, at Dhalai District Polytechnic, Tripura on 3rd June 2021
28. **Dr. Urmila Kar** delivered an invited talk in a one-day seminar on “National Education Policy: 2020 ”, at Kalyani Government Engineering College, Kalyani, West Bengal on 26.06.2021
29. **Dr. Urmila Kar** delivered an invited talk on “NEP 2020 : Reforms in Higher Education” at NERIST, Arunachal Pradesh, on 17th July 2021

Publications

Journal

1. N. Ghosh, **Indrajit Saha**, J. P. Sarkar, U. Maulik "Strategies for COVID-19 Epidemiological Surveillance in India: Overall Policies till June 2021", *Frontiers in Public Health*, Vol. 9, pp. 708224, 2021.
2. N. Ghosh, N. Sharma, **Indrajit Saha**, "Immunogenicity and Antigenicity based T-cell and B-cell Epitopes Identification from Conserved Regions of 10664 SARS-CoV-2 Genomes", *Infection, Genetics and Evolution*, Vol. 92, pp. 104823, 2021.
3. N. Ghosh, **Indrajit Saha**, N. Sharma, S. Nandi, D. Plewczynski, "Genome-wide Analysis of 10664 SARS-CoV-2 Genomes to Identify Virus Strains in 73 Countries based on Single Nucleotide Polymorphism", *Virus Research*, Vol. 298, pp. 198401, 2021.
4. Prabir Rudra and **Kinsuk Giri**, "Observational constraint in $f(R,T)$ gravity from the cosmic chronometers and some standard distance measurement parameters", *Nuclear Physics B*, Elsevier, Volume 967, No 115428, June, 2021
5. **Rayapati Subbarao**, "Gas turbine blade failure scenario due to thermal loads in case of Nickel based super alloys", *Materials Today: Proceedings*, 2021, vol. 46, pp. 8119–8126.
6. Geetika K. Salwan, **Rayapati Subbarao**, **Subrata Mondal**, "Comparison and Selection of Suitable Materials Applicable for Gas Turbine Blades", *Materials Today: Proceedings*, 2021, vol. 46, pp. 8864–8870.
7. Geetika K. Salwan, **Rayapati Subbarao**, "Studies on the selection of cutting parameters of ti-6al-4v alloy turning operation using principal component analysis", *Materials Today: Proceedings*, 2021, vol. 46, pp. 8615–8620.
8. Suman Kumar Bhattacharyya, **Sagarika Pal**, **Subrata Chattopadhyay**, "Classification and Quality Analysis of Rice Grain Based on Dimensional Measurement During Hydrothermal Treatment", *International Journal of Engineering Trends and Technology*; Volume 69 Issue 8, 145-154, August, 2021; ISSN: 2231 – 5381 /doi:10.14445/22315381/IJETT- V69I8P218 ; Seventh Sense Research Group.

Book Chapter

1. **Subrata Mondal**, "Carbon nanotube reinforced polymer nanocomposite for biomedical applications, In *Green Biocomposites for Biomedical Engineering: Design Properties and Applications*", Chapter 11, Eds. Md Enamul Hoque, Ahmed Sharif, Mohammad Jawaid, 2021, Elsevier, eBook ISBN: 9780128215548, ISBN: 9780128215531.

2. **Subrata Mondal**, "Graphene based aluminum matrix hybrid nanocomposites, In *Graphene and Nanoparticles Hybrid Nanocomposites: From Preparation to Applications*", Chapter 12, Eds: Abou el kacem Qaiss, Rachid Bouhfid, Mohammad Jawaid, 2021, Springer, eBook ISBN 978-981-334-988-9, ISBN 978-981-334-987-2
3. **Subrata Mondal**, "Chemical modification of nanocellulose for water treatment, In *Nanocellulose and Its Composites for Water Treatment Application*", Chapter 5, Ed Dinesh Kumar, 2021, CRC Press (Taylor & Francis), ISBN 9780367487331.
4. **Subrata Mondal**, "Cellulose nanoparticles based advanced polymer nanocomposites, In *Cellulose Nanoparticles*", Chapter 13, Volume 2, Eds: Vijay Thakur, Elisabete Frollini, Janet Scott, 2021, Royal Society of Chemistry, UK, ISBN 978-1-78801-794-7, ePub ISBN 978-1-78801-955-2.
5. **Dr. Sukanta Kumar Naskar**, "The Influence of Indian Ancient Educational Systems on India's Educational Strategy", Open Access book, "Higher Education - New Approaches to Globalization, Digitalization, and Accreditation" edited by Dr. Lee Waller: ISBN: 978-1-83968-700-6, Print ISBN: 978-1-83968-699-3- IntechOpen Limited, United Kingdom.

Miscellaneous

Sponsored Project

Prof. Chandan Chakraborty received a sanction of research project entitled "Development of software for automated identification of gamusa loom type using artificial intelligence", sponsored by NECTAR, Govt. of India.

MOOC Courses

Course Name: Academic and Research Report writing
Coordinators: Dr Samir Roy, Dr Rayapati Subbarao & Dr Kinsuk Giri

Category : Teacher Education Learners

Enrolled : 8852 till now

This is an AICTE approved FDP course

Start Date: 30th July 2021, End Date: 27th Sep 2021

Other news item

1. Dr. Sukanta Kumar Naskar acted as panelist in the online webinar on "Reimagining Youth Skills" as a part of celebration of "World Youth Skills Day" on 15th July, 2021, organized by PSS Central Institute of Vocational Education, Bhopal.

2. Dr. Sukanta Kumar Naskar coordinated an online special lecture on Impact of Communication on Employability for students and teachers of Technical Institutions on 17.7.2021

Learning Resources

Thirty-one (31) number of video lectures were prepared for MOOC based program “Essentials of Pedagogy for Technical Teachers”, P-I & P-II (M09 & M10) by the Learning Resource Centre (LRC) of the Institute.

Beside these one short duration introductory video of NITTTR, Kolkata was prepared.

Glimpse of events



37th Finance Committee and 40th BOG Meeting on 14th July, 2021



Observation of Natures' Conservation Day on 28th July, 2021



MOU Signing between NITTTR, Kolkata and BOPT, Kolkata on 9th August, 2021



Observation of 75th Independence Day on 15th August, 2021.



Visit of Shri Achint Kumar, Under Secretary, Ministry of Education, Govt. of India at NITTTR, Kolkata on 17th August, 2021



NATIONAL INSTITUTE OF TECHNICAL TEACHERS' TRAINING AND RESEARCH, KOLKATA

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How to Reach NITTTR, Kolkata

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“I never teach my pupils, I only attempt to provide the conditions in which they can learn” --Albert Einstein



Distance:

- From Howrah Railway Station: **42 min** (8.1 km) via Maniktala Main Road
- From Sealdah Station: **26 min** (7.4 km) via Beliaghata Main Road and Broadway Road
- From Kolkata Railway Station: **16 min** (4.8 km) via Canal Circular Road
- From Shalimar Station: **38 min** (18.8 km) via Parama Island Flyover
- From Netaji Subhas Chandra Bose International Airport: **27 min** (11.5 km) via Kazi Nazrul Islam Sarani/VIP Road

Google map link: <https://goo.gl/maps/F7gssJoeqxSvffqf9>

Newsletter Committee, NITTTR Kolkata

- Dr. Samir Roy, Chairman
- Dr. Habiba Hussain, Member
- Shri Utpal Chakraborty, Member
- Layout and cover design and DTP work, Shri Utpal Chakraborty
- Photo coverage, Learning Resource Centre