



**PROJECT COMPLETION REPORT**  
**OF**  
**3<sup>RD</sup> INTERNATIONAL CONFERENCE**  
**ON**  
**SUSTAINABLE AND INNOVATIVE SOLUTIONS FOR**  
**CURRENT CHALLENGES IN ENGINEERING & TECHNOLOGY**  
**(ICSISCET 2021)**

**November 13-14, 2021**

**WEBSITE: <https://www.icsiscet21.scrs.in/>**

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**Akbar Bhawan Chankyapuri, New Delhi**



**3<sup>rd</sup> International Conference on  
Sustainable and Innovative Solutions for Current Challenges in Engineering & Technology**

**November 13-14, 2021**

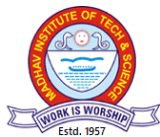
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## PREFACE

During the COVID times, organizing an International conference has been quite challenging. Conventionally, conferences are meant to serve as platforms for meeting people, for exchanging ideas, for collaborating and getting inspiration through face-to-face communication!!

Organizing this virtual conference was a completely new experience. But with the support from our charismatic chief patron and patron, eminent experts, enthusiastic participants, diligent faculty, staff & research scholars of the institute, finally experts around the world, authors and faculty & scholars of the host institute were connected electronically in the virtual domain, using Webex, for the Opening Ceremony, Keynote Talks, Award Announcements and Valedictory Function, and using Google Meet for the 15 Technical Sessions of the two-day 3<sup>rd</sup> **International Conference on “Sustainable and Innovative Solutions for Current Challenges in Engineering & Technology”**.

The concept of sustainability is central to all development; the term becomes more relevant by each passing day as the very existence of life on this planet is endangered due to the continuous and mindless exploitation of nature and natural resources due to population explosion, economic growth, infrastructure development, lifestyle changes and many other such factors.

There is an urgent need to develop technologies that are sustainable. There is a need for experts from different domains to join hands, come together and create models and systems which are able to produce sustainable solutions to current and emerging problems for the benefit of the society. Innovations and advancements which have taken place in intelligent computing paradigm over the last few decades have provided smart solutions for almost all kinds of societal problems. Therefore, the focus of this conference is towards interdisciplinary applications of Intelligent & sustainable computing.

Most practical real world problems are usually ill defined, noisy, uncertain and complex which make them difficult to solve using traditional computational techniques and algorithms. Computational intelligence based techniques are found to deal with real problems and situations very effectively due to their model free structure, learning ability and a flexible approach. The interdisciplinary applicability of this paradigm makes it very attractive to researchers.

Right from infrastructure management to data mining, ICT, pattern recognition, image & video processing, healthcare informatics, bioinformatics, renewable energy pricing, scheduling and dispatch, internet of things, big data analysis, real-time operating systems, smart homes and devices, electric vehicles, computer integrated manufacturing, biomedical engineering etc. are domains where machine learning techniques and computational intelligence are extensively being used for designing, developing, manufacturing, controlling, analyzing and optimizing diverse engineering systems and processes.

Technology is progressing at a very fast pace, which is putting a great burden on natural resources, creating heavy damage to the environment. The price of development is being paid in the form of climate change, hazardous pollution levels and degradation of the environment, which is endangering the very existence of life of the planet earth. There is a need for technocrats, academicians, researchers and all other stakeholders to come together and deliberate on this issue and



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try to find intelligent solutions to the problem. Scientific discoveries and technological innovations taking place for fulfilling the requirements of the power and energy sector, manufacturing sector, transportation, industrial automation, waste disposal etc. now must pointedly focus on the ecological footprint. **Madhav Institute of technology & Science, Gwalior is committed to this theme and therefore this is the 3<sup>rd</sup> international conference being organized in this series.**

The first AICTE sponsored ICSISCET-2019 was conducted two year ago on 02-03 November 2019. Over 148 papers were received, 88 papers were accepted after rigorous review for presentation under 10 tracks; 16 sessions were conducted; 10 expert sessions were conducted; 24 experts contributed as sessions chairs and over 100 faculty & scholars participated. **As an environment friendly initiative and the sustainability theme, the best practice of giving e-certificates was started in the institute.** The conference proceeding with 51 papers was published by Springer {Proceedings in Adaptation Learning & Optimization (PALO) series} entitled “**Intelligent Computing Applications for Sustainable Real-World Applications**”. One edited volume was also published with 09 papers selected in the domain “**Nature Inspired Optimization for Electrical Power System**” by Springer series ‘Algorithms for Intelligent Systems’ (AIS). Both these books have been well received by the researchers and show more than 5600 & 1500 downloads respectively (within six months of publication) till this report is being compiled.

The second AICTE sponsored ICSISCET 2020 was conducted last year on December 18-19, 2020. Over 102 papers were received; 69 papers were accepted after rigorous review for presentation under 4 tracks; 46 were selected for publication; 08 expert sessions were conducted; Six paper presentation sessions were; 18 experts contributed as sessions chairs. The conference proceedings was published in Algorithms for Intelligent systems (AIS) Springer Book Series, entitled “**Artificial Intelligence and Sustainable Computing - Proceedings of ICSISCET 2020**”. (<https://www.springer.com/series/16171>).

In continuation of the above mentioned series, the 3<sup>rd</sup> ICSISCET 2021 has been organized successfully by **Madhav Institute of technology & Science, Gwalior**. The 3<sup>rd</sup> ICSISCET 2021 aims to bring the researchers, academicians, industry, and government personnel together to share and discuss the various aspects of sustainable and innovative solutions for current challenges in engineering & technology. In this 3<sup>rd</sup> ICSISCET 2021, over 267 papers were received, 112 papers were accepted after rigorous review for presentation under 4 tracks, 72 papers were accepted for publication in Springer book series and 26 were accepted for **publication in SBS**. Total 91 papers were presented in 15 different technical sessions in which 22 experts contributed as sessions chairs.

Single blind review was carried out with minimum 2 and maximum 3 reviewers. The authors were asked to submit the marked copy of the revised paper to highlight the changes incorporated on account of reviewers’ suggestions along with a separate ‘Author Response File’.

The after-conference proceeding of the ICSISCET 2021 will be published in Springer Book Series, ‘**ALGORITHMS FOR INTELLIGENT SYSTEMS**’. All books published in the mentioned series are submitted for consideration in the **Web of Science**.

The contract for the same has been signed with **Springer Nature Singapore Pte. Ltd** on **25<sup>th</sup> September 2021**.

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## ACKNOWLEDGEMENT

The organizing chairs of the **3<sup>rd</sup> International Conference on “Sustainable and Innovative Solutions for Current Challenges in Engineering & Technology”** gratefully acknowledge technical support from **Soft Computing Research Society, New Delhi**.

The conference chief patron **Prof. K. K. Aggarwal, Chairman NBA**, and patron **Prof. R.K. Pandit, Director, MITS** were the guiding force behind the conference. **Prof. K. K. Aggarwal** also kindly accepted to deliver the keynote address, for which the organizers are eternally indebted.

**Prof. Xin-She Yang**, Middlesex University, The Burroughs, Hendon, London, **Dr. Swagatam Das**, ISI Kolkata India, deserve a special mention for sparing their valuable time for delivering the Keynote talks.

**Dr. Jagdish Chandra Bansal**, Series editor, **Algorithms for Intelligent Systems (AIS)**, **Mr. Aninda Bose**, Executive Editor and **Mr. Mani Arasan**, Project Coordinator, Springer Nature, deserves special thanks for helping the organizers in publishing the proceedings.

The support from **Dr. Jagdish Chandra Bansal**, **Dr. Mukesh Saraswat** and **Dr. Harish Sharma**, from the **Soft Computing Research Society, New Delhi**, right from paper review stage to the smooth conduction of the conference on 13<sup>th</sup> & 14<sup>th</sup> November 2021 is gratefully acknowledged. Thanks are also due to all the **esteemed reviewers** for their time and significant contribution in maintaining the quality of the papers.

The contribution of **internal and external experts** as **session chairs** and the **session support teams** during the two days was crucial for the effective conduction of the conference. They played a key role in conference conduction by giving valuable comments for improving the quality of the paper and by ensuring that all reviewer comments were incorporated into the revised papers, before publication. The organizers are grateful for their support and efforts in conference conduction.

During the COVID times, organizing an International conference in **virtual mode** was quite challenging. The hard work and efforts of the **Conference Core Team** are sincerely acknowledged. The members of the **Conference Core Team** have worked relentlessly and have left no stone unturned to make the e-conference a reality.

Thanks are also due to media persons, guests, authors and all those who have directly or indirectly contributed in organizing and conducting this conference.

**Organizing Team - ICSISCET 2021**



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## **OBJECTIVES OF THE CONFERENCE**

Technology is progressing at a very fast pace which is putting great burden on natural resources, creating heavy damage to environment. The price of development is being paid in the form of climate change, hazardous pollution levels and degradation of environment, which is endangering the very existence of life of the planet earth. There is a need for technocrats, academicians, researchers and all other stakeholders to come together and deliberate on this issue and try to find engineering solutions to the problem. This is the time when new innovations, start-ups and novel ideas are needed to address the ecological problems created by industrial and other ventures. Alternate solutions are urgently needed to handle the crisis created by the previous technological set up.

There is a need for professionals from Electrical Engineering, Electronics and Communication Engineering, Mechanical & Automobile Engineering, Computer Science, Information Technology, Energy Studies and mathematicians to come together and collaborate for generating sustainable solutions for maintaining the growth of economy without damaging the environment.

There is an urgent need to develop technologies that are sustainable. The idea is to unite experts from different domains to join hands and create models and systems which are able to produce sustainable solutions to current and emerging problems for the benefit of the society. Innovations and advancements which have taken place in intelligent computing paradigm over the last few decades have provided smart solutions for almost all kinds of societal problems. Therefore, the focus of this conference is towards interdisciplinary applications of Intelligent & sustainable computing.

The conference aims to bring together researchers, technocrats, academicians and industrialists on a common platform to deliberate on various issues arising in this scenario.





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## CALL FOR PAPER

Soft Computing Research Society (SCRS) and Madhav Institute of Technology & Science (MITS), Gwalior, India are organizing the 3<sup>rd</sup> International Conference on Sustainable and Innovative Solutions for Current Challenges in Engineering & Technology (ICSISCET 2021) in Virtual Format (due to ongoing COVID19 pandemic) during November 13-14, 2021. The ICSISCET 2021 aims to bring the researchers, academicians, industry, and government personnel together to share and discuss the various aspects of sustainable and innovative solutions for current challenges in engineering & technology.

The conference will witness multiple eminent keynote speakers from academia and industry from all over the world along with the presentation of accepted peer-reviewed articles. The after-conference proceeding of the ICSISCET 2021 will be published in Springer Book Series, '**ALGORITHMS FOR INTELLIGENT SYSTEMS**'. All books published in the mentioned series are submitted for consideration in the **Web of Science**. For more details, please visit the conference website: <https://www.icsiscet21.scrs.in/>.

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witness multiple eminent keynote speakers from academia and industry from all over the world along with the presentation of accepted peer-reviewed articles.

All the accepted and registered papers of ICSISCET 2021 will be submitted for inclusion into

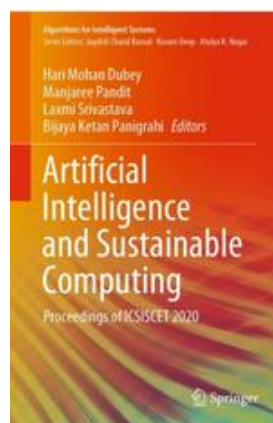
**Springer - ALGORITHMS FOR INTELLIGENT SYSTEMS**



**\*\* Indexing: The books of this series are submitted to ISI Proceedings, EI-Compendex, DBLP, SCOPUS, Google Scholar and Springerlink \*\***

**Last date of Full paper submission: September 15, 2021**

[2020 Publication Link](#)



[2019 Publication Link](#)



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**Paper Presentation can also be done through video conference mode**

### **[Conference Brochure](#)**

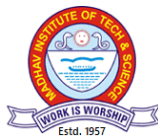
**ICSISCET 2021 Proceedings by  
Springer - **ALGORITHMS FOR INTELLIGENT SYSTEMS**  
ISSN: 2524-7565**

**ICSISCET 2021 Conference Website –**



**ICSISCET 2020 Publication Partner:**





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## **PUBLISHING CONTRACT**

The formal contract for publishing papers presented in the **3<sup>rd</sup> International Conference on “Sustainable and Innovative Solutions for Current Challenges in Engineering & Technology was signed on 25<sup>th</sup> September 2021** with Springer Nature Switzerland. The conference proceeding is being prepared for publication in Springer Series, **Algorithms for Intelligent systems (AIS)** (<https://www.springer.com/series/16171>).

The title is **“Artificial Intelligence and Sustainable Computing - Proceedings of ICSISCET 2021”**.

The editors are Prof. Manjaree Pandit, Prof. Manoj Kumar Gaur, Prof. Akhilesh Tiwari from Madhav Institute of Technology & Science, Gwalior and Dr. Prashant Singh Rana, Thapar Institute of Engineering & Technology, Patiala.



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## **CONFERENCE TRACKS**

### **TRACK 1: SUSTAINABLE COMPUTING AND INFORMATION TECHNOLOGY**

Information security, natural language processing, information security, data networks, wireless network and security, network management and traffic engineering, language Track 1: Sustainable Computing and Information Technology Track 1: Sustainable Computing and Information Technology The registration fee for Accepted Papers “Algorithms for Intelligent system (AIS)” <https://www.springer.com/series/16171> technologies and information retrieval, computer systems organization and communication networks, information systems and communication service, software engineering and operating systems, management of computing and information systems green IT, eco-friendly materials, cloud & grid computing, re-cycling and disposal of e-waste, environmental footprint, awareness drive, energy-efficient data center design, telecommuting, mobile computing, application security.

### **TRACK 2: COMPUTATIONAL INTELLIGENCE & MACHINE LEARNING**

Optimization techniques, system modeling and simulation fuzzy system, evolutionary computational methods, artificial neural network, Bayesian learning, hybrid intelligent systems, soft computing, smart computing, big-data, data mining, signal, image and video processing, robotics & computer vision, peer-to-peer computing.

### **TRACK 3: EMBEDDED SYSTEMS & VLSI DESIGN**

Embedded architectures, software and hardware, embedded cybersecurity and cryptography, real-time operating systems, microcontrollers and applications, embedded machine learning, deep learning and artificial intelligence Internet of things (IoT), sensors, computing, control, communication, IoT applications, medical electronics, blockchain technology, drones, smart homes and devices, role of electronics in efficiency enhancement, automotive and industrial applications, automation & control, system on chip (SOC) & semiconductor technology.

### **TRACK 4: ADVANCES IN INTELLIGENT COMPUTING, SUSTAINABLE ENGINEERING SYSTEMS, AND PRACTICES**

Theory, applications, and design of intelligent systems and intelligent computing in engineering disciplines, natural sciences, computer and information science, act, economics, business, e-commerce, environment, healthcare, life science. fusion of computational paradigms, human-centered and human-centric computing, social intelligence, ambient intelligence, computational neuroscience, artificial life, virtual worlds and society, cognitive science and systems, DNA and immune-based systems, self-organizing and adaptive systems, e-learning and teaching, recommender systems, knowledge-based paradigms, machine ethics, Intelligent data analysis, knowledge management, intelligent agents, intelligent decision making and support, intelligent network security,



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trust management, interactive entertainment, web intelligence and multimedia. Smart Engineering Solutions for waste management, sustainable architecture, roads and transportation network, climate change, green buildings Sustainable manufacturing practices and design, Smart manufacturing, Industry 4.0, data analytics, AI in industry, optimization techniques smart grid technologies, communication, control, power electronics, energy storage, demand control and response, storage technologies and batteries, power quality and energy-efficient systems, intelligent protective devices.



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4. Dr. Akhilesh Tiwari, Madhav Institute of Technology & Science, Gwalior, India

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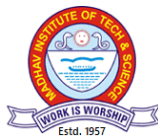
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**Sudhir Singh Bhadoria**

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**Rajesh Kumar**

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**Er. Vinod Katare**

General Manager and Superintending Engineer, MPSEB, MP, India

**Kirti Pal Singh**

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**Y.Kumar**

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**Debashis Chatterjee**

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**Shailaja Kumari M.**

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**Sanjay Tiwari**

MITS, Gwalior, India

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Madhav Institute of Technology & Science, Gwalior, India

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**Pushpendra Singh**

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## KEYNOTE TALK AND SESSION DETAILS

### DAY 1

Parallel Session	Date/Time (IST)	Session Coordinator	Session Chair 1	Session Chair 2	Joining Link
Keynote 1 by Prof. K. K. Aggarwal	13 November 2021 10:45 – 11:15	Kamal Sharma	Prof. J. C. Bansal		<a href="https://christkengeri.webex.com/christkengeri/j.php?MTID=m8e23fb22d5e0c9766defd831a67d8e0">https://christkengeri.webex.com/christkengeri/j.php?MTID=m8e23fb22d5e0c9766defd831a67d8e0</a>
Keynote 2 by Dr. Swagatam Das	13 November 2021 11:15 – 12:00	Nikhil Paliwal	Prof. M. K. Gaur		<a href="https://christkengeri.webex.com/christkengeri/j.php?MTID=m8e23fb22d5e0c9766defd831a67d8e0">https://christkengeri.webex.com/christkengeri/j.php?MTID=m8e23fb22d5e0c9766defd831a67d8e0</a>
TS 01: Sustainable Computing and Information Technology	13 November 2021 13:00 – 14:30	Jay Singh Rajput	Dr. Pratesh Jayaswal	Dr. Harish Sharma	<a href="https://meet.google.com/crs-sywz-ocn">https://meet.google.com/crs-sywz-ocn</a>
TS 02: Computational Intelligence & Machine learning	13 November 2021 13:00 – 14:30	Pushpendra Singh	Dr. M.K.Trivedi	Dr. Mukesh Saraswat	<a href="https://meet.google.com/yhj-qdgy-ohr">https://meet.google.com/yhj-qdgy-ohr</a>
TS 03: Embedded Systems & VLSI Design	13 November 2021 13:00 – 14:30	Wajid Hussain	Dr. Raju Pal		<a href="https://meet.google.com/noi-fyja-hmg">https://meet.google.com/noi-fyja-hmg</a>
TS 04: Advances in Intelligent Computing, Sustainable Engineering Systems, and Practices	13 November 2021 13:00 – 14:30	Rishika Shah	Dr. Chandra Shekhar Malvi	Dr. Kusum Kumari Bharti	<a href="https://meet.google.com/izp-bnwk-wsa">https://meet.google.com/izp-bnwk-wsa</a>
TS 05: Sustainable Computing and Information Technology	13 November 2021 13:00 – 14:30	Dr. Prashant Singh Rana	Dr. P. K. Singhal		<a href="https://meet.google.com/twu-qmjt-seo">https://meet.google.com/twu-qmjt-seo</a>
TS 06: Computational Intelligence & Machine learning	13 November 2021 13:00 – 14:30	Aditi Tiwari	Dr. Kamal Raj Pardasani	Dr. Himanshu Mittal	<a href="https://meet.google.com/zba-tvhj-xyx">https://meet.google.com/zba-tvhj-xyx</a>
TS 07: Embedded Systems & VLSI Design	13 November 2021 13:00 – 14:30	Kamal Sharma	Dr. Arvind Jain	Dr. Ashish Tripathi	<a href="https://meet.google.com/fpw-bwmt-vaq">https://meet.google.com/fpw-bwmt-vaq</a>
TS 08: Advances in Intelligent Computing, Sustainable Engineering Systems, and Practices	13 November 2021 13:00 – 14:30	Nikhil Paliwal	Dr. R.S. Jadon	Dr. Saurabh Sharma	<a href="https://meet.google.com/xsp-wsaw-qhq">https://meet.google.com/xsp-wsaw-qhq</a>



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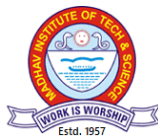
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Keynote 3 by Prof. Xin-She Yang	13 November 2021 15:00 – 15:45	Shubham Sharma	Prof. Akhilesh Tiwari	<a href="https://christkengeri.webex.com/christkengeri/j.php?MTID=m72e87418648472e45bb94ff9a9180b5f">https://christkengeri.webex.com/christkengeri/j.php?MTID=m72e87418648472e45bb94ff9a9180b5f</a>
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## DAY 2

Parallel Session	Date/Time (IST)	Session Coordinator	Session Chair 1	Session Chair 2	Joining Link
TS 09: Computational Intelligence & Machine learning	14 November 2021 12:30 – 14:00	Shubham Sharma	Dr. Manish Dixit	Dr. Harish Sharma	<a href="https://meet.google.com/pcr-igee-pdc">https://meet.google.com/pcr-igee-pdc</a>
TS 10: Embedded Systems & VLSI Design	14 November 2021 12:30 – 14:00	Jay Singh Rajput	Dr. Prashant Singh Rana		<a href="https://meet.google.com/ggn-wvyn-yax">https://meet.google.com/ggn-wvyn-yax</a>
TS 11: Advances in Intelligent Computing, Sustainable Engineering Systems, and Practices	14 November 2021 12:30 – 14:00	Pushpendra Singh	Dr. Vivek Kapoor	Dr. Mukesh Saraswat	<a href="https://meet.google.com/kax-ojgc-dei">https://meet.google.com/kax-ojgc-dei</a>
TS 12: Computational Intelligence & Machine learning	14 November 2021 12:30 – 14:00	Wajid Hussain	Dr. Surya Prakash	Dr. Raju Pal	<a href="https://meet.google.com/zez-gvnb-iyf">https://meet.google.com/zez-gvnb-iyf</a>
TS 13: Computational Intelligence & Machine learning	14 November 2021 12:30 – 14:00	Dr. Kusum Kumari Bharti	Dr. Virendra Prasad Vishwakarma		<a href="https://meet.google.com/hwy-iazq-hmj">https://meet.google.com/hwy-iazq-hmj</a>
TS 14: Computational Intelligence & Machine learning	14 November 2021 12:30 – 14:00	Vimal Tiwari	Dr. Dinesh Kumar Vishwakarma	Dr. Ashish Tripathi	<a href="https://meet.google.com/ctc-upgz-qyn">https://meet.google.com/ctc-upgz-qyn</a>
TS 15: Computational Intelligence & Machine learning	14 November 2021 12:30 – 14:00	Aditi Tiwari	Dr. Vivek Tiwari	Dr. Saurabh Sharma	<a href="https://meet.google.com/wwx-giqd-iwf">https://meet.google.com/wwx-giqd-iwf</a>



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## LIST OF INVITED SPEAKERS

<b>Chief-Guest and Keynote Talk 1</b>	<b>Prof. K.K. Aggarwal</b> Chairman, NBA and Founder Vice Chancellor, GGS Indraprastha University, India
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Keynote Talk	Resource Person
<b>Keynote Talk 2</b>	<b>Prof. Xin-She Yang</b> Middlesex University, The Burroughs, Hendon, London Nature-Inspired Algorithms: Some Insights and Discussions
<b>Keynote Talk 3</b>	<b>Dr. Swagatam Das</b> ISI Kolkata India
<b>Keynote Talk 4</b>	<b>Dr. Swagatam Das</b> Indian Statistical Institute, Kolkata, West Bengal, India



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## CONFERENCE SCHEDULE

### DAY 1

<b>Opening Ceremony &amp; Keynote Talks (on Webex)</b>		10:00 – 11:15
<b>OC</b>	Opening Ceremony	10:00 – 10:45
<b>Speaker:</b> Prof. K. K. Aggarwal, Chairman, NBA and Founder Vice Chancellor, GGS Indraprastha University, India		
<b>TS 01: Sustainable Computing and Information Technology (on Google Meet)</b>		13:00 – 14:30
<b>7</b>	Demand based Land Suitability Prediction Model for Sustainable Agriculture <i>Sumaiya Farzana and Prakash N</i>	
<b>69</b>	Improved Bio-hashing Fingerprint Security Using Modified Arnold's Cat Map <i>Md Imteyaz Mohsin, Jyoti Bharti and R K Pateriya</i>	
<b>97</b>	Smart Agriculture Monitoring System Using IOT Technology <i>Shivani R, Shoumithra S, Shree Nithaa and Subickshan D</i>	
<b>120</b>	Deep Elephant Herding Optimization based Attack Detection for Securing Virtualized Infrastructures of Cloud <i>Bhavana Gupta and Dr.Nishchol Mishra</i>	
<b>148</b>	Smart Grid Communication Network Reliability Assessment using Graphical Computational Model <i>Swati Sharda, Kapil Sharma and Mukhtiar Singh</i>	
<b>152</b>	Safety Rings Principle and Energy and Information Networks Coupling <i>Bianca Tonino-Heiden, Bernhard Heiden and Volodymyr Alieieksiev</i>	
<b>TS 02: Computational Intelligence &amp; Machine learning (on Google Meet)</b>		13:00 – 14:30
<b>14</b>	Power Generation Forecasting of Wind Farms using Machine Learning Algorithms <i>Tejas Bhardwaj, Sumit Mehenge and B Sri Revathi</i>	
<b>21</b>	MUSIC RECOMMENDATION SYSTEM BASED ON EMOTION DETECTION <i>Deepa Parasar, Arjun Thampuran, Ishveen Sahi and Shivangi Jain</i>	
<b>28</b>	Comparative Analysis of Color-based Segmentation Methods Used for Smartphone Camera Captured Fingerphotos <i>Diwakar Agarwal and Deepak Mangal</i>	
<b>29</b>	Isolated Word Recognition System for Autistic Speech <i>R Ambika and Anil Kumar D</i>	
<b>37</b>	A Review: Machine Learning for Stock Market <i>Mashfiqur Rahman and Dr. Mohammad Nurul Huda</i>	
<b>45</b>	Prediction of Heart Disease through KNN, Random Forest and Decision Tree Classifier using K-Fold Cross Validation <i>Meenu Bhagat and Dr Brijesh Bakariya</i>	
<b>54</b>	A Novel method for diagnosis of Cardiac Disease using ECG Signal based on proposed CNN <i>Amit Jain, Rahul Dubey and Vandana Vikas Thakare</i>	



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<b>TS 03: Embedded Systems &amp; VLSI Design (on Google Meet)</b>		13:00 – 14:30
90	Implementation of 32 bit ISA Five Stage Pipeline RISC-V Processor Core <i>Saroja Siddamal, Manjunath Kalmath, Akshay Kulkarni and Jayashree Mallidu</i>	
92	Access Control Model using Risk Based Technique <i>Smita Athanere and Dr. Ramesh Thakur</i>	
123	Performance Evaluation of Passive Solar Still with ZnO Nanoparticles in Summer and Winter Season <i>Vikas Kumar Thakur, Manoj Kumar Gaur and Bhupendra Kumar Pandey</i>	
127	Investigation of Impact of Mobile Phone Radiations on EEG / ECG and Modeling of Their Coherence using ANN Ensemble <i>Suman Pattnaik, Balwinder S Dhaliwal and Shyam Sundar Pattnaik</i>	
158	Optimal sizing of stand-alone hybrid energy system using black widow optimization technique <i>Poonam Singh, Manjaree Pandit and Laxmi Srivastava</i>	
159	Statistical Evaluation of Indoor Air Quality in the Laboratories of Engineering Institute <i>Aditya Singh Tomar, Jay Singh Rajput and Aditya Kumar Agarwal</i>	
<b>TS 04: Advances in Intelligent Computing, Sustainable Engineering Systems, and Practices (on Google Meet)</b>		13:00 – 14:30
6	DocVSP (Docking-based Virtual Screening Perl-script) for automating and integrating AutoDock & SBDD <i>Shivam Chauhan and Dr. Mani Srivastava</i>	
25	Service Analytics on ITSM processes using Time Series <i>Ioannis Karamitsos, Omar Murad and Sanjay Modak</i>	
35	Data structure tree and life <i>Pradeep Kumar</i>	
62	Generating Attack-Defense tree by automatically Retrieving Domain-Specific Security Attack patterns <i>Mohammad Aijaz, Mohd Nazir and Malik Nadeem Anwar Mohammad</i>	
95	CFD studies on hydrodynamics and heat transfer of nanofluid flow in straight and helical tubes <i>Mohammad Fahad Ahmed and Monisha Mandal</i>	
155	Bearing various defects classification using deep network learning method <i>Bellal Belkacemi and Saad Salah</i>	
189	EOQ Inventory Model for Perishable Items with Price Dependent Demand and Preservation Technique under Upstream and Downstream Trade Credit. <i>Jayashri P and Umamaheswari S</i>	
<b>TS 05: Sustainable Computing and Information Technology (on Google Meet)</b>		13:00 – 14:30
156	Web Scraping Techniques and Applications: A Literature Review <i>Chaimaa Lotfi, Swetha Srinivasan, Myriam Ertz and Imen Latrous</i>	
226	AI Based Tracking System from Real Time CCTV Captures <i>Malarvizhi N, Arun Kumar Dash, Manikanta V and Athreayasa Kalyan</i>	
231	Using AI Chatbots in Education: Recent Advances Challenges and Use Case <i>Moneerh Aleedy, Souham Meshoul and Eric Atwell</i>	
234	Performance Analysis of Preconditioner Based Image Reconstruction in High Resolution Microwave Tomography <i>Nithya N and Manikandan Msk</i>	



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<b>241</b>	An Ensemble based effective intrusion detection system for cloud environment over UNSW-NB15 dataset. <i>Uzma Wani, Faheem Masoodi and Alwi Bamhdi</i>
<b>251</b>	An iterated local search algorithm for the degree-constrained minimum spanning tree problem <i>Sudishna Ghoshal and Shyam Sundar</i>
<b>TS 06: Computational Intelligence &amp; Machine learning (on Google Meet)</b>	
13:00 – 14:30	
<b>57</b>	STUDY OF DECREASING TRAFFIC ROUTING SYSTEM USING VANET HYBRID ANT COLONY OPTIMIZATION <i>Prithviraj Singh Solanki and Ganpt Joshi</i>
<b>59</b>	Performance Improvement of CTNR Protocol in Wireless Sensor Network Using Machine Learning <i>Shalini Sharma, Amandeep Kaur Sohal and Mandeep Kaur Walia</i>
<b>64</b>	Content based Recommender System Using Machine Learning <i>Swati Suman, Riya, and Chandrani Chakravorty</i>
<b>78</b>	Application of ANN to Predict Outlet Water Temperature of Evacuated Water in Tube Type Solar Collector <i>Pushpendra Singh and M.K. Gaur</i>
<b>81</b>	Effective Diagnosis of Cervical Cancer using Balanced Random Forest Classifier <i>Asif Newaz, Farhan Shahriyar Haq and Nadim Ahmed</i>
<b>82</b>	Asthma Detection System: Machine and Deep Learning-Based Techniques <i>Mohammed Tawfik, Nasser M. Al-Zidi, Ibraheam Fathail and Sunil Nimbhore</i>
<b>83</b>	Comparison of machine learning algorithms and Neural Network for breast cancer prediction <i>Ibraheam Fathail, Dr.Vaishali D. Bhagile, Mohammed Tawfik and Nasser M. Al-Zidi</i>
<b>TS 07: Embedded Systems &amp; VLSI Design (on Google Meet)</b>	
13:00 – 14:30	
<b>166</b>	All Digital ADC using Time-to-Digital Converter <i>Darshan Shaha, Mahadev Patil and Sachin Magdum</i>
<b>172</b>	A Reconfigurable Antenna for 5G, 4G and WLAN Applications <i>Balarajuswamy T A and Nakkeeran Rangaswamy</i>
<b>187</b>	Implementation of a New Hybrid Boosting Converter for High Gain Enhancement of SOFC System <i>Ch Siva Kumar and G Mallesham</i>
<b>213</b>	DEVELOPING AN UNDERWATER ROV TO CARRY OUT HULL SURVEY OF SHIPS AND SUBMARINES WITH LIVE CAMERA FEED <i>Dhanya R Poduval and Minimol R Rajan</i>
<b>229</b>	Optimal Planning of Renewable Based Micro-Grid using Bald Eagle Search Algorithm <i>Vimal Tiwari, Hari Mohan Dubey and Manjaree Pandit</i>
<b>242</b>	Internet of things: Design of an Intrusion Detection System using DEEP LEARNING APPROACH <i>Soliha Khan, Faheem Masoodi and Alwi Bamhdi</i>
<b>TS 08: Advances in Intelligent Computing, Sustainable Engineering Systems, and Practices (on Google Meet)</b>	
13:00 – 14:30	
<b>67</b>	Analytical approach of Quantum computing based on thematic studies <i>Harsh Jindal, Jagdeep Kaur, Prabhjot Kaur</i>





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<b>102</b>	Supporting The Audial Discovering Of Space By The Blind Using An Ontology-based Map And Geographic Data From Existing Open Maps <i>Dariusz Mikulowski, Marek Pilski and Grzegorz Terlikowski</i>	
<b>107</b>	An Impact Assessment of Distributed Generation in Distribution Network <i>Vivek Saxena, Narendra Kumar and Uma Nangia</i>	
<b>116</b>	Optimization of LoRa Networks Using Multi-Armed Bandit Algorithms <i>Alexander Valach and Dominik Macko</i>	
<b>117</b>	System for Management and Visualization of LoRa Network Components <i>Daniel Hroš and Alexander Valach</i>	
<b>136</b>	Extended TOPSIS and VIKOR methods based on a new distance measure of Intuitionistic Fuzzy number <i>Naziya Parveen and Prakash Kamble</i>	
<b>Keynote Talk (on Webex)</b>		15:00 – 15:45
<b>K2</b>	Nature-Inspired Algorithms: Some Insights and Discussions <b>Speaker:</b> Prof. Xin-She Yang, Middlesex University, The Burroughs, Hendon, London	15:00 – 15:45

## DAY 2

<b>Keynote Talk (on Webex)</b>	<b>Speaker:</b> Dr. Swagatam Das, ISI Kolkata India	11:00 – 11:45
<b>TS 09: Computational Intelligence &amp; Machine learning (on Google Meet)</b>		12:30 – 14:00
<b>88</b>	Exploring energy poverty indicators through Artificial Neural Networks <i>Lefkothea Papada and Dimitris Kaliampakos</i>	
<b>93</b>	Machine Learning – Based Platform for Classification of Retinal Disorders Using Optical Coherence Tomography Images <i>Ahmed M. Salaheldin, Manal Abdel Wahed and Neven Saleh</i>	
<b>96</b>	Bank Telemarketing Prediction based on Deep Learning Approach <i>Kanchanlata Kashyap, Nishq Desai, Avnish Sandilya and Sarthak Patel</i>	
<b>98</b>	Named Entity Recognition based on Combining Pre-trained Transformer Model and Deep Learning <i>Thanh Hung Bui and Huy Tran Quang</i>	
<b>104</b>	Electronic Dance Music Sub-Genre Classification Using Machine Learning <i>Chetan Popli, Advait Pai, Vijayetha Thoday and Manisha Tiwari</i>	
<b>105</b>	Prediction of Stock Market prices using Machine Learning <i>Radhika Sreedharan and Archana Praveen Kumnar</i>	
<b>109</b>	A Deep Learning Model for Air Quality Forecasting Based on 1D Convolution & BiLSTM <i>Veena Gugnani and Rajeev Kumar Singh</i>	
<b>TS 10: Embedded Systems &amp; VLSI Design (on Google Meet)</b>		12:30 – 14:00
<b>147</b>	Link Folding algorithm (LFA) for Inverse Kinematics of an Industrial Robot.	





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	<i>Tiruvudula Eswara Rao and Nalluri Mohan Rao</i>	
243	Performance Evaluation of Sine Cosine Algorithm Based Controllers for LFC in an Isolated Hydro Power System Integrated with Energy Storage System	
	<i>Nikhil Paliwal, Laxmi Srivastava and Manjaree Pandit</i>	
247	Photonic Upconversion Based Millimeter wave Generation and Transmission for 5G RoF Fronthaul System	
	<i>Asha Balhara and Dr. Sandeep Dahiya</i>	
258	Language Translation using Raspberry Pi	
	<i>Bhavpreet Singh, Umrah Zargar, Vedansh Kumar and Arvind Kumar</i>	
260	A Framework for Smart Traffic Controller by Improved Cooperative Multi-agent Learning Algorithms (ICMALA)	
	<i>Deepak Vidhate and Parag Kulkarni</i>	
261	Optimized Hysteresis Region Authenticated Handover for 5G HetNets	
	<i>Vincent Nyangaresi</i>	
<b>TS 11: Advances in Intelligent Computing, Sustainable Engineering Systems, and Practices (on Google Meet)</b>		12:30 – 14:00
50	Distance Matrix generation for Dynamic Vehicle Routing optimization in transport fleets management	
	<i>Radosław Belka and Mateusz Godlewski</i>	
56	Sustainability Blockchain technology for securing financial digital system in african countries	
	<i>Mamadou Mbaye</i>	
202	Renewable Energy integrated Economic Dispatch using Intelligent Techniques: An overview	
	<i>Vishal Chaudhary, Manjaree Pandit and Hari Mohan Dubey</i>	
217	Spatial Analysis of Forest Health Dynamics Through Google Earth Engine Cloud in Similipal Tiger Reserve, Odisha, India	
	<i>Kishore Chandra Swain, Chiranjit Singha and Sanjay Kumar Swain</i>	
228	Determination of avalanche effect to compute the efficiency of association rule hiding algorithms	
	<i>Dinesh Audichya, Dr. Prashant Sharma and Pankaj Kumar Vaishnav</i>	
236	Customizing Backend Logic using a Chatbot	
	<i>Shounak Bhattacharya, Abhishek Kushwaha, K. Sharmila Banu and B.K. Tripathy</i>	
262	Multilevel Hybrid Model for the Prediction of Quantitative Structure-Activity Relationship in Drug Discovery	
	<i>Khushleen Billing, Gurjot Singh, Parth Verma, Sannya Singal and Prashant Singh Rana</i>	
<b>TS 12: Computational Intelligence &amp; Machine learning (on Google Meet)</b>		12:30 – 14:00
111	Comparative Evaluation of Machine Learning Models for the Prediction of Diabetes at Early-Stage	
	<i>Cagri Ozkan and Boran Sekeroglu</i>	
128	Sharma-Mittal Entropy and Whale Optimization Algorithm based Multi-level Thresholding Approach for Image Segmentation	
	<i>Lovepreet Kaur, Baljit Singh Khehra and Arjan Singh</i>	
129	COVID19 Fake News Detection by Improved Ant Lion Optimizer Metaheuristics	



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	<i>Miodrag Zivkovic, Nebojsa Bacanin, Jelena Arandjelovic, Stefan Stanojlovic, Andjela Rakic and K. Venkatachalam</i>	
132	Improving Nepali News Classification Using Bidirectional Encoder Representation from Transformers <i>Prakash Kafle, Roshan Chitrakar and Kriti Nemkul</i>	
139	Object Recognition using Semantic Segmentation <i>Rosepreet Kaur Bhogal and V Devendran</i>	
140	Metaheuristic optimization techniques' application to Economic Dispatch problem- A Review <i>Prachi Mafidar Joshi, Bhavna Rathore and Harish Kumar Verma</i>	
157	A deep learning model for early prediction of COVID-19 spread <i>Ulises M. Ramirez-Alcocer, Edgar Tello-Leal, Jaciel D. Hernandez-Resendiz and Barbara A. Macias-Hernandez</i>	
	<b>TS 13: Computational Intelligence &amp; Machine learning (on Google Meet)</b>	12:30 – 14:00
167	Breast cancer subtypes prediction using Omics data and machine learning models <i>Shiekhah Al Binali, Souham Meshoul and Hadil Shaiba</i>	
171	Abusive Bangla Comment Detection From Social Media Using Machine Learning Approach <i>Pratim Saha, Naznin Sultana, Ashraful Hoque Khan and Shibli Noman</i>	
184	Optimal value for number of clusters in a dataset for clustering algorithm <i>Jayashree Jayashree and Shivaprakash T</i>	
201	REVIEW OF HARMONIC REDUCTION OF MULTILEVEL INVERTERS BY USING SOFT COMPUTING TECHNIQUES <i>Ritu Saxena, Dr. H.K. Verma, Dr. Arun Parakh and Rinki Rajpal</i>	
204	AUTOMATIC SEGMENTATION AND CLASSIFICATION OF BRAIN TUMORS ON PRE-OPERATIVE AND POST-OPERATIVE MRI SAMPLE USING DEEP LEARNING <i>Shiny K V and Sugitha N</i>	
218	Statistical Parametric Speech Synthesis for Punjabi Language using Deep Neural Network <i>Harman Singh, Parminder Singh and Manjot Kaur</i>	
220	Automatic Summarization of Malayalam Documents using Text Extraction Methods <i>Jisha P Jayan and Govindaru Vasudevaru</i>	
	<b>TS 14: Computational Intelligence &amp; Machine learning (on Google Meet)</b>	12:30 – 14:00
11	Image Forgery Detection Using CNN <i>Aadeesh Jain, Aditya Sharma, Kanishk Gupta, Ketan Likhi, Neha Mehra, Sonika Shrivastava and Divyansh Joshi</i>	
121	A review on quality of image during CBIR operations and compression <i>Diwanshi, Dharminder Kumar and Sakshi Dhingra</i>	
221	Bone Fracture Detection in X-ray Images using Convolutional Neural Network <i>Rinisha Bagaria, Sulochana Wadhvani and Arun Wadhwanii</i>	
227	Dermoscopic Image Analysis for Skin Lesion Classification using Dense Convolutional Network <i>Prasoon Purwar and Neha Bhardwaj</i>	



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<b>235</b>	Comparative Study on Machine Learning based Models and Improve their Performances through Different Techniques <i>Priyank Gupta, Sakshi Talreja, Rakesh Singh Jadon and Sanjay Kumar Gupta</i>	
<b>239</b>	An Overview of Recent Nature Inspired Computational Techniques for Dynamic Economic Dispatch <i>Sunita Shukla and Manjaree Pandit</i>	
<b>240</b>	ANALYSIS OF IDS USING FEATURE SELECTION APPROACH ON NSL-KDD DATASET <i>Rahila Rahim, Faheem Masoodi, Aamir Ahenger and Sajad M Khan</i>	
<b>TS 15: Computational Intelligence &amp; Machine learning (on Google Meet)</b>		12:30 – 14:00
<b>89</b>	A VGG-16 Framework for An Efficient Indoor-Outdoor Scene Classification <i>Monika Dandotiya and Madhukar Dubey</i>	
<b>205</b>	A GPU Accelerated Neural Network Approach For The Diagnosis Of Heart Disease in Clinical Medicine <i>Sasikala D, Gopi B, Sujatha Balakrishnan and Ravindrakumar S</i>	
<b>244</b>	Application of ANN for prediction of heat index in historic streets of Gwalior, India <i>Rishika Shah, Rk Pandit and Mk Gaur</i>	
<b>246</b>	Brain MR Image Preprocessing & Tumor Segmentation using Morphology & Watershed Algorithm <i>Rajni Maurya and Sulochana Wadhvani</i>	
<b>249</b>	Sparse Optimization of Output Error Model using Genetic Algorithm <i>Aman Kashyap, Manjaree Pandit, Lillie Dewan and Vikram Saini</i>	
<b>250</b>	MRF-PSO: MultiRoot Finding Particle Swarm Optimization Algorithm for Nonlinear Functions <i>Diogo Freitas, Luiz Guerreiro Lopes and Fernando Morgado-Dias</i>	
<b>255</b>	Enhancing Weighted Support Vector Machine for Noise Classification <i>Mohd Najib Salleh, Syarizul Amri and Kashif Hussain</i>	
<b>Award Announcements and Valedictory Function (on Webex)</b>		15:00 – 15:30



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56.	Rahul Dubey	MANIT, Bhopal, India
57.	Deep Kishore Parsediya	Madhav Institute of Technology & Science, Gwalior, India
58.	Dr. Arvind Chel	Jawaharlal Nehru Engineering College, MGM University, Aurangabad



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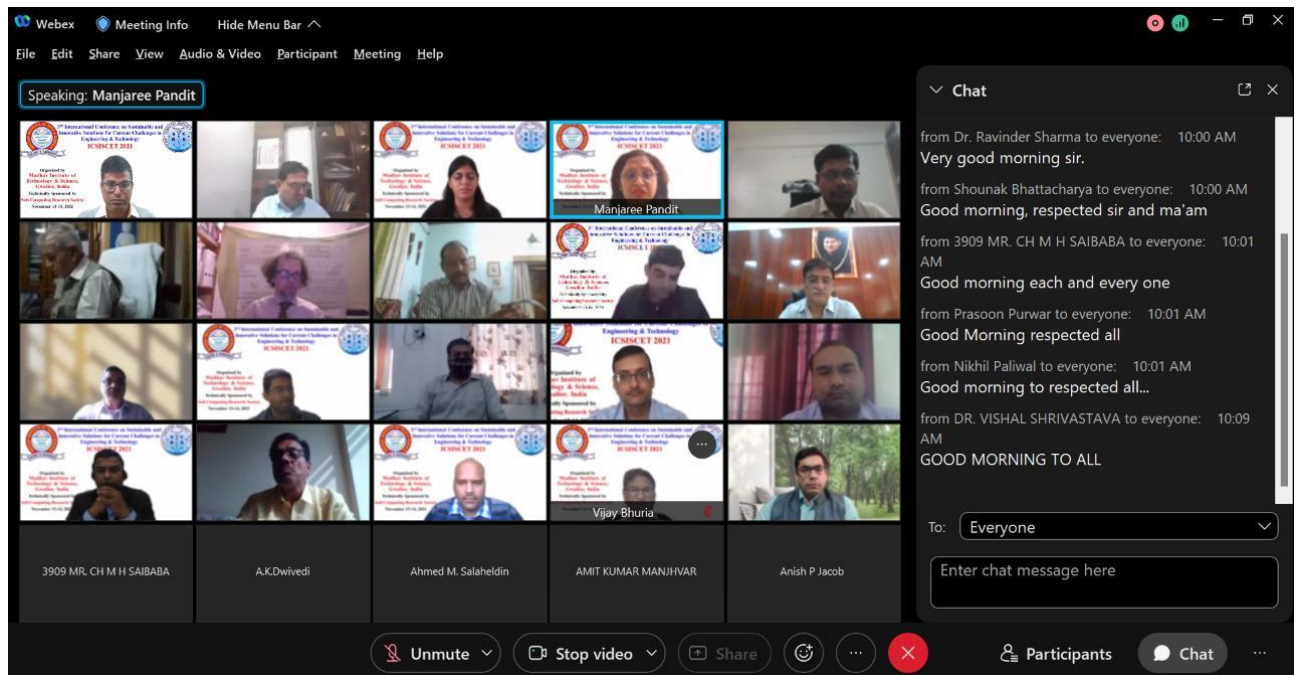
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- 622 total reviews received from the reviewers of eminent institutions from many countries like from Malaysia, Sri-Lanka, South Africa, Poland, Italy, Spain, Japan and others.
- 99 papers are accepted and registered for the publication and presentation during the conference.
- 15 Parallel Technical Sessions are scheduled.
- 03 Keynote talks will be delivered by the eminent speakers on recent technologies

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Speaking: Manjaree Pandit

Chat

Good Morning Sir

from Dr Karuna Markam to everyone: 10:00 AM  
Good morning respected all

from Dr. Ravinder Sharma to everyone: 10:00 AM  
Very good morning sir.

from Shounak Bhattacharya to everyone: 10:00 AM  
Good morning, respected sir and ma'am

from 3909 MR. CH M H SAIBABA to everyone: 10:01 AM  
Good morning each and every one

from Praseon Purwar to everyone: 10:01 AM  
Good Morning respected all

from Nikhil Paliwal to everyone: 10:01 AM  
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Manjaree Pandit

**WELCOME ADDRESS BY DR. MANJAREE PANDIT, DEAN ACADEMICS, MITS,  
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**PROFILE**

- Gold Medalist in all University Examinations ( Pre-Engg., B. Tech., & M. Tech. ).
- Ph. D. Degree in Reliability Evaluation & Optimisation of Systems. Rose to the level of Professor in 1975 at the age of 27+ years.
- Served National Institute of Technology, Kurukshetra, for 27 years in different capacities, including 14 years as Founder Head of the Department.
- Founder Pro Vice Chancellor of Haryana's Technical University at Hissar (1995-1998).
- Founder Vice Chancellor of G.G.S. Indraprastha University, Delhi, the First University set up by the Govt. of NCT of Delhi (1998-2008).
- Honoured by Academy of Scientific and Innovative Research, C S I R by designating as Academy Professor.
- Chairman, Malaviya National Institute of Technology, Jaipur ( 2012 – 15 ). Founder Chancellor, K R Mangalam University, Gurgaon, NCR ( 2013-18)
- Chairman, Engineering Evaluation & Accreditation Committee, NETA ( 2018-18).
- Authored several books and about 350 research papers (about 50% in International Journals), guided more than 20 Ph.D students. Book on Reliability Engineering published by Kluwer Academic, Netherlands/USA/UK. Latest Book on Software Engineering first published in 2001 has seen several revisions/reprints.
- In social life, decorated with “ DELHI RATAN ”, “ MERI DILLI ”, and “ VC of the Decade ” Awards. Actively consulted by organizations like ISRO (for the Reliability Design of PSLV), and TCS, etc.



**Prof (Dr) K.K. Aggarwal**  
**Chief Guest**  
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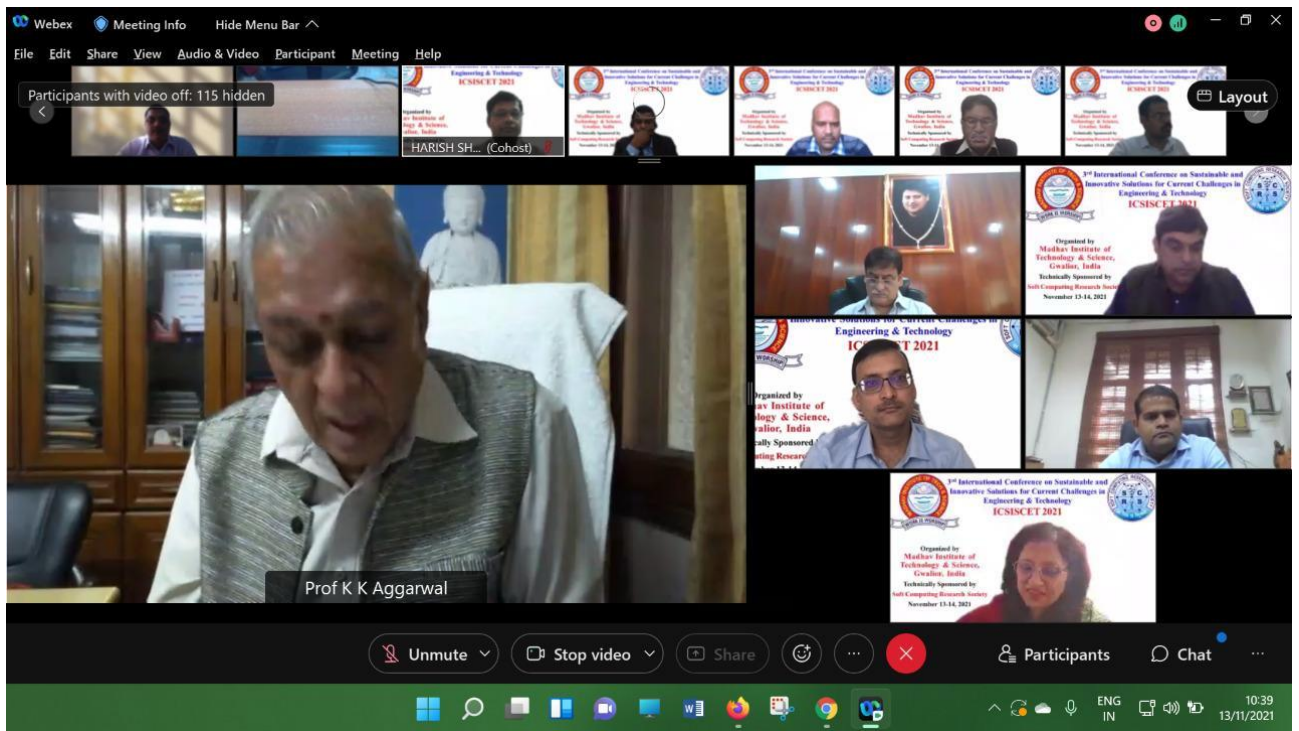
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**KEYNOTE TALK BY DR. K.K. AGGARWAL, CHIEF PATRON & CHAIRMAN NBA**





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**PROFILE**

- He is the Director of Madhav Institute of Technology & Science, Gwalior (MP) Since March 2016. His Specialization is Construction Management.
- He has 35 years teaching experience at UG & PG Levels.
- He has published more than 127 Papers in Journals and Conferences of International & National Level and has been guided 08 PhD students.
- He has complete 7 AICTE & UGC Funded Research Projects and has been organized 16 Faculty Development Programs.
- He has delivered more than 350 expert lectures.
- He is the evaluator many boards and journals like Expert Member Monitoring Committees of GOI for evaluation of Institutes, National Board of Accreditation (NBA), AICTE & CoA. Advisor UPSC, Government of India.

**Prof. R. K. Pandit**  
**Director,**  
**MITS, Gwalior**  
**& Patron**  
**ICSISCET 2021**

**3<sup>rd</sup> International Conference on Sustainable and Innovative Solutions for Current Challenges in Engineering & Technology**  
**ICSISCET 2021**  
**November 13-14, 2021**

**PROFILE**

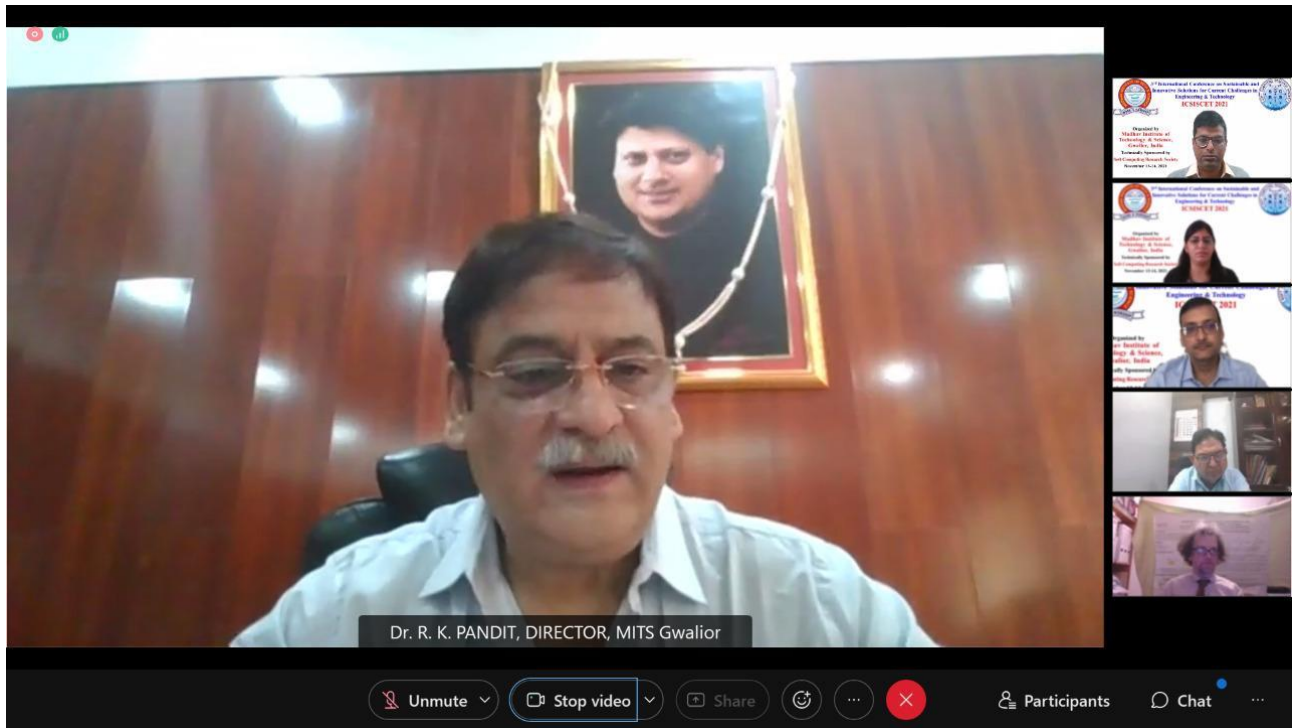
- He is the Director of Madhav Institute of Technology & Science, Gwalior (MP) Since March 2016. His Specialization is Construction Management.
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**TALK BY DR. R.K. PANDIT, DIRECTOR MITS, PATRON ICSISCET – 2021**



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**PROFILE**

Dr. Akhilesh Tiwari has received Ph.D. degree in Information Technology from Rajiv Gandhi Technological University, Bhopal, India. He is currently working as Professor & Head at department of Information Technology, Madhav Institute of Technology & Science (MITS), Gwalior, (M.P.), India.

His areas of current research includes Knowledge Discovery in Databases & Data Mining, Terrorist Network Mining, Hesitation Mining and Pattern Warehousing.

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**Prof. Akhilesh Tiwari**  
General Chair  
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Dr. Akhilesh Tiwari

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**TALK BY DR. AKHILESH TIWARI, GENERAL CHAIR, ICSISCET 2021**





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ICSISCET 2021 November 13-14, 2021**

**PROFILE**

- Prof. Manoj Kumar Gaur is working as a Professor and Head in Mechanical Engineering Department, Associate Proctor and Incharge of the Institute Industry Interaction Cell at Madhav Institute of Technology and Science, Gwalior, India.
- He possesses eighteen years teaching experience of Post Graduate and Under Graduate classes. He has authored three books titled "Solar Energy: Problems Solutions and Experiments", "Optimization of machining parameters of hard porcelain on CNC machine" and "Solar Energy Systems: Thermal Analysis and Its Application". Eighty of his papers have been published in various International and National journals and conferences.
- He is an active Reviewer of prestigious Journal like Solar Energy, Desalination, Desalination and Water Treatment, Journal of Thermal Engineering etc. His broad area of interest includes thermodynamics, heat transfer, Solar Energy and Solar Distillation.
- He is a life member of the Indian Society for Technical Education (India) IET and Faculty Advisor of Society of Automotive Engineers INDIA MITS chapter. He had obtained Ph.D from Indian Institute of Technology Delhi, New Delhi and Master of Technology in Engineering Materials from Maulana Azad National Institute of Technology Bhopal in 2002.

**Prof. Manoj Kumar Gaur  
General Chair  
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Manoj Kumar Gaur

**TALK BY DR. MK GAUR, GENERAL CHAIR, ICSISCET 2021**



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General Chair  
ICSISCT 2021**

**DURING THE CONFERENCE**

Viewing HARISH SHARMA's a...

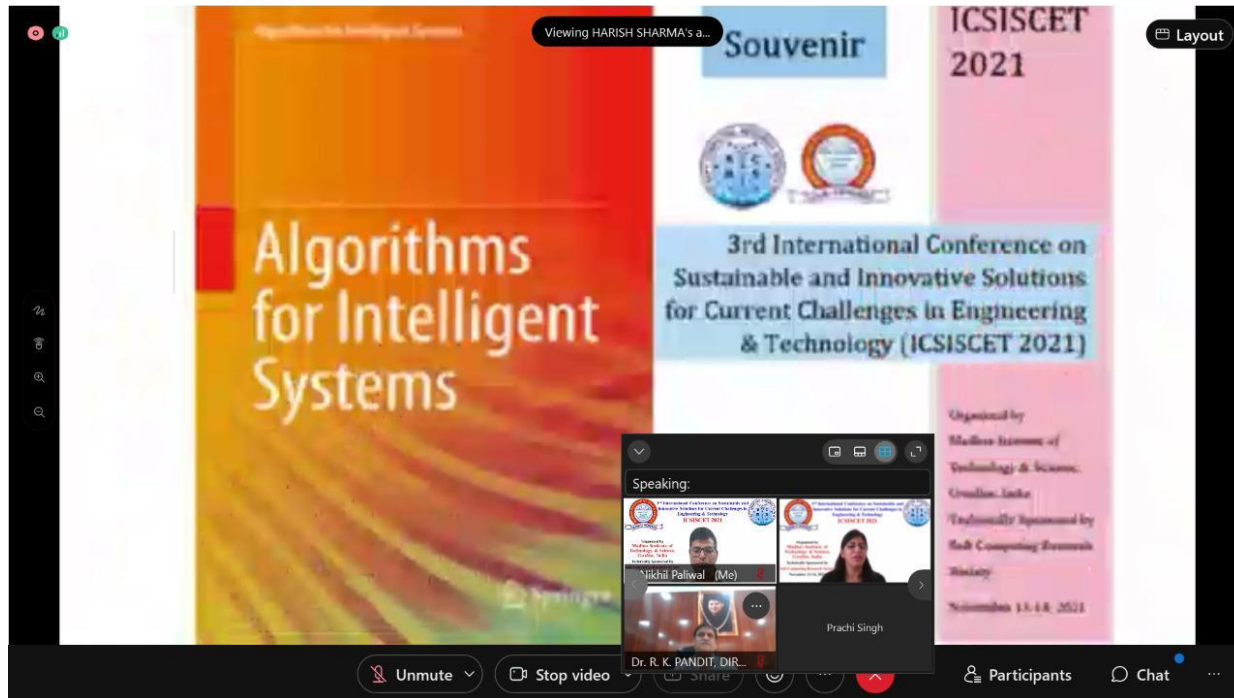
**Release  
of  
"ICSISCT 2021 Souvenir"**

Speaking:  
Prachi Singh





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**RELEASE OF ICSISCET 2021 SOUVENIR**





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**DR. SWAGTAM DAS, INDIAN STATISTICAL INSTITUTE, KOLKATA, INDIA,**  
**DELIVERING KEYNOTE TALK ON DAY-2**

The screenshot shows a Cisco Webex meeting window. The main content is a presentation slide with a yellow header that reads "Nature-Inspired Algorithms: Some Insights and Discussions". Below the header, the presenter's name "Xin-She Yang" and affiliation "Middlesex University London" are listed, along with the event details "ICSISCT 2021, 13 - 14 Nov 2021". The meeting interface includes a top menu bar with options like "File", "Edit", "Share", "View", "Audio & Video", "Participant", "Meeting", "Breakout Sessions", and "Help". A grid of video thumbnails shows other participants, and a sidebar on the right displays a list of 31 participants with their names and roles (e.g., Harish Sharma as Co-host, Dr. Sandeep Kumar as Host).

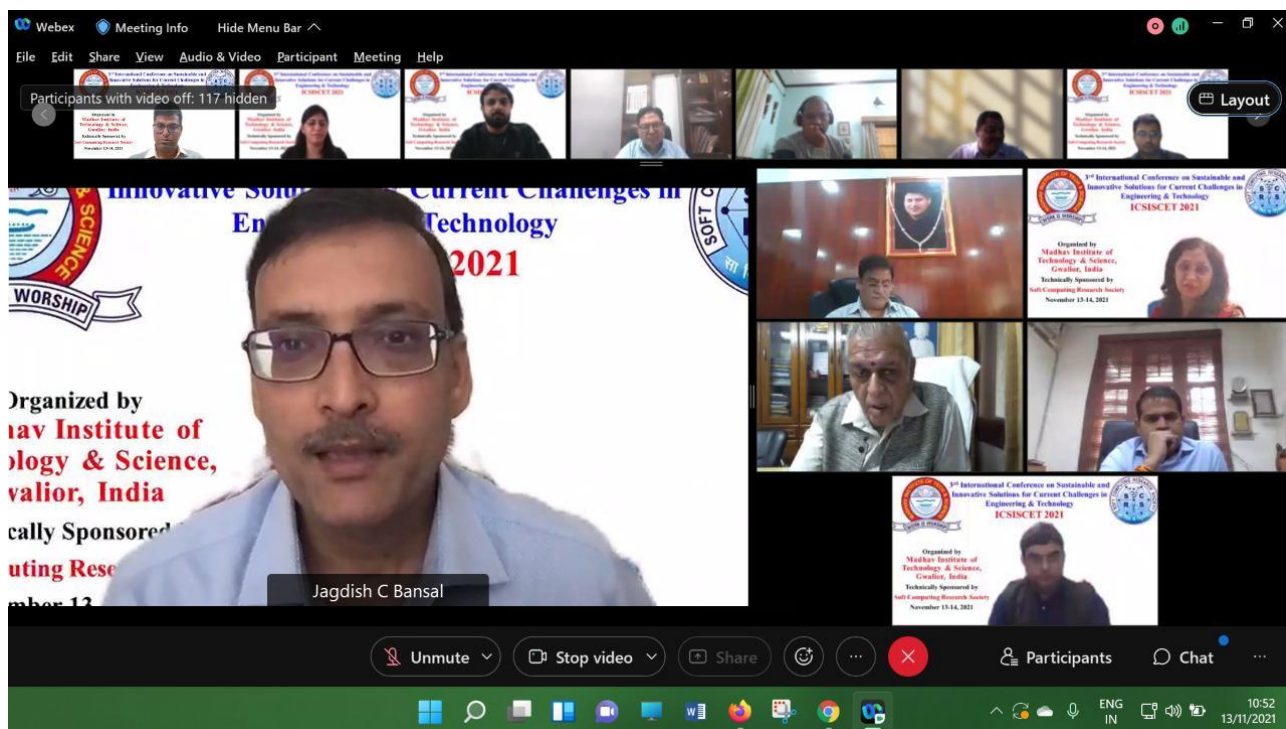
The screenshot shows a Webex meeting window displaying a slide titled "Essence of an Optimization Algorithm" by Xin-She Yang. The slide content includes the text: "To generate a better solution point  $x^{(t+1)}$  (a solution vector) from an existing solution  $x^{(t)}$ . That is,  $x^{(t+1)} = A(x^{(t)}, \alpha)$ . [Ideally, in a few steps]". It features a diagram showing a path from  $x^{(0)}$  to  $x^{(1)}$  to  $x^{(2)}$  to  $x^{(t)}$  to  $x^{(t+1)}$ . The slide also includes the Newton-Raphson formula:  $x^{(t+1)} = x^{(t)} - \frac{f(x^{(t)})}{f'(x^{(t)})}$ . A section titled "What's Wrong with Traditional Algorithms?" lists two points: "Though traditional algorithms are efficient, they are mostly local search, thus cannot guarantee global optimality (except for linear and convex optimization)." and "Results often depend on the initial starting points (except for linear and convex problems).". The final section, "Nature-Inspired Optimization Algorithms", states: "Heuristic or metaheuristic algorithms tend to be global optimizers so as to increase the probability of finding the global optimality (as a global search tool), though they can be potentially more computationally expensive." The meeting interface shows a grid of participants and a bottom status bar with system icons and the time 15:10 on 13/11/2021.





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**DR. XIN-SHE YANG, MIDDLESEX UNIVERSITY, THE BURROUGHS, HENDON,  
LONDON, DELIVERING KEYNOTE TALK ON DAY-1**



**TALK BY DR. JC BANSAL, GENERAL SECRETARY, SCRS, INDIA**



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## MEDIA COVERAGE

### एमआइटीएस में इंटरनेशनल कॉन्फ्रेंस अच्छे रिसर्चर बनें, आज हर प्रोफेशन में कैरियर

ग्वालियर. एमआइटीएस में इंटरनेशनल कॉन्फ्रेंस ऑन सस्टेनेबल एंड इनोवेटिव सोल्यूशंस फॉर करंट चैलेंजस इन इंजीनियरिंग-टेक्नोलॉजी की शुरुआत शनिवार को हुई। मुख्य अतिथि के रूप में नेशनल बोर्ड ऑफ



अक्करीडिटेशन नई दिल्ली के चेयरमैन डॉ केके अग्रवाल ने कहा की समय तेजी से बदल रहा है। इंजीनियर, डॉक्टर के शिवाय भी बहुत प्रोफेशन हो गए हैं, जिनमें छात्र कैरियर बना सकते हैं। अगर बने तो अच्छे इंजीनियर, अच्छे रिसर्चर बने। कॉन्फ्रेंस

की जनरल चेयर डॉ मंजरी पंडित ने बताया कि ये ग्लोबली एक्सेप्टेड स्प्रींगर की अंतराष्ट्रीय कॉन्फ्रेंस है, जिसने हर वर्ष नए कीर्तिमान स्थापित किए हैं। इस कॉन्फ्रेंस की रिसर्च को बुक फॉर्म में प्रकाशित किया जाता है। संस्थान के निदेशक डॉ आरके पंडित ने आज के युग में कॉन्फ्रेंस की उपयोगिता के बारे में बताया।





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**(Dr. Manjaree Pandit)**  
**Coordinator**

**(Dr. R.K. Pandit)**  
**Director**