Editors Message

There is a saying " Never forget the sacrifice of our freedom fighters who formed this country" Wishing you all a very happy 78th Independence Day….

Hearty congratulations to all the Ph.D scholars for getting their degree awarded. It's a good sign of growth to see the faculty being qualified with higher degrees. It's a positive pace of progress to have various publications from faculty as well as students. Faculty have been the resource persons at other Institutes which shows the calibre of the faculty. With all the academic schedule faculty have attended various workshops and Faculty Development Programs. Always a combined effort of faculty and the student will reach success, which can be seen in our newsletter. Students have a long break after completing their academic exams, busy with their mini-projects, projects and hobby projects making themselves a room to spend the vacation fruitfully. Congratulations to all the placed students of the month and hope many other students gets placed in companies recruiting in future. Students success is Institution success…. Lets wish all the outgoing students a good luck for their future endeavours…..

Focus on FOCUS and be a part of it.

| **Dr. Vidyalakshmi K,** Chief Editor

Publications and Conferences

• **Mrs. Likhitha U N,** Asst. Prof., Dept. of EEE has published a paper entitled "Railway Track Crack Detection System" in International Journal IJCRT on 2nd August 2024.

• **Dr. Manohar R Gombi,** Asst. Prof., Dept. of Mathematics, presented a research paper on "Fractional ordered energy equation of a fully wet longitudinal fin with convective / radiative heat exchange: Sumudu Transform Aspects" in the International Conference on Mathematical Analysis and its Applications (ICAAM-2024) held on 2nd and 4th August 2024, organized by the Dept. of Mathematics, Karnataka University, Dharwad.

• **Mr.Praveen Kumar C,** Asst. Prof., Dept. of EEE has published a paper entitled "A Mathematical Modeling on FLISR Technology in Distribution Management System (DMS) using Artificial Neural Network" in TIJER-International Research Journal TIJER.ORG on 8th August 2024.

• **Mrs. Latha K** Asst. Prof., and **Dr. A S Raju,** Prof. & Head, Dept. of BME presented paper titled "Deep Ensemble of VGG, ResNet and Inception for Multimodal Authentication System" in the 2nd IEEE International Conference on Networks, Multimedia and Information Technology (NMIT-CON-2024) during 9th and 10th, August 2024, in association with IEEE Bangalore Section, organized by Nitte Meenakshi Institute of Technology, Bangaluru.

• **Dr Batluri Tilak Chandra,** Asst. Prof,

Dept. of ME, published the journal paper Title "On three body abrasive wear resistance of eggshell and marble powder reinforced hybrid sustainable polymer composites" in the Institution of Engineers, Springer, 22nd August 2024.

• **Mr. Sharath Babu C G,** Asst. Prof., Dept. of CSE has presented his research paper titled "Review on Secure Data Transfer over Internet Using Image Steganography" in the International Conference on "Advances in Aerospace and Navigation Systems: Artificial Intelligence in Aerospace engineering" held at ACS College of Engineering, Bengaluru, Karnataka on 22nd and 23rd August 2024.

• **Mrs Shaheena Khanum, Dr. Ravi Prasad D and Dr. Yogananda B S,** Asst. Prof., Dept. of EEE have Published a paper entitled "Comparisons of various conversion topologies for offshore wind power systems connected to the grid" in International Conference on Advancements in Engineering, Science & Management organized by Radhakrishna Institute of Technology and Engineering, Coimbatore, Tamil Nadu, India on 30th August to 31st August 2024.

• **Mrs. Veena N D**, Asst. Prof., Dept. of CSE, has published a paper entitled "Unlocking the Coverts: How 'Machine Learning is Revolutionizing Covert Communication" in the International Journal of Science and Research ISSN 2319-7064, volume:13, Issue 8, August:2024.

• **Dr. C D Guruprakash,** Prof., Dept. of CSE, published a research article titled "Patient-Centric Electronic Health Record Manager Leveraging Blockchain for Enhanced Security" in the International Journal of Science and Research (IJSR), ISSN: 2319-7064, Vol 13, Issue 8, August 2024

• **Dr. Shilpa G N** and **Dr. Nataraja C** Asst. Prof., Dept. of EEE has published a paper entitled "Review of Wavelet Transform-Based Short-Term Load Forecasting Enhancing Accuracy and Efficiency" in International Journal of Novel Research and Development on August 2024.

• **Dr. Shilpa G N,** Asst. Prof., Dept. of EEE has published a paper entitled "The Impact of Advanced Hybrid Controllers on a Six-Phase Wind Energy Conversion System" in IJRASET on August 2024.

• **Dr. C D Guruprakash,** Prof., Dept. of CSE, published a research article titled "Performance Evaluation of GLCM, HOG and LBP using T1- Weighted MR Brain Image" in the SSAHE - Journal of Interdisciplinary Research (JIR), Vol 5, Issue 1, 2024

• **Mrs. Prathibha S B,** Asst. Prof., Dept. of CSE, under the guidance of Dr. M C Supriya, Prof. & Head, Dept. of CSE(DS), published a research article titled "Homomorphic Cryptosystem for Protected Data Transmission for Wireless Sensor Networks" in the SSAHE - Journal of Interdisciplinary Research (JIR), Vol 5, Issue 1, 2024.

• **Dr. B H Manjunath,** Prof. & Head, Dept. of Civil Engineering, published a paper on "A review on Strength and Durability Aspects of Blended Cement Concrete using Sugarcane Bagasse Ash" in SSAHE Journal of Interdisciplinary Research, in the month of August 2024.

• **Dr.Venkatesh S H, Dr. Manu S, Dr.C S Ravindra Sagar, Dr.Manohar R Gombi** published a research paper on "Heat transfer analysis through semi spherical fin with nanofluid flow", International Journal of Research Publication and reviews, in Vol. 5 Issues: 8, ISSN 2582 – 7421, Page No. 1343-1348 of August 2024.

• **Mrs. Chetana C, Basavaraj M Ittanagi, M Lelli Thivagar, Sunil Jacob John, Said Jafari,** published a research paper on "On Milli continuous function and its Applications" South East Asian Journal of Mathematics and Mathematical Sciences, Vol. 20, ISSN 2582-0850 Page No. 31-50. (SCOPUS)

• **Dr. G T Sreenivasa** published a research paper on "Ricci Solutions in - Kenmotsu manofolds admitting quarter symmetric metric connection", in Journal of Xi'an University of Architecture & Technology, August 2024, Vol. XVI, Issues: 6, ISSN: 1006-7930, Page No. 08-16. (SCOPUS), August 2024,

• **Dr. P S Purnima,** Asst. Prof., Dept. of BME published a chapter "Kalman Filter Based Seizure Prediction Using Concatenated Serial-Parallel Block Technique" in a Book titled "Modelling and Optimization of signals using machine learning techniques." Pages 313-325, ISBN:9781119847687, DOI:10.1002/9781119847717, published on 23rd August 2024, Scrivener Publishing LLC, Wiley online Library.

• **Mr. Kantharaju** Asst. Prof., Dept. of BME authored a review paper titled "Quantum Cryptography for Health Data Security-A Review" in International Journal of Sciences and Research, Vol 13 issue 8,. ISSN:2319-7064, August 2024

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Student Publication

- **M Tamilarasan,** M.Tech student, Dept. of CSE under the guidance of Dr. Channakrishnaraju, Prof. & Head, Dept. of AIML, published a research article titled "Utilizing an enhanced deep convolutional neural network for disease detection based on human cough sounds" in the SSAHE - Journal of Interdisciplinary Research (JIR), Vol 5, Issue 1, in August 2024.

Faculty Achievements

Mr. Keshavamurthy T G , Asst. Prof., Dept. of ECE successfully defended his Ph.D viva voice on research topic "Processing of ECG signal for Person Authentication" on 5th August 2024, under the guidance of **Dr. M N Eshwarappa** , Prof., and Head, Dept.of ECE, SSIT-Tumakuru. Dr. Keshavamurthy T G now being awarded with Ph.D degree is recognised as **100th Ph.D** awardee at our University, SSAHE.

Mrs. Rashmi H C, Asst. Prof., Dept. of ISE successfully defended her Ph.D viva voice on research topic "Design and Analysis of Cryptographic Techniques on Energy Constrained Devices to Provide Security in Healthcare in IOT" on 6th August 2024, under the guidance of **Dr. C D Guruprakash,** Prof., Dept.of CSE, SSIT-Tumakuru.

Mr. Praveen Kumar C, Asst. Prof., Dept. of EEE has delivered a lecture on "Angel investment, Funding opportunities for early stage entrepreneurs", as part of MRCE-IIC, webinar series on startup on 8th August 2024 organized by Malla Reddy College of Engineering, Sikandrabad

Mrs. Nirmala G, Asst. Prof., Dept. of CSE has successfully defended her Ph.D thesis on 12th August 2024 under the guidance of **Dr. Guruprakash C D,** Prof., Dept. of CSE, SSIT, thesis titled "Energy Efficient Data Aggregation in Wireless Sensor Networks using Artificial Intelligence Approach".

- **Dr. A R Pradeep,** Asst. Prof., Dept. of Civil Engineering has reviewed journal in SSIJ bearing title "Vibration based damage assessment of a frame structure using support vector machine algorithm". Reference no: SSIJ Indexed Journal – SSIJ-D-24-00159 on 14th August 2024.

- **Mr. Praveen Kumar C**, Asst. Prof., Dept. of EEE has Invited as a resource person to deliver a technical talk on " Entrepreneurship and Innovation as a career opportunity" on 23rd August 2024 at Krishna Institute of Technology.

Mr. Praveen Kumar C, Asst. Prof., Dept. of EEE has delivered a technical talk on " Exploring Entrepreneurship and Innovation as a promising career paths" on 26th August 2024 at Reva University Bangalore.

Mr. Akshay J, Asst. Prof., Dept. of Civil Engineering has completed his Ph.D viva voce under VTU, Belagavi on "Structural and functional evaluation of white topped pavements for Indian conditions and simulate interface" under the guidance of **Dr. G Mahesh Kumar,** Prof. & Head, Dept. of Civil Engineering, Sridevi Institute of Engineering and Technology, Tumakuru. External Examiner Dr. Raviraj M, Professor, Dept. of Civil Engineering, NITK Surathkal at Dept. of Civil Engineering, Sridevi Institute of Engineering and Technology, Tumakuru on 31st August 2024.

Faculty Participation

• **Dr. Annapurna H S**, Prof., & HoD, **Mr. Prasanna Kumar M, Asst. Prof., and Mrs. Sujatha S** G Asst. Prof., from Dept. of ISE and **Mrs. Swarnalatha G L, Mrs. Prathibha S B, and Mrs. Bharathi N,** Asst. Prof., from Dept. of CSE attended one day offline workshop on Cyber Security Tools on 6th August 2024 organized by Pooja Bhagavat Memorial Mahajana Education Center, Mysuru.

• **Dr. Guruprakash C D**, Prof., Dept. of CSE has participated in IEEE EDS Mini-Colloquia program on Semiconductor Emerging Technologies-SET, organised by IEE SRMIST Electron Device Society in association with the Dept. of Electronics and Communication Engineering, SRMIST, Kattankulathur, Tamil Nadu on 8th and 9th August 2024.

• **Dr. Renukalatha S,** Prof., & Head, **Mrs. Bhoomika N, and Mrs. Dhanya P.M**, Asst. Prof., Dept. of CSE have Participated in 10 hours International Faculty Development Program on "Machine Learning and Artificial Intelligence" organized by SJB Institute of Technology, Pimpri Chinchwad College of Engineering and Research, Ravet, Pune, Sri Venkateswara Degree College, Kadapa, SJB Institute of Technology, Bangalore, and Sri Indu PU College, Hyderabad in collaboration with ExcelR Edtech Pvt. Ltd from 12th August to 19th August 2024.

• **Dr. Babitha M N,** Asst. Prof., Dept. of ISE and **Mr. Pradeep M**, Asst. Prof., Dept. of ISE attended Infosys Springboard Summit-24 held at Infosys campus, Electronic city, Bengaluru on 23rd August 2024.

Student Achievements

• **Ms. Lakshmi S and Ms. Mrudula P**, 8th semester students from Dept. of CSE has been selected by Capgemini with an annual package of 4.5 LPA.

• **Ms. Mehrul Huda Fathima** 3rd year Dept. of BME student is doing a hospital internship at SNR Hospital, Kolar for the period of 1 month from August to September 2024.

• **Ms. Bhoomika L** 3rd year Dept. of BME student is doing a hospital internship at Basaveshwara Medical College & Hospital, Chitradurga for the period of 1 month from August to September 2024.

• **Ms. Chandu Shree, Ms. Mishti M, Ms. Priya Gokul R, Mr. Naveen, Mr. Arun Patel and Ms. Sreemitha N** 3rd year Dept. of BME student are doing a hospital internship at Siddaganga Medical College & Research Institute, Tumkur for the period of 1 month from August to September 2024.

• **Ms. Chitra V C and Ms. Likithashree DB** 3rd year Dept. of BME students are doing a hospital internship at Adichunchanagiri Institute of Medical Sciences, B G Nagara, Bellur Cross, Mandya for the period of 1 month from August to September 2024.

• **Mr. Aditya Bharadwaj P** 7th Semester student with **Ms. Keerthana and Ms. Ananya** 5th Semester students are doing their internship at KVM Medtech, Bangaluru, for the period of 1 month from August to September 2024.

• **Ms. Nisarga N M,** 2024 passed out batch Dept. of BME Student, got selected for GE Healthcare, Bangaluru.

• **Mr. Shivshankar A R**, 2024 passed out batch Dept. of BME Student, got selected for GE Healthcare, Bangaluru.

Student Participation

• **Mr. Siddesh K. N,** M.Tech CADS student, Dept. of Civil Engineering has participated in the 47th series of Student Project Programme (SPP) State-level Poster Presentation and Exhibition on 9th August 2024 and 10th August 2024 at Sharnbasva University, Kalaburagi. The project titled "An experimental and Finite Element study on reinforced concrete beams utilizing aluminium waste in improving shear performance" under the guidance of Dr. Sowjanya G. V. & Mrs. Sahana T. S. was selected for the Poster Presentation.

Department Activities

- Dept. of BME had MoU with BMS College of Engineering, Bengaluru to collaborate on faculty and student exchange programme to facilitate Research and Development. The MoU will be effective from 1st Aug 2024 to July 31st 2027.

Placement News

- A lot of placement training and activities are being conducted for the final and pre-final year students. In the month of August Teachnook company has recruited 23 students, Technologics Global Pvt Ltd grabbed 9 students for internships and 2 students were recruited by XCEL Corp. Global Quest Technologies , KodNest, Intime Tec, Q-spider and Academor are the companies expected......

College Events

Dr.Savitha D Torvi was handed over the charge of Head of the Department of Electronics and Telecommunication Engineering, on 31st August 2024.

Independence Day Celebration

78th Independence Day was celebrated at the our campus on 15th August. Principal, All HODs, Deans, Section Heads, Faculty and students witnessed the occasion. Havaldar. Dil Kumar Rai who joined Indian Army in 2007. Presently working at 4 Karnataka Batallion, Tumakuru was the chief guest. Principal Dr. M S Raviprakasha, Chief guest Havaldar. Dil Kumar Rai, with all other dignitaries hoisted the flag with high respect followed by National Anthem. With a few words from the dignitaries, sweets were distributed to all followed by breakfast arranged to all he one gathered to the occasion. The event was respectably organised by the Dept. of Sports headed by Physical Education Director, Mr. Rudresh K R.

Person of the month

Satya Nadella   (August 19, 1967)

Satya Nadella, born on August 19th, 1967, in Hyderabad, India, is the CEO of Microsoft and is renowned for his transformative leadership. Joining the company in 1992, Nadella has held various pivotal roles, culminating in his appointment as CEO in 2014. His leadership has steered Microsoft toward a strong emphasis on cloud computing, particularly through the enhancement of its Azure platform, which has become a market leader.

Nadella is credited with fostering a cultural shift within Microsoft, promoting a growth mind-set that encourages collaboration, inclusivity, and innovation among employees. Under his guidance, Microsoft's market value has soared, solidifying its position as one of the most valuable companies globally. His strategic vision has also led to major acquisitions, such as LinkedIn in 2016 and GitHub in 2018, which have broadened Microsoft's ecosystem and influence in the tech landscape.

His accolades include being named one of TIME magazine's 100 Most Influential People in 2018 and receiving Fortune's Businessperson of the Year award in 2014. Additionally, he has been recognized as the Global Indian of the Year by the

Economic Times and has earned several honorary doctorates for his contributions to technology and leadership. Nadella also authored "Hit Refresh," where he reflects on his personal journey and Microsoft's evolution under his leadership. His approach to leadership emphasizes empathy and a forward-thinking vision, making him a celebrated figure in the technology industry.

Quote of the month

> **"Challenges are what make life interesting and overcoming them is what makes life meaningful "**
>
> **| Joshua J Marine**

Quantum Computation

Quantum computing is a rapidly emerging field focused on the development of computer technologies centered on the principles of Quantum Physics. Quantum Physics explains the nature and behaviour of energy and matter on the quantum (atomic and subatomic) scale. Quantum computing uses Qubits to perform specific computational tasks with greater efficiency than their classical counterparts.

In 1981, Paul Benioff at Argonne National Labs came up with the idea of a computer that operates with quantum mechanical principles. In 1984, David Deutsch of Oxford University provided the critical idea behind quantum computing research and the possibility of designing a computer that is based exclusively on quantum rules. Concept of Qubit and its properties

From Bits to Qubit

Bit: A digital computer stores and processes information using bits, which can be either 0 or 1. In modern computing and communications, bits are represented by the absence or presence of an electrical signal, encoding "0" and "1" respectively.

Qubit is the physical carrier of quantum information. It is the quantum version of a bit, and its quantum state can be written in terms of two levels, labelled $|0>$ and $|1>$. $|>$this notation is known as 'ket' notation and $>|$ is known as 'brac' notation. Both are together called as Dirac notations.
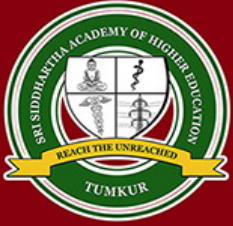
Applications of Quantum Computers

Simulation: The quantum computer is able to crunch enormous data, which includes molecular activity in one being. This ability enables the computer to create very accurate simulations of real life events, such as photosynthesis. Optimization: Instead of calculating a problem at a time, this computing approach solves various probabilities. Through such a system, you can see how each option can provide the most advantages. Thus, you can optimize that option. Cryptography: Cryptography involves difficult mathematical problems such as discrete algorithms and integer factorization. These problems take a long time to solve. However, a computer with quantum principles can do it quickly. Machine Learning: This concept is difficult to apply as it takes so much time and financial resources to do it. The computing system can help speed up the process significantly. Data Search: Although the conventional computer has evolved so much over the past decades, data search still takes too long sometimes. Quantum principles are capable of speeding up this data search process, especially if the search is unstructured.

Nobel Prize 2022 in Physics

The three scientists Alain Aspect, John Clauser and Anton Zeilinger are awarded Nobel Prize-2022 in Physics for their ground breaking research and demonstration on particles that are in entangled states. What happens to one particle in an entangled pair determines what happens to the other, even if they are really too far apart to affect each other. The laureates' development of experimental tools has laid the foundation for a new era of Quantum Information Technology.

Comparison key	Classical Computer	Quantum Computer
Basis of computing	Large scale multipurpose computer based on classical physics	High speed computer based on quantum mechanics
Information storage	Bit-based information storage using voltage/charge	Quantum bit-based information storage using electron spin or polarization
Bit values	Bits having a value of either 0 or 1 can have a single value at any instant	Qubits have a value of 0, 1 or sometimes linear combination of both, (a property known as superposition)
Number of possible states	The number of possible states is 2 which is either 0 or 1	The number of possible states is infinite since it can hold combinations of 0 or 1 along with some complex information
Output	Deterministic (repetition of computation on the same input gives the same output)	Probabilistic (repetition of computation on superposed states gives probabilistic answer)
Gates used for processing	Logic gates (AND, OR, NOT, etc.)	Quantum gates (X, Y, Z, H, CNOT etc.)
Operations	Operations use Boolean Algebra	Operations use Linear Algebra and are represented with unitary matrices
Circuit implementation	Circuit implemented in macroscopic technologies (e.g. CMOS) that are fast and scalable	Circuits implemented in microscopic technologies such Super conducting qubits etc

| **Dr.Madihally Nagaraja**
Professor
Department of Physics

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(Deemed to be University under Section 3 of the UGC Act, 1956)

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Savyasachi **Dr. G.Parameshwara**
Honorable Chancellor, Sri Siddhartha Academy of Higher Education
Honorable Secretary, Sri Siddhartha Education Trust, Tumakuru.
Honorable Home Minister, Govt of Karnataka State
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