



PCCoE's *Samvaad*

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.....Connecting Minds & Souls

Our Patrons : Pimpri Chinchwad Education Trust

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Samvaad Editorial : Story telling in Engineering Education

**"A Story takes all the Senseless data that the world provides and turns it into something meaningful" -
Jonah Sachs, author of Winning the Story Wars.**

The aim of Professors in Engineering Education is to groom the students with Knowledge and Wisdom. A holistic Engineer gets developed with the experience sharing of Teachers. The stories need not be extraordinary but needs to be simple.

Contemporary story, experience story, autobiographical, fiction, or non-fiction, any type of story has a place in an Engineering Curriculum and classroom. Serving as an Engineer is far from being just technical, it includes all the joys, pains, challenges, mistakes etc. of being human. Avoiding too much of explanation and just making the students to enjoy to be in Story is important. Let me illustrate with a sample.

In any Computer language, there is a concept called "function". Any beginner in an Engineering College will find it difficult to understand the real essence, if directly introduced with lots of codes and syntax. I use to narrate it with a story.

"Imagine I need to arrange a marriage function of my Son. I was thinking - How can the job be split to various people, make it simplified and also responsible? Immediately, I called my brother, gave him Rs 50,000 and said him to take care of booking of hall. Subsequently called Sister to take care of makeup with Rs 25,000 and called uncle to responsibly arrange food.

The pseudo code is given as follows:

```
Call_brother(50,000) { Book Hall}  
Call_sister(25,000) { Book Makeup}  
Call_uncle(1,00,000) { Arrange food}
```

The story does not stop. After the marriage is over, brother, sister and uncle report me with the balance money (if any)

The reframed code is :

```
Call_brother(50,000) {Book Hall, return remaining mon-  
ey}
```

The analogy of marriage function to understand the concept "function" has been very useful for me since many years. Imagination of faculty and continuing the example, to explain, call by value, call by reference is up to one's own skill. Stories simplify complex concepts of Engineering.

Finally, how a story is said – Matters!!

Even interesting incidents happening in our daily life while playing with kids, spending time with elders (hearing their stories), watching movies, chit- chatting with friends, travelling, family occasions etc can be effectively correlated with concepts of Engineering and narrated as stories.

To attract today's beautiful minds (students) while teaching Engineering, narrating a concept through story telling will be an innovative way of teaching.

Developing our interest towards relating stories with Engineering matters too!!



Dr. K. Rajeshwari
HOD-Computer Engineering, PCCoE

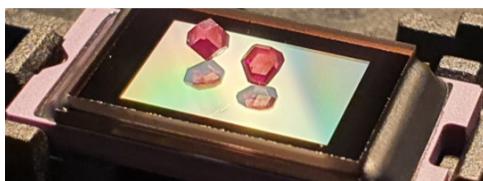
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Guest Article: Spintronics—The Future of Electronic Devices

Quantum computing is the future of information technology. It works on the fundamental principles of quantum physics to perform computing at unprecedented speed, complexity, and precision. By 2030, quantum computers will influence our everyday life, finance, health sector, and trade. The quantum computing industry will significantly influence various fields such as artificial intelligence (AI), communication, cryptography, material science, energy, climate modelling, networks and security infrastructures, block-chains and others in which rigorous computation is needed, etc.

In a quantum computer, the basic working unit is defined by a qubit similar to a bit as in a conventional computer. Except in this case, unlike a Bit which takes a discrete value of 1s or 0s; the Qubit can have any values in-between 0s and 1s. Even multiple values within this range can be assigned simultaneously. This is a fundamental property of quantum physics that only can be exhibited by a quantum system. For example, a qubit can be a spin of an electron or a proton, utilizing the fundamental quantum property of an atomic system.

This very nature of a fundamentally new form of data assignment, storage and computation deliver the opportunity to develop new algorithms specific and which takes advantage of quantum physics. These Quantum algorithms are being developed and hold a lot of promises and prospects. Like regular computers, quantum computers and quantum algorithms also need programming languages to communicate. This opens the field of developing and testing new programming platforms to define algorithms for various purposes.



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In addition to several existing quantum computer hardware systems, we require novel hardware designs to build a practical quantum computer. An excellent candidate for building such hardware is using a special type of diamond namely nitrogen-vacancy centre in diamond (NV centres).² A typical NVD is shown in figure 1. It is an atomic flaw in this otherwise perfect crystalline diamond that is very unique and has the potential to be used as a quantum sensor also to get insights

into the properties and interactions of materials at scales where their quantum natures dominate. The defect in the diamond crystal is created by replacing one atom of carbon with one atom of Nitrogen while the neighboring atom is purposely made vacant. The electron associated with the NV defect is a fundamental atomic entity governed by the principle of quantum mechanics. It's a stable solid-state quantum system readily available for testing and using quantum physics under ambient conditions. Us-

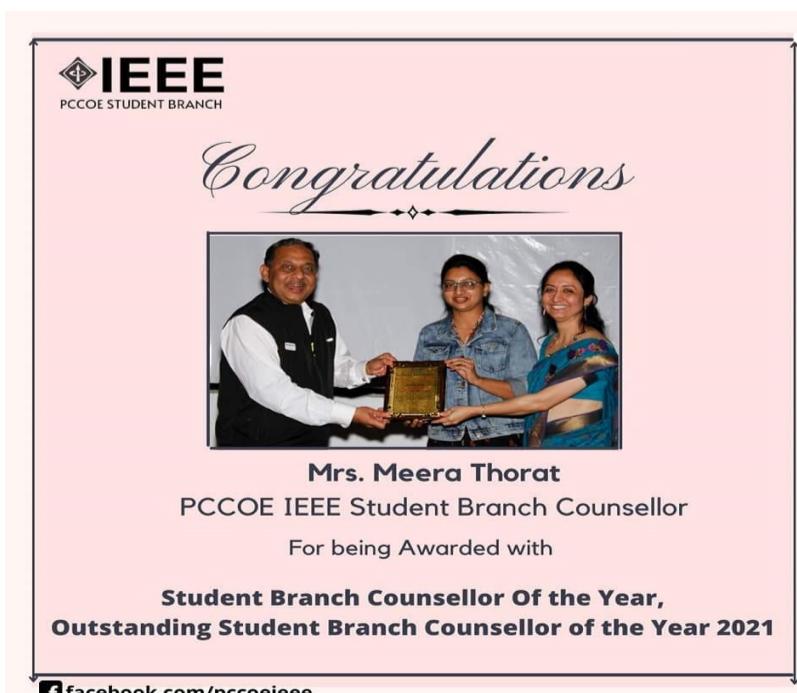
ing NV spins in diamond, a mobile, compact, room temperature operable quantum computer is available in the market.³ In nutshell, the prospects of the diamond based quantum computers are very promising; an evident possibility to deliver new applications to thwart current challenges and contribute towards benefit to humankind and beyond.

References:

1. <https://www.mckinsey.com/business-functions/mckinsey-digital/our-insights/quantum-computing-use-cases-are-getting-real-what-you-need-to-know>
2. G Balasubramanian et al., Nature Materials, 8, 383-387, 2009.
3. www.xeedq.com

Faculty Achievements

1. Dr. K. Rajeswari was Invited as a Guest of Honor by Cyber Secured India team during the grand launch event of Cyber Security and Digital Forensics Internship Program on 29th January. Participants comprised of students, corporate employees, entrepreneurs, police officials, and newbie from various cities and countries around the globe.
2. PCCoE signed MoU with Cybage Khushboo to provide sponsorship to meritorious but economically backward students. This MoU is coordinated by Dr. Jyoti S. Kulkarni.
3. Dr. Rajani.P.K received amount of Rs.37,200/- on 17/01/2022 as Seed Funding for startups by PCET Trust under the banner of PCCOE CIIL
4. Dr. Rajani.P.K along with Mr. Jayesh Kolhe, Mr. Guruprasad Deshpande & Mr. Vishal Khandagale (TE E&TC students) registered a start-up company "ElectroLaxme Technology LLP" with product "Automatic Sanitary Napkin Vending Machine". It is recognized as a start-up by the Department for Promotion of Industry by Government of India and Internal Trade which is working in 'Social Impact' Industry and 'Corporate Social Responsibility' sector from 19/01/2022 to 25/10/2031.
5. Dr. Mohit Prasad from Dept. of AS&H qualified SET examination in Physics held by UGC, New Delhi.
6. Ms. Sanjana Gandhi, Ms. Tejal Gandhi, Ms. Ruchika Bhamre, Ms. Anuja Jadhav, Dr. Roshani Raut published patent "Drone for Detecting Anti-Terror Activity" on 21/01/2021 Application No: 202221000875
7. Mr. S. D. Kurhade published a book titled "Structural Analysis", ISBN Number 978-93-90450-57-2, First Edition January 2022.
8. Mrs. Anjali Sakurkar, Dr. Sonali Kale, Mr. Dattatraya Anarse, Dr. Mahadev Kadam published a book titled "Engineering Physics" for First year students of PCCOE under Techknowledge Publications.
9. Dr. Sonali D. Patil Received Innovator /Researcher Person of the Year 2021 Award by IEEE Pune Section, The award was given by the hands Mr. Dinanath Kholkar, Vice President and Global Head of Analytics & Insights, TCS.
10. Ms. Meera A. Thorat received Outstanding Student Branch Counselor of the year 2021 award by IEEE Student Branch Counselor



PCCoE Technical Feast

1. Dr. Sandip T. Mali delivered an expert session on the subject on 15th January 2022 during a three days online workshop on 'Implementation and Execution of Third Year Civil Engineering 2019 Pattern Syllabus' organized by APCOER and Members of BOS, Civil Engineering, SPPU.
2. Dr. Sandip T. Mali delivered a guest lecture on Gate preparation for Air Pollution Control and Solid Waste Management sponsored by PREERA NA Center for SC ST students at Vidya Pratishtans Kamalnayan Bajaj Institute of Engineering and Technology, Baramati, Department of Civil Engineering, on 29th January 2022.
3. Mr. S. P. Banne delivered the expert lecture on "Earth Pressure Theories" organized by Dr. J. J. Magdum College of Engineering, Jaysingpur, Kolhapur dated on 15th Jan, 2022.
4. Dr. K Rajeswari delivered a session in One-day Online Faculty Development Program on Artificial Intelligence on 24th January 2022.
5. Satyashil D. Nagarale, B. P. Patil published paper titled "RTL Verification and FPGA Implementation of Generalized Neural Networks: A High-level Synthesis Approach" at 3rd International Conference on Mobile Computing and Sustainable Informatics, Springer Lecture Notes on Data Engineering and Communications Technologies.
6. Swati Patil, Sagar Singh, Archana Bhamre and Sonal Shirke published paper titled "Solar Energy Based Natural Pest Control System" in Vol IX, Issue I (I), January 2022, Kanpur Philosophers with ISSN 2348-8301 UGC Care List Group I in International Journal of Humanities, Law and Social Sciences, Kanpur, India.
7. Vaibhav Tiwari, Sudharm Kalamdani, Rohit Raut, Rajani P.K published paper titled "Hygieia: Smart Health and Sanitizing Dispenser" at "ICT Analysis and Applications", as part of book series "Lecture Notes in Networks and Systems", vol 314. pp 335-343, Springer, Singapore. Online ISBN: 978-981-16-5655-2, published on 1/1/2022. https://doi.org/10.1007/978-981-16-5655-2_32
8. Komal Nair, Neha Motagi and Rupali Narayankar, Rajani P.K published paper "Error Detection and Error Concealment of Medical Images Using Frequency Selective Extrapolation (FSE) Algorithm" at 6th International Conference on Information and Communication Technology for Competitive Strategies (ICTCS 2021) held at Jaipur, Rajasthan during 17th -18th December 2021.
9. Mrs. M. P. Chinchkar organized workshop on "Master Class on Motor Control for EV Application" in association with Pantech e Lerarning Pvt. Ltd., Chennai from 01st January 2022 to 12th January 2022.
10. Dr. Deepti Khurge delivered a session on topic "Quantum Information Processing: Scope in VLSI Design" at National level Webinar organized by Indus University Ahemdabad, Gujarat
11. Dr. M.B. Kadam of Dept. of AS&H, gave an invited talk in a lecture series organized by Mudhoji College, Phaltan India under their Lead college Scheme on 15th January, 2022.
12. Prof. Anand Jain successfully completed 20Hrs. training program on "Design Patterns using C# and .NET" on 31st January 2022, conducted by Udemy.
13. Prof. Anjana Arakerimath (HOD-MCA) successfully completed FDP by AICTE Training and Learning (ATAL) Academy on "Design Thinking to nurture Creativity and Innovation leading to Entrepreneurship" on 22nd Jan 22.
14. Prof. Anjana Arakerimath (HOD-MCA) participated in "Research Methodology Workshop Series" jointly organized by IMCC Research Center and IQA Cell on 29th January.
15. Dr. Rajkumar B. Patil delivered a session on "Design for Reliability" at MIT World Peace university, Pune" on 31/01/2022
16. Issha Mohod, Akshay Munot, Sahil Hemnani, Babita Jane presented paper "COVID-19 Outbreak from the Experience of Wave 1 and start of Wave 2: Comparison and Analysis" in International Conference on Artificial Intelligence and Machine Vision (AIMV) 2021 Published IEEE xplore DOI:10.1109/AMV53313.2021.9670988
17. Nupur Kulkarni Rohini Pise, Apurva A Jagtap, Omkar Walhekar Shubham Janardhan presented paper "Proof of Digitally Owned Content" in IEEE International Conference for Advancement in Technology (ICONAT), IEEE Bombay Section
18. Dr Roshani Raut delivered a Keynote address in a Faculty Orientation Program under the aegis of BoS-IT, SPPU, Pune on, "Elective II (Artificial Intelligence) and Lab Practice – II (Artificial Intelligence)" on 31st January 2022.

Students Achievements

Maitreyee Hatwalne (BE E&TC)	Won the Consolation Prize for Acting in the Primary Round of prestigious Purushottam Karandak
Team Kratos Racing (TKR) Electric of PCCoE Pune and Prof. Mr. Nilesh Gaikwad	Team Kratos racing (TKR) Electric of PCCoE Pune emerged Overall Winner in Formula Bharat Electric competition held at Coimbatore during 21st Jan to 25th Jan 2022. In the last 8 years, TKR won the National championship title six times and 40 plus awards in different categories.
Esha Mohod (TEIT)	Received two awards 1) Student Member Volunteer Award 2) Outstanding Student Branch Chair of the year 2021, By IEEE Pune Section
Akshay Munot, Esha Mohod, Sahil Hemnani	Received 1st Prize IDEATHON competition organized by PICT IEEE Student Branch
Tanaya Saptashwa (TE E&TC)	Selected for SPPU Mallakhamb and Rope Mallakhamb Team for All India Inter-University Competition being held at Mahatma Gandhi International University, Wardha
Ganesh Sanghvi (TE)	Selected for in Pune District Handball Team for Inter-Zonal Handball competition being held at Shri Shiv Chatrapati College, Junnar



