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DEPARTMENT OF
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SARDAR VALLABHBHAI
NATIONAL INSTITUTE OF TECHNOLOGY

SURAT, GUJARAT, INDIA

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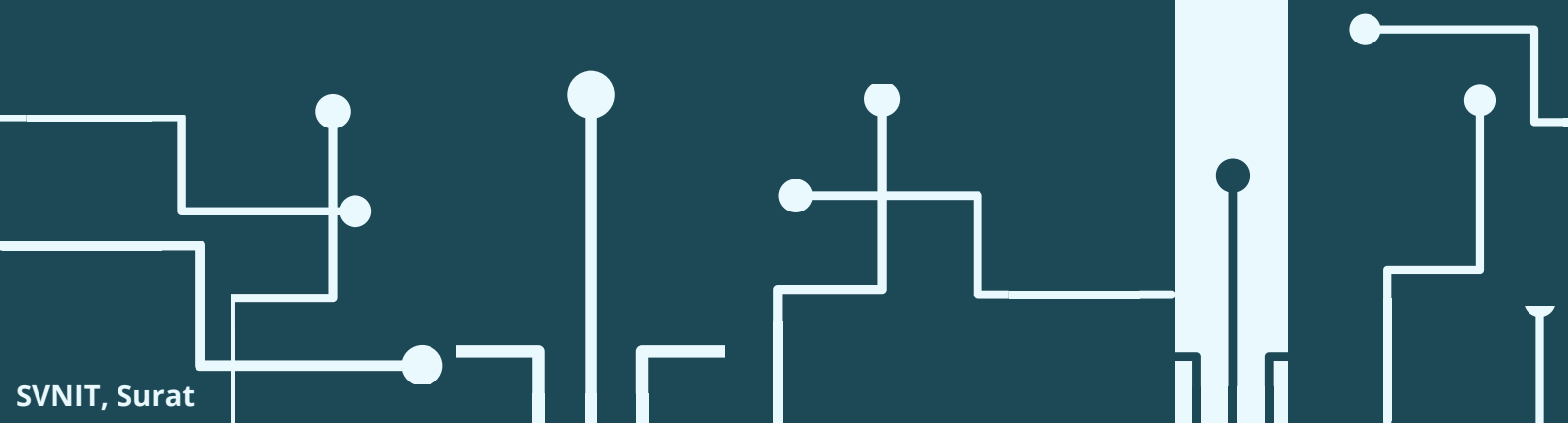
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DIAMOND JUBILEE YEAR CELEBRATION

Sardar Vallabhbhai National Institute of Technology established in 1961 as Sardar Vallabhbhai Regional Engineering College (SVREC) has completed a journey of 60 years. We, SVNITians celebrated Diamond Jubilee in 2021.

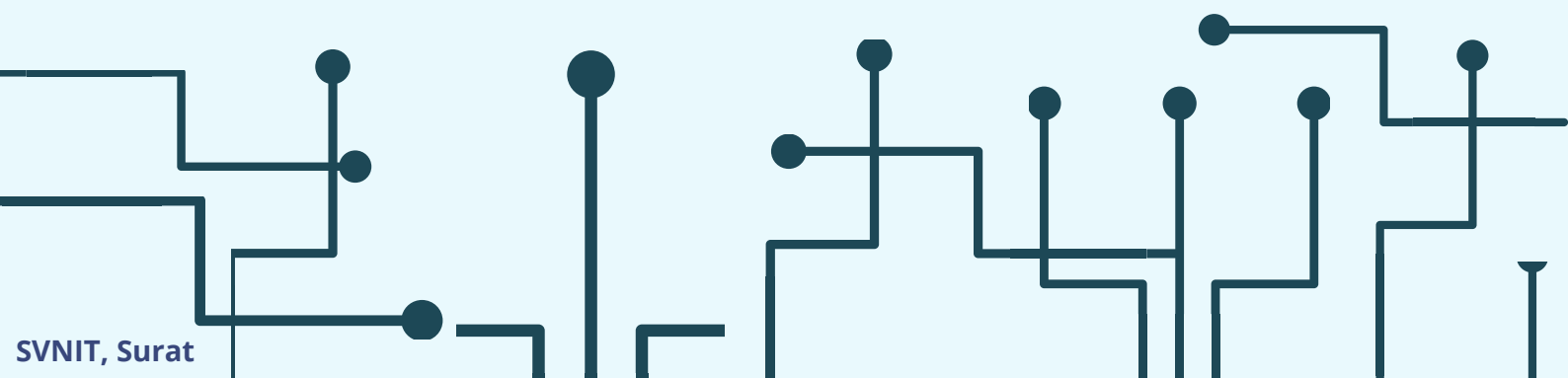
COVID-19 has engulfed the cheerful environment of SVNIT due to physical absence of it's students but the zeal of Diamond Jubilee celebration can still be felt. All the departments and sections are organizing variety of programs under the celebration.



In the Department of Electronics Engineering, we have proposed 3 international conferences namely: VDAT-2021, to be held during September 16-18, 2021; ET2ECN-2021, which is scheduled on November 17-18, 2021; and AVES-2021, to be held on November 19-20, 2021. Right from the students to volunteers to faculty, all are involved in these activities and working hard to make this event a huge success.

These conferences will give the young researchers an opportunity to showcase their ideas and talent to the research world. Well, the things would have been more beautiful if the events would have been held in physical mode, but the current situation does not permit this. We all will be connecting virtually and sharing our knowledge and ideas.

We are looking forward to this once a in lifetime opportunity which will be a moment in history that will be cherished forever.

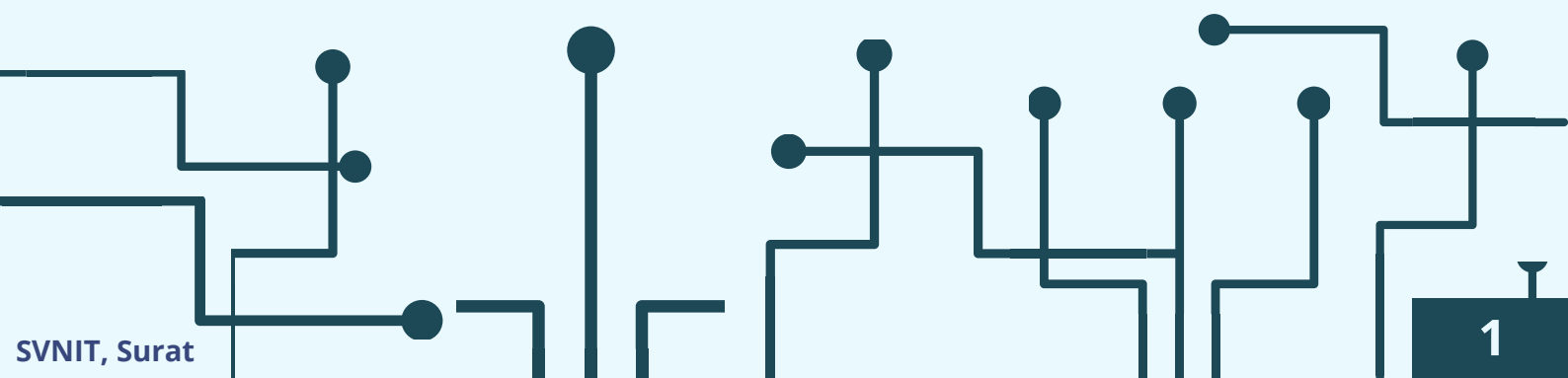


MISSION

The mission of the Electronics Engineering Department is to contribute to society and industry through excellence in education, research, innovations and ethics by stakeholders.

VISION

The vision of the Electronics Engineering Department is to Aim to achieve quality in education and research to create leading Electronics engineers, researchers and entrepreneurs.



A WALK TO REMEMBER



"A Walk to Remember" in my case it is "Run to Remember". A memorable journey of almost 34 years with the Electronics Engineering Department. After passing, I joined the same department in 1993 as a 6th permanent member and immediately realized the whole critical situation of the department which I could not understand during my student days. Department was in deficit of all required infrastructures and manpower. Manpower shortage was balanced with Teaching Assistants but Infrastructure could not. Actually, the Department was running in an old Electrical building with limited resources and a heavy space crunch as only some part of the first floor was allocated to Electronics.

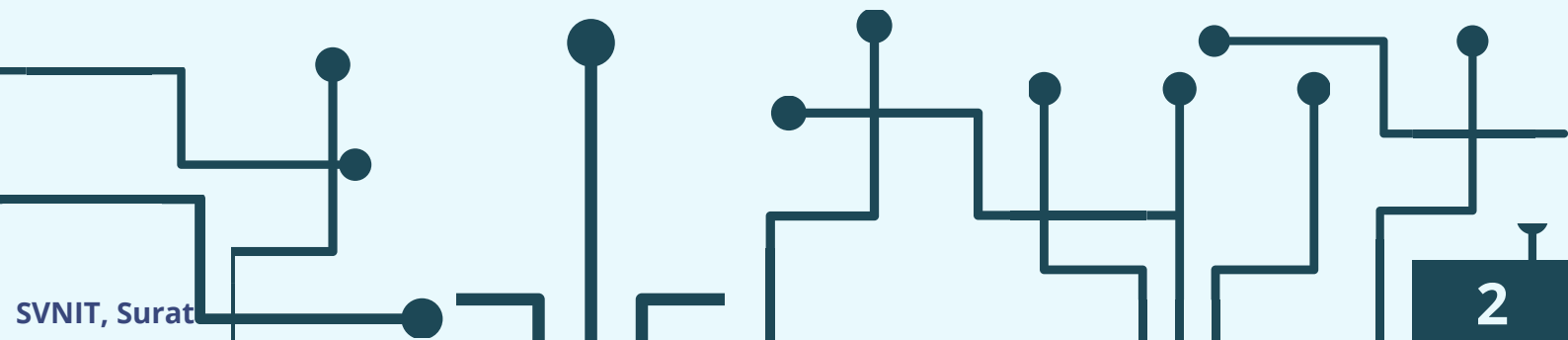
I still remember that along with my academic duties of teaching various subjects & counselling of students, I obtained different grants after years of continuous paper work and personal meetings with Directors, Deans, Registrar and other authority. I uplifted & expanded the department from old electrical to new electronics building (present old building) with first floor approval & construction. Then after extension of department with ground floor & first floor construction. Moreover, equipped the department with most required crucial true facilities like different PCs with Structured Cabling & Internet Facility, Servers, UPS, LCD Projectors, Classroom Benches, White Boards, Split ACs, Different Laboratories with Simulations PCs, Software, DSOs, CROs, FGs, Kits, Faculty Furniture, Seminar Room, EPABX & Xerox Facilities and so on.... With all these eventually the department started properly breathing and walking. It gives me immense pleasure.

My main motivation & dream behind such continuous hard work was just to provide required facilities to teachers for smooth teaching & remotely arrived students for better learning. Moreover, I still remember my days with continuous three years Exam Superintendent of entire SVNIT, Member of PDDC (Post Diploma Degree Courses) admission & teaching during evening classes, Industry-Institute Program as Department Coordinator & Subjects Teacher of Degree Training Course of RELIANCE for their Senior Employees evening classes for 3 years, Department Coordinator & Subjects Teacher of ESSAR Training Course for their Regular Employee for 2 years. In this journey, fortunately, with the leap of time during above efforts, I got continuous help from Dr. J. N. Sarvaiya & Dr. P. N. Patel. I also remember my MTech (Research), Dr. J. N. Sarvaiya as a guide, International Journal Papers Publication & after that I became a double post graduate with MBA & MTech (Research). Then started PhD and left PhD in between due to illness. It also gives me satisfaction that the first Laptop procurement for the entire Faculty of SVNIT after convincing the Director was carried out by me during 2005-06. Further, as an UG In charge for several years, I got a chance to create present guidelines of report preparation & pattern with proper streaming of Seminar & Project exam. I also gained fruitful experience working many times as an In-charge Head and Committee Members of different Procurement Tender Committees, Timetable Committees, Convocation Committees, Conferences, Workshops, Seminars, Training Programs, NPTEL Program, Permanent Faculty & TA Recruitment Committees, UG & PG Exam Committees & so on and still continue.

I have seen bright days & also dark days and experienced blessings of GOD. I am happy with the current status of the department equipped with adequate faculty and strong infrastructure. I am also happy with the continuous attachment of past students with me till date. I am sure the Electronics Department will keep 'pace' with Modern Electronics but due to space crunch, I end "My Walk to Remember" here only with my 'pacemaker' as it is now a requirement of my life to keep my physical survival pace on to provide full contribution to the department in coming future.

Hoping for integrity, effortful success & good health to all.

Prof. N. B. KANIRKAR
Associate Professor,
DECE, SVNIT.



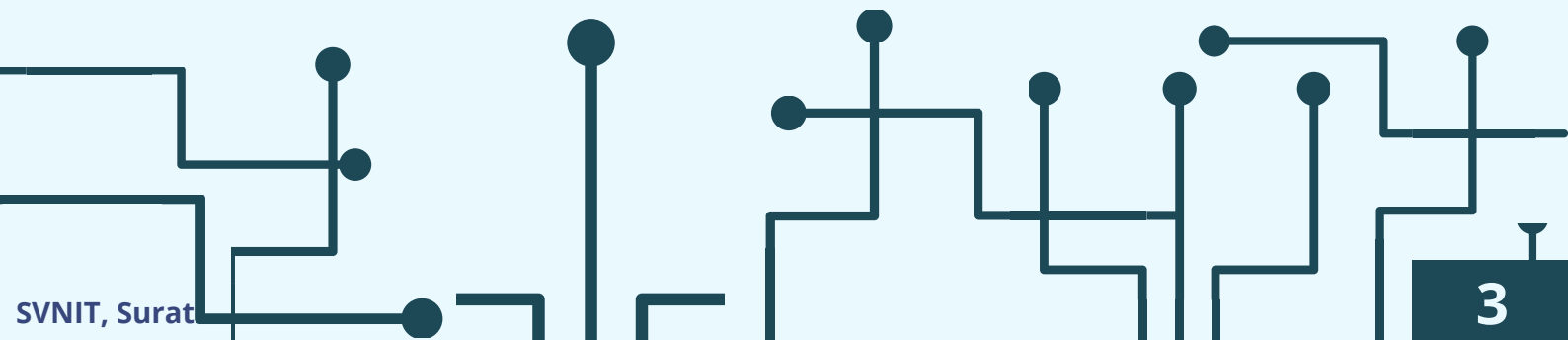
Vigilance Awareness Week

Theme:- Independent India @ 75:
Self Reliance with Integrity



The vigilance awareness week 2021 was observed in the department during 26-10-2021 to 01-11-2021. Banners promoting vigilance were pasted at the entrance and the notice board of the department. These were also sent through email to the faculty members and non-teaching staff. The integrity pledge was taken in the physical mode.

The M.Tech and Ph.D students were present along with the faculties and non-teaching staff during the physical pledge. Apart from this, the faculty members who had online classes at that stipulated time, had taken pledge during the class with the students. An online quiz was also conducted. Total number of participants in the quiz were 34 including the faculty members and the students.



CONFERENCES

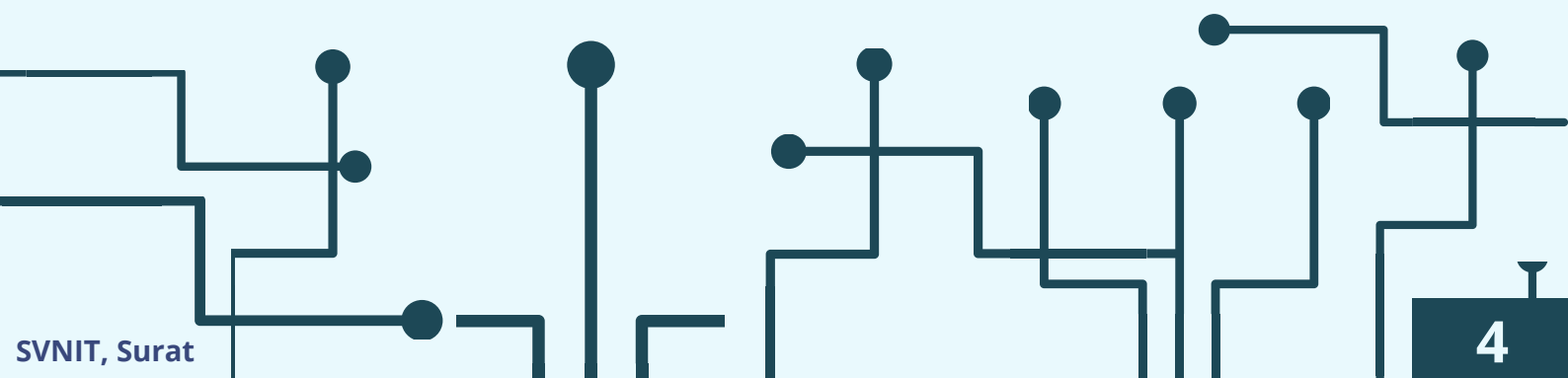


25th International Symposium on VLSI Design and Test (VDAT-2021)



VDAT began as a small workshop in the year 1998. In 2005, it acquired the status of a Symposium. The purpose of the Symposium is to promote the advancement of all aspects of VLSI. The 25th International Symposium on VLSI Design and Test (VDAT-2021) is being held in Sardar Vallabhbhai National Institute of Technology, Surat India. The aim of this symposium is to bring academics, researchers, start-ups and industrial practitioners together to exchange their ideas in the area of VLSI design, test and system design.

The 25th International Symposium on VLSI Design and Test (VDAT-2021) is the main event in India in the field of VLSI design, bringing together all the stakeholders that includes academia, industry, R&D houses and software system design, verification, test, EDA tools development. This edition is organized by VLSI Society of India (VSI) in association with Sardar Vallabhbhai National Institute of Technology (SVNIT), Surat, and is being hosted over online platform during September 16-18, 2021. VDAT-2021 was organized as part of diamond jubilee celebration of SVNIT Surat.

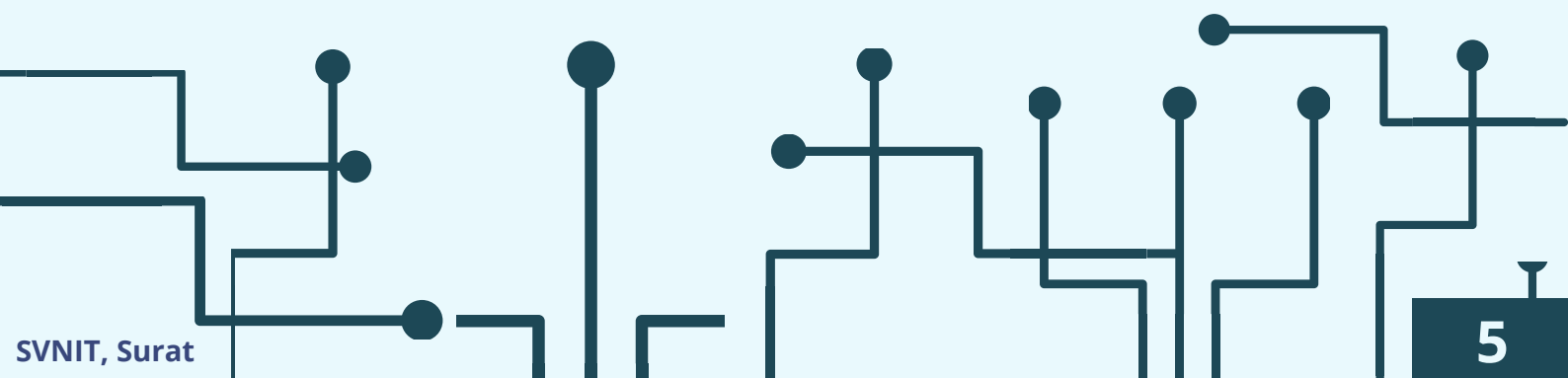


CONFERENCES

The three-day event consists of a conference with keynotes, plenary sessions, regular papers, tutorials, workshops, design contests, industry papers. The conference is complemented by a product showcase by industry partners showing the state-of-the-art in system design, software tools and products. The conference creates an excellent platform for the delegates to interact with all stakeholders in the semiconductor domain.

The theme for VDAT-2021 "Intelligent systems for Humanity" aims to emphasize the potential of the VLSI community to find multidisciplinary solutions which helps society. Integrated circuit with artificial intelligence (AI) capability has become a key element of human life in various ways from autonomous vehicles to wearable devices. The emerging devices have provided new heights to chip capacity and functionalities. Intelligent systems have become inseparable entity of human life. To meet the theme of conference, following tracks have been devised.

- Devices Modelling and Emerging Devices/Material Technologies
- VLSI Circuit and System Design
- FPGA based Design and Embedded Systems
- CAD for VLSI and Hardware Security
- Testing and Verification



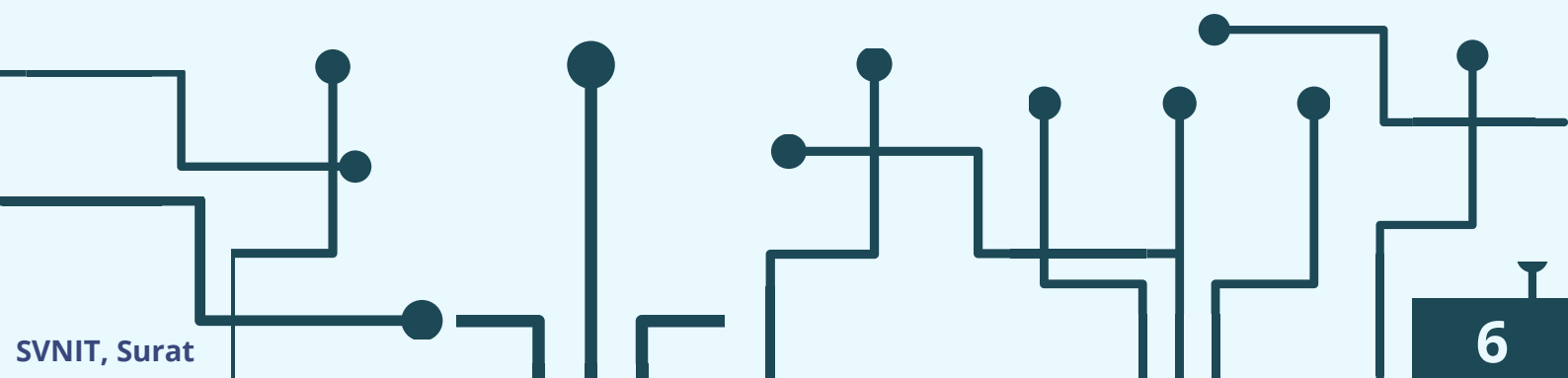
CONFERENCES

Details of Technical Papers

This year we received a good number of submissions for the technical program in spite of COVID-19 pandemic. We have received 124 papers under the various tracks. The papers were reviewed by an international pool of 89 reviewers and program committee members. On average, each paper received more than 3 reviews. The handful of papers with fewer or less detailed reviews, mostly on account of the difficulty in finding appropriate reviewers in a few highly specialized research areas, were flagged for extra attention and discussion at the program committee meetings. In keeping with the tradition, the paper selection meeting was held in August, 2012 at Surat. After considerable discussion and debate, which on a few occasions involved contacting reviewers during the meetings to seek further clarifications, the committee selected 34 papers for presentation at the conference (25% acceptance rate).

It is worth mentioning that VDAT 2021 is technically co-sponsored by IEEE Gujarat Section and that processing will be published on IEEE Xplore.

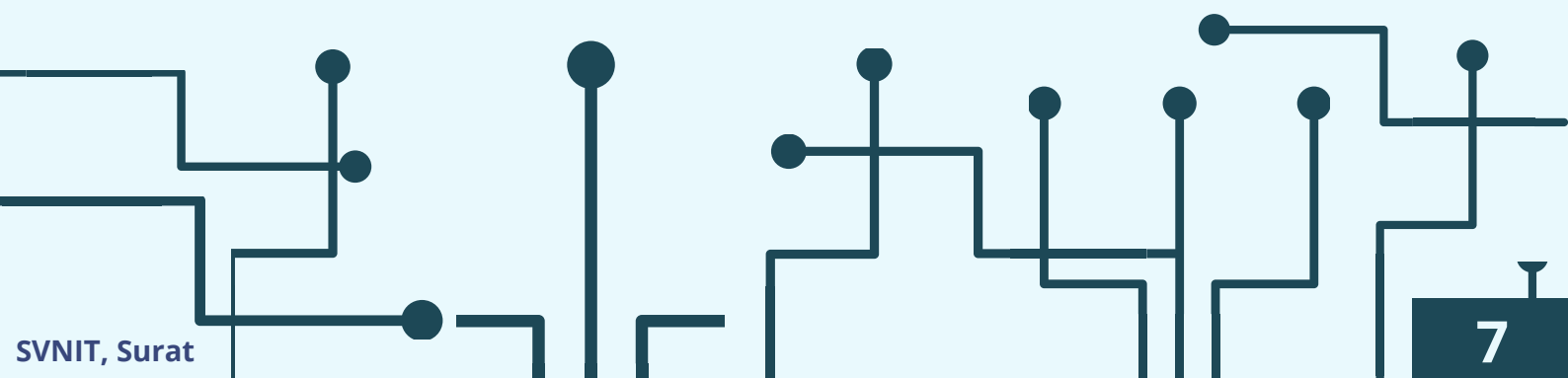
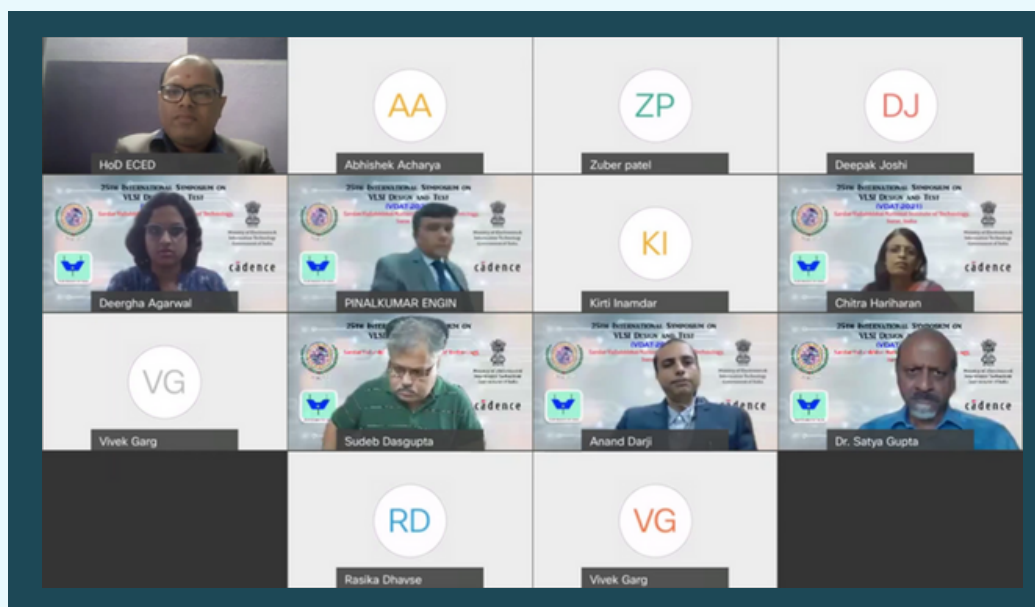
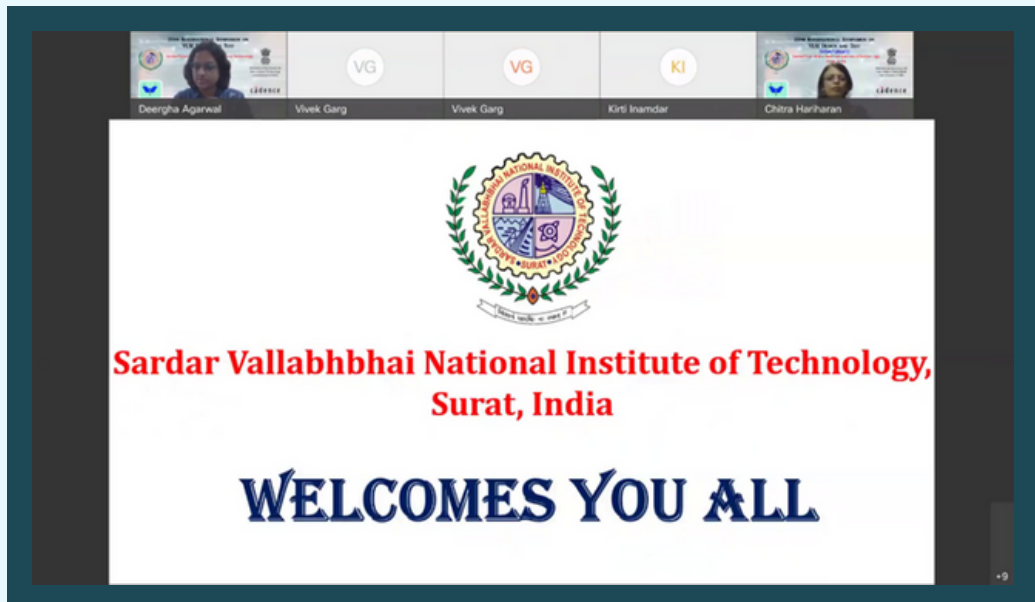
Number of Submissions	124
Selected Papers	34
Presented Papers	33
Acceptance Rate	27.42%



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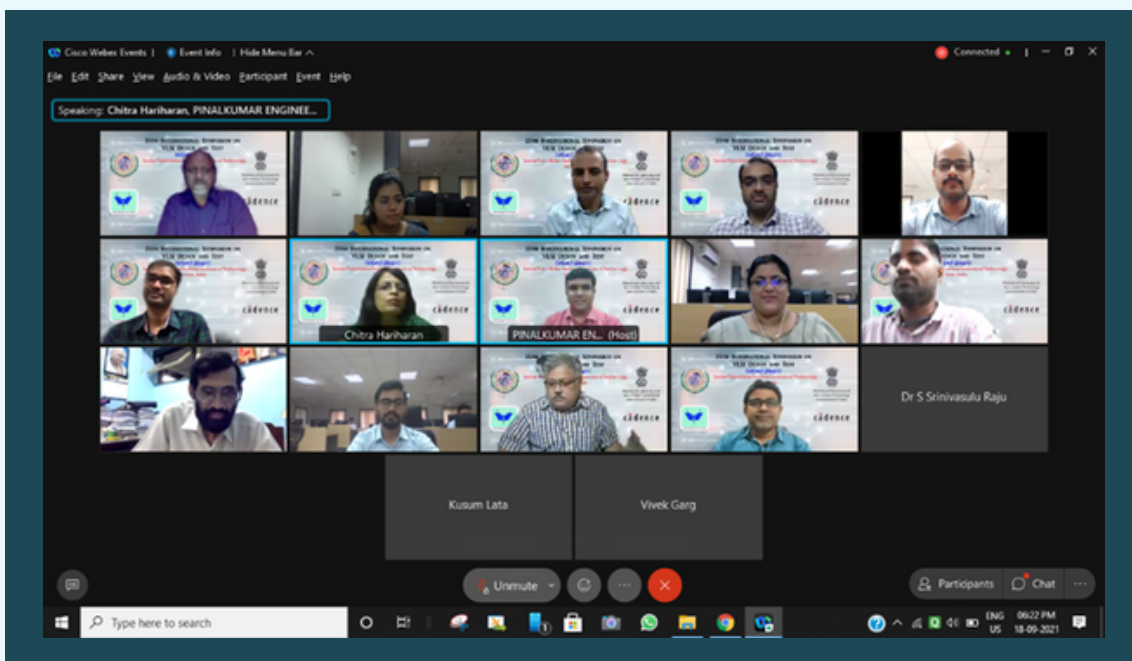
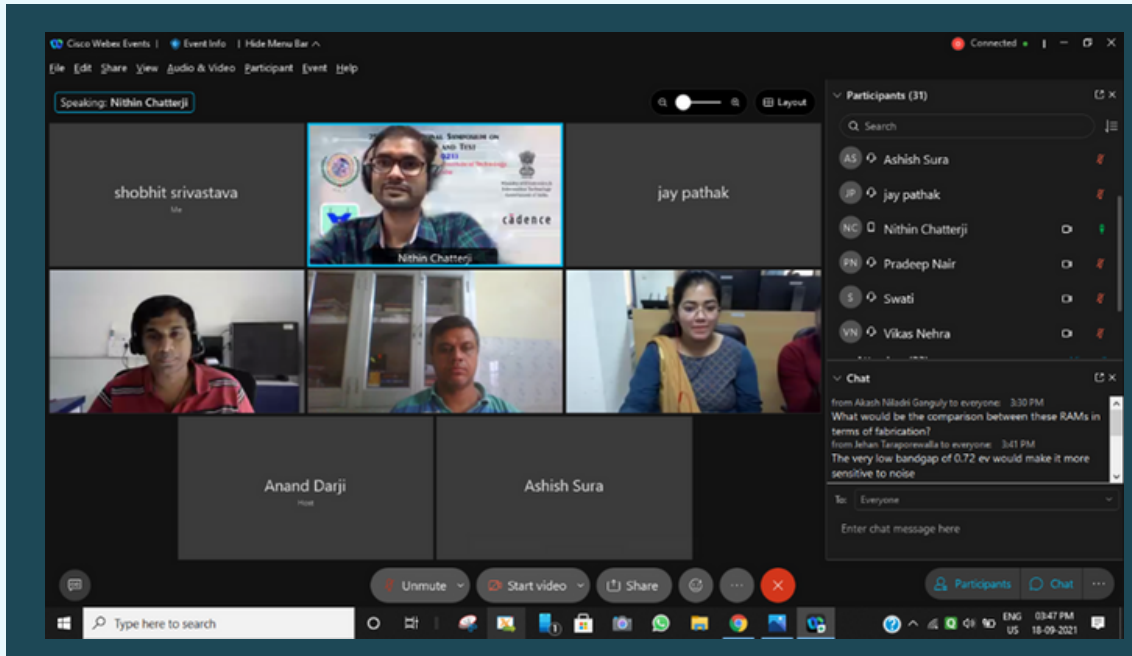
Glimpses of VDAT-2021

Inaugural Function, Keynote 1 and Keynote 2



CONFERENCES

Paper Sessions:



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COMMITTEE

General Chairs

- Pinalkumar Engineer, SVNIT Surat
- Abhishek Acharya, SVNIT Surat

Organizing Chairs

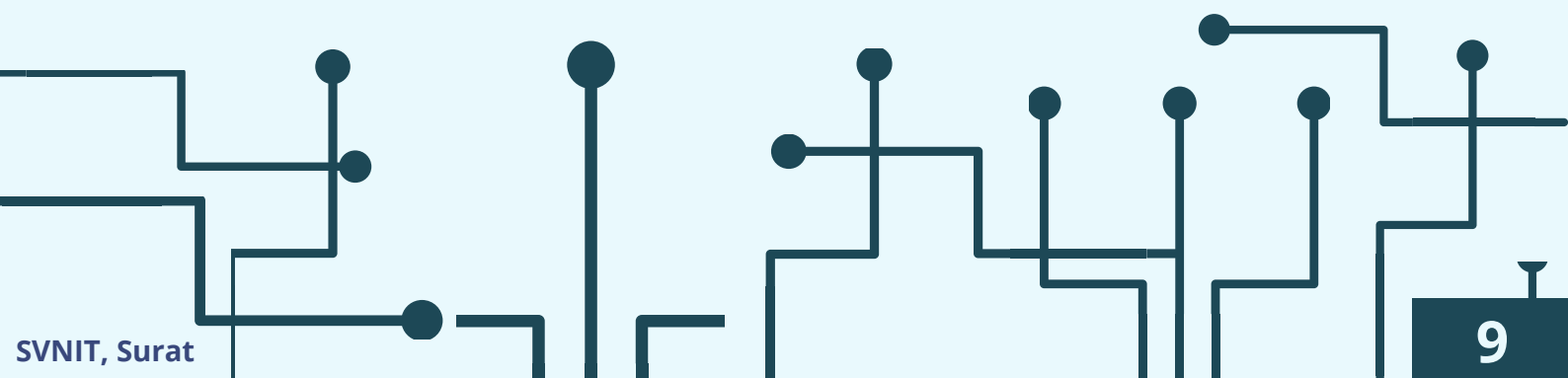
- Zuber Patel, SVNIT Surat
- Deepak Joshi, SVNIT Surat

Program Chairs

- Anand Darji, SVNIT Surat
- Sudeb Dasgupta, IIT Roorkee
- Anand Bulusu, IIT Roorkee

Vice Program Chairs

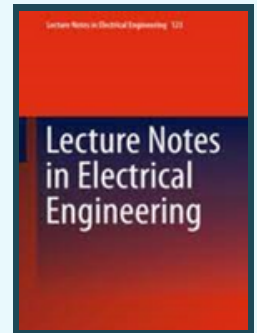
- Virendra Singh, IIT Bombay



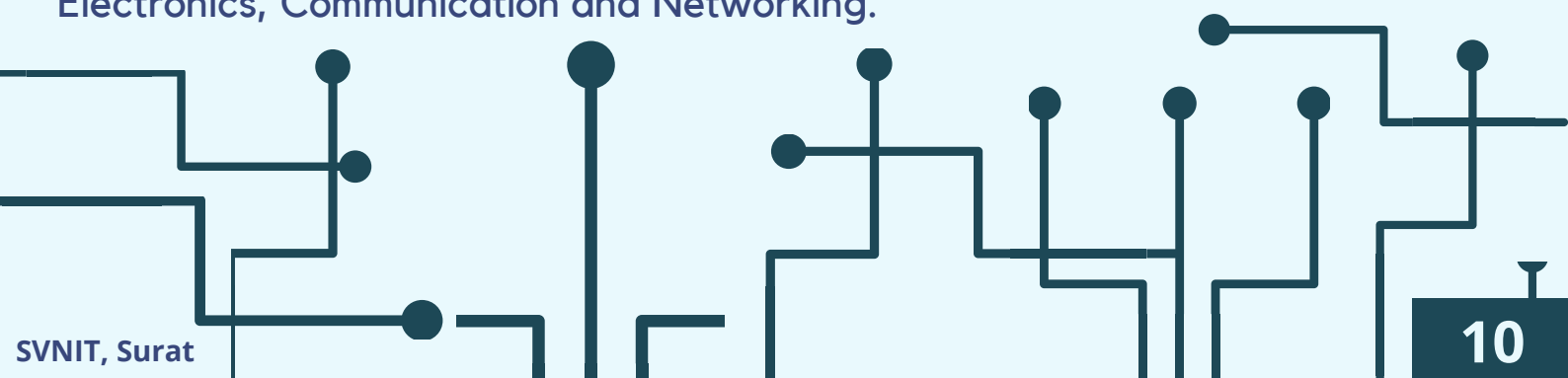
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4th International Conference on *Emerging technology Trends in Electronics, Communication and Networking (ET2ECN 2021)*

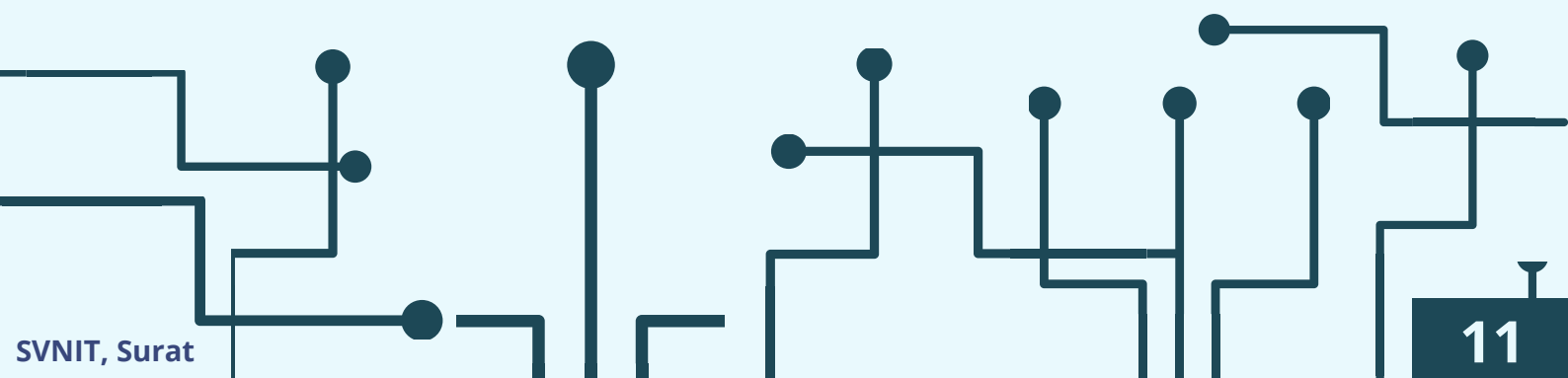


The year 2021 is being celebrated as the Diamond Jubilee Year of our institute, S. V. National Institute of Technology (SVNIT) Surat. The 4th International Conference on Emerging Technology Trends in Electronics, Communication and Networking (ET2ECN-2021), organized in online mode by the Department of Electronics Engineering, during 17-18 November 2021 was a part of this Diamond Jubilee Celebration. Building on the success of previous conferences, ET2ECN has become the most widescale, extensive, spectacular event hosted by SVNIT for its high level and the good size of participation. The event consisted of keynote sessions, invited sessions, paper presentations, covering a wide range of topics in Electronics, Communication and Networking. The conference addressed a broad range of research and real-life application topics, including theory, methods, applications, and tools with an aim of enriching knowledge and motivate the young researchers and experienced Electronics and Communication Engineers who wish to explore new areas in Electronics, Communication and Networking.



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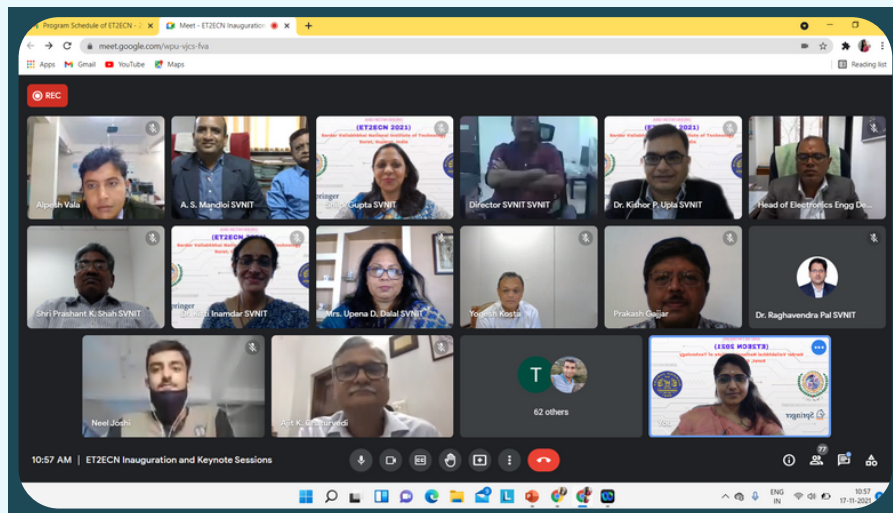
ET2ECN 2021 received an overwhelming response to call for papers and around 71 were received. Based on the SPRINGER guidelines around 41 papers were selected after the first round of plagiarism checking and finally, 30 papers were selected by eminent reviewers for publication in the proceedings. Moreover, 26 number of delegates and 50 number of attendees registered for this event and in total 76 participants took advantage of this virtual conference. The inauguration ceremony was graced by Dr. Ajit Chaturvedi, Director, IIT Roorkee as the chief guest, Dr. Shashank Chaturvedi, Director IPR, Gandhinagar, as our Guest of Honor. There were six keynote sessions by distinguished national and international speakers and a plenary talk by Dr. Y. P Kosta, Professor, ECED, Charusat University, Gujarat. Our keynote speakers were Dr. Sergi Abadal from Spain, Dr. Santosh Kumar from China, Dr. Ashwin Kothari from VNIT Nagpur, Ms. Neha Raj from GlobalFoundries, Singapore Prof. Ramachandra from Norway, and Dr. D C Jinwala from SVNIT, Surat. They disseminated knowledge through their sessions and set pathway for the young researchers by giving them new ideas. Topics related to optical fiber-based sensors, adversarial machine learning, recent trends in communication engineering and its challenges, innovations in semiconductor scaling, face morphing attacks, use of Graphene sheets for reconfigurable antennas etc. covered the basic theme of the conference which was beneficial to the participants. The overall program was a great success.



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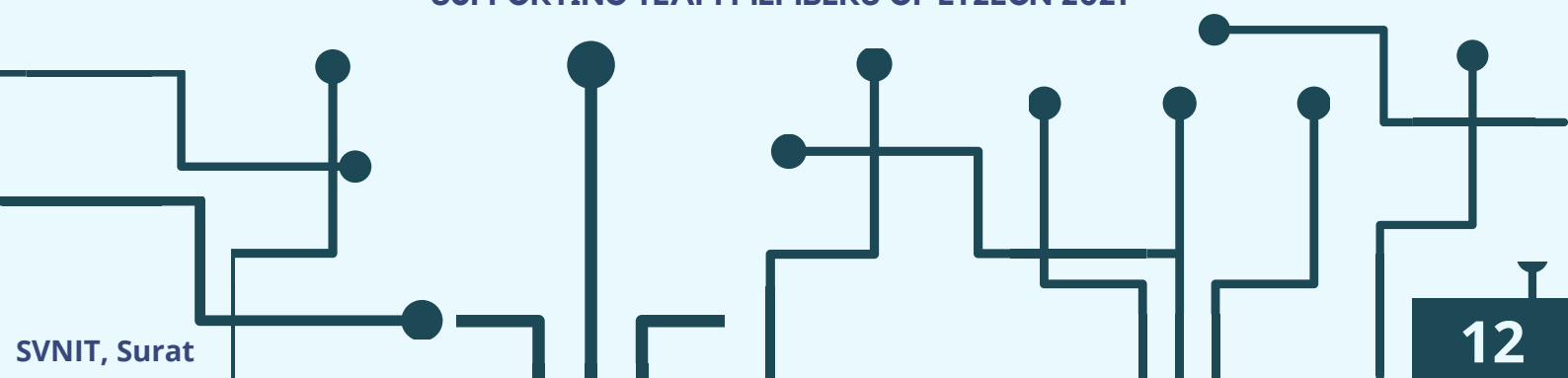
DECE MEMBERS.....



INAUGURAL SESSION



SUPPORTING TEAM MEMBERS OF ET2ECN 2021



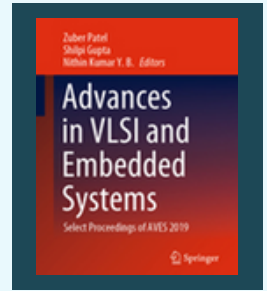
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2nd International Conference on Advances in VLSI and Embedded Systems (AVES 2021)

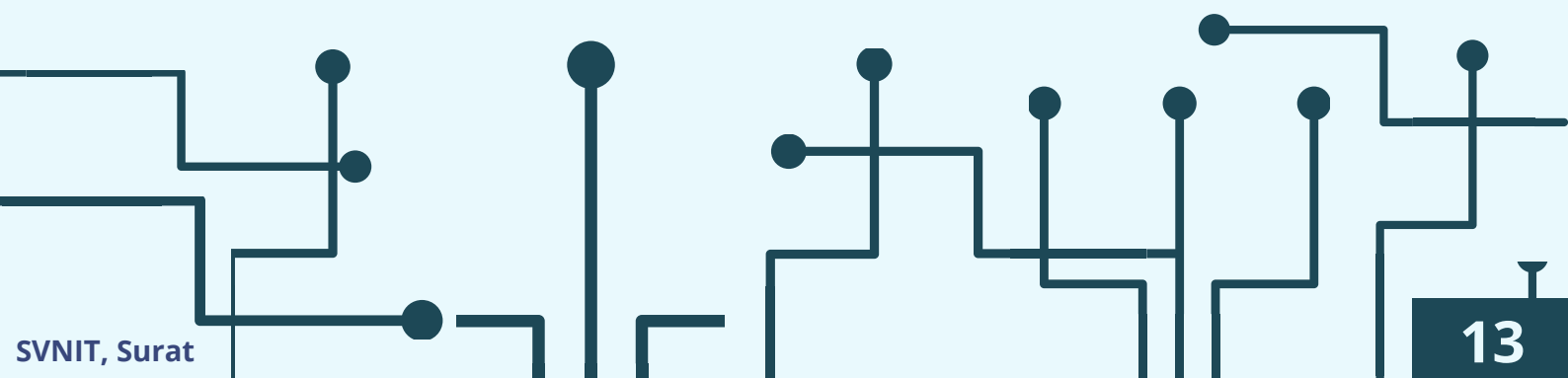
Dec. 18- 19, 2021, SVNIT, Surat (India)

The proceeding will be published in Springer LNEE (Scopus)



AVES 2021 is 2nd version of AVES series of conferences based on the theme of VLSI and Embedded Systems covering five tracks: (i)VLSI Design, (ii)Devices and Emerging Technologies, (iii)Embedded Systems, (iv)CAD for VLSI and (v)Testing and Verification.AVES 2021 is again Sponsored by Springer and all selected papers will be published in LNEE proceedings. This time we received 59 manuscripts from various tracks in the field of VLSI and Embedded systems. After thorough review process, 22 papers were selected for presentation with acceptance ratio of 37%. These papers will be presented in five sessions (three on 1st day and two on the 2nd day of the conference).

AVES 2021 also encompasses 4 Keynotes and 4 Invited talks which will be delivered by eminent speakers across the globe. Prof. Cornel Barna (University "Aurel Vlaicu" , Arad, Romania), Nilesh Ranpura (Delivery Manager ASIC, eInfochip), Prof. Ravi Panwar (professor of IIITDM Jabalpur) and H S Jatana (Former Director, SCL Mohali). Invited talks which will be conducted by Arpit Gandhi (Senior Tech Lead, Intel, Bangalore), H S Jatana (Former Director, SCL Mohali), Dr. Bitan De (Jagiellonian University, Poland) and Prof. M. A. Razzaque (Teeside Univ., UK). So we have speakers from diverse fields of academia, industry and research organizations. I am sure the participants will get enriched with new ideas/ concepts and advanced technologies.

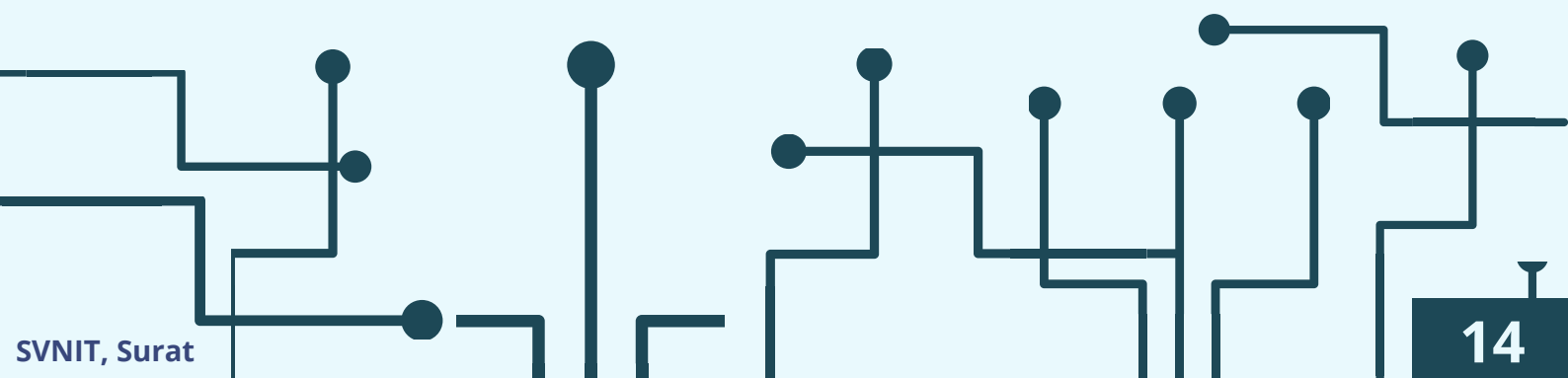


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In AVES2021, a special session Panel Discussion is planned on 2nd Day to discuss on the topic of "Encouraging and Promoting Silicon Startups in India". The experts from eInfochip, Semi-Conductor Laboratory (SCL) Mohali, IIT Bombay, IIT Roorkee and MeitY are panel members.

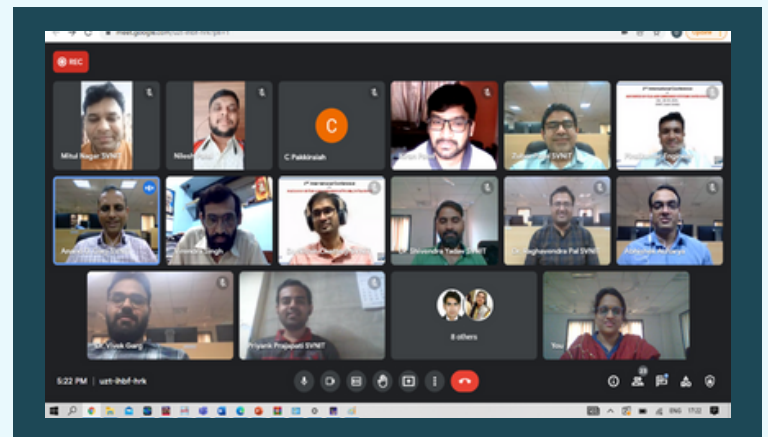
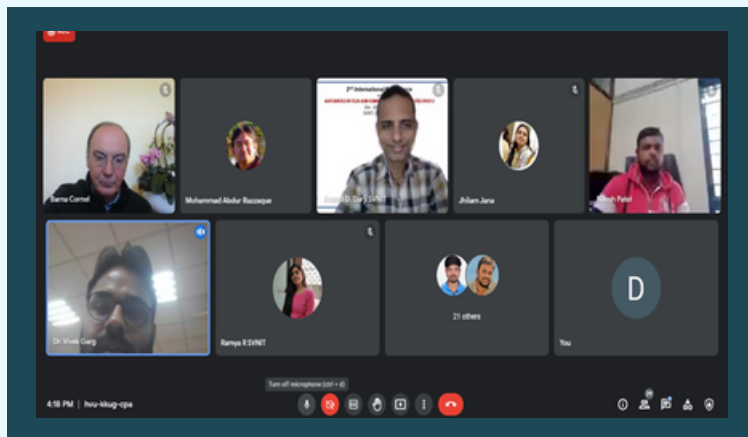
Tutorial sessions were also conducted yesterday by Industry professionals as pre-conference event. The industry experts from VLSI System Design, CoreEL Technologies and eInfochips had given practical exposure to participants which they really appreciated.

Conference received 59 papers. Maintaining acceptance ratio of 37.28%, 22 papers were selected after reviewing process done by 3 reviews per paper. Around 70 reviewers from India and abroad contributed in the review process. Conference had 5 tracks: VLSI Design Track received 30 papers out of those 09 papers were selected for oral presentation, In Device Track out of 11 papers 04 papers selected, Testing and verification track selected 01 paper out of 03 received papers, CAD for VLSI and Hardware Security 05 papers received and 04 were selected, Embedded system track selected 04 papers out of 10 papers



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Glimpses of AVES-2021



Faculty Corner

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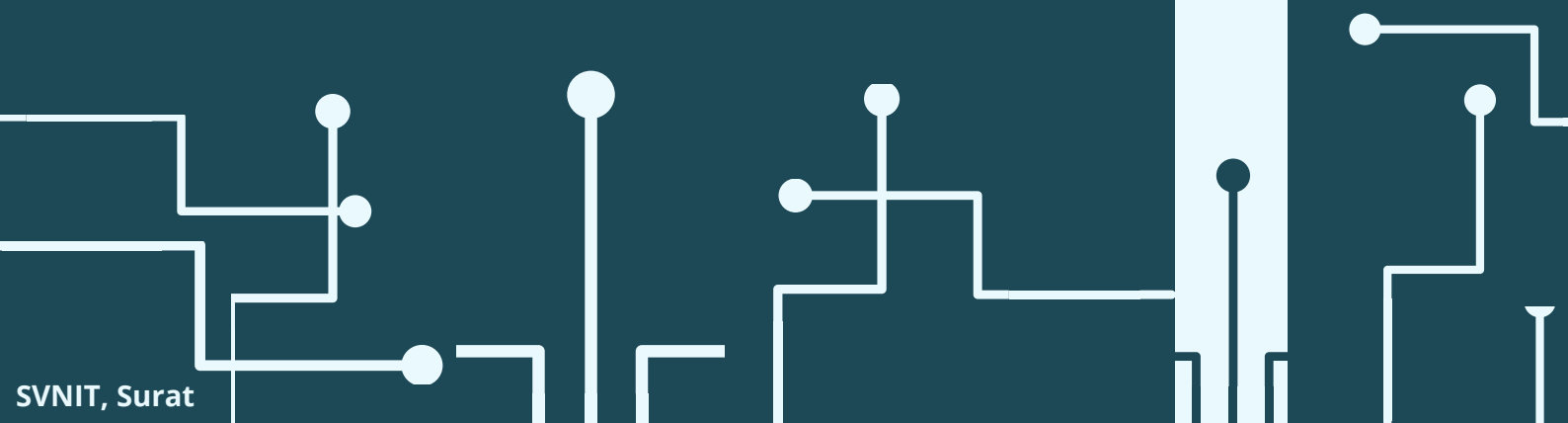
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Patents 21

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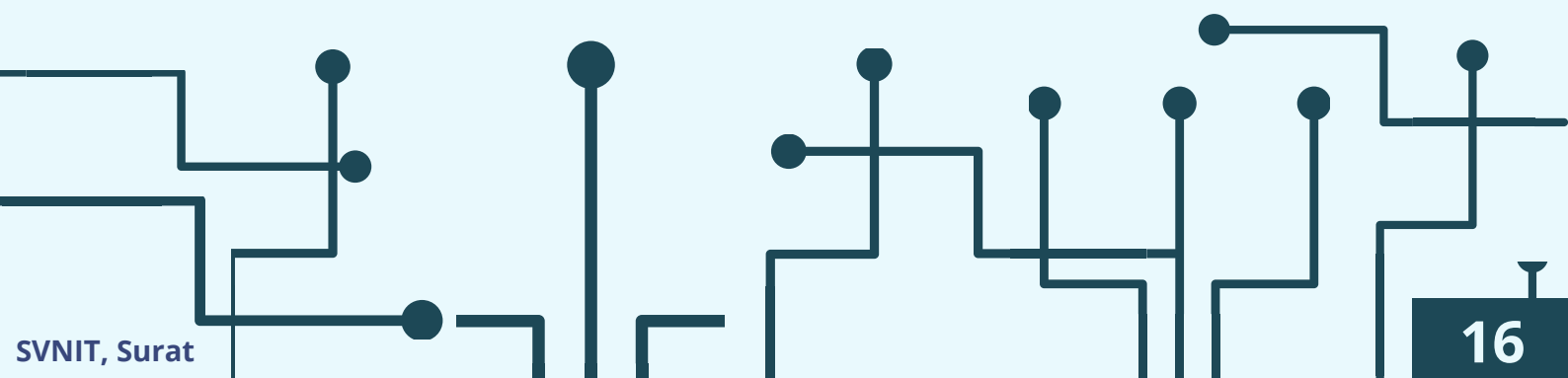
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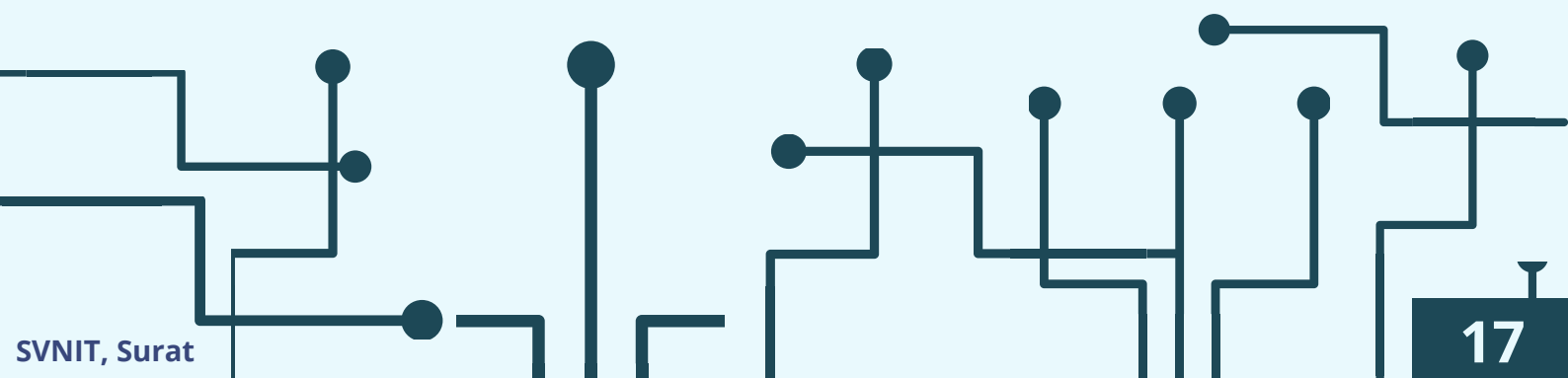
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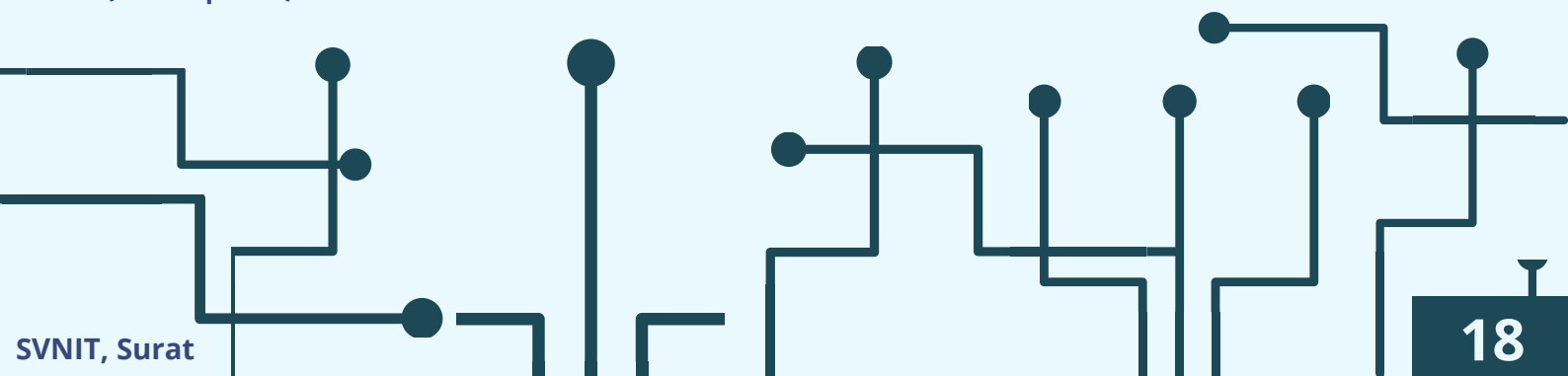
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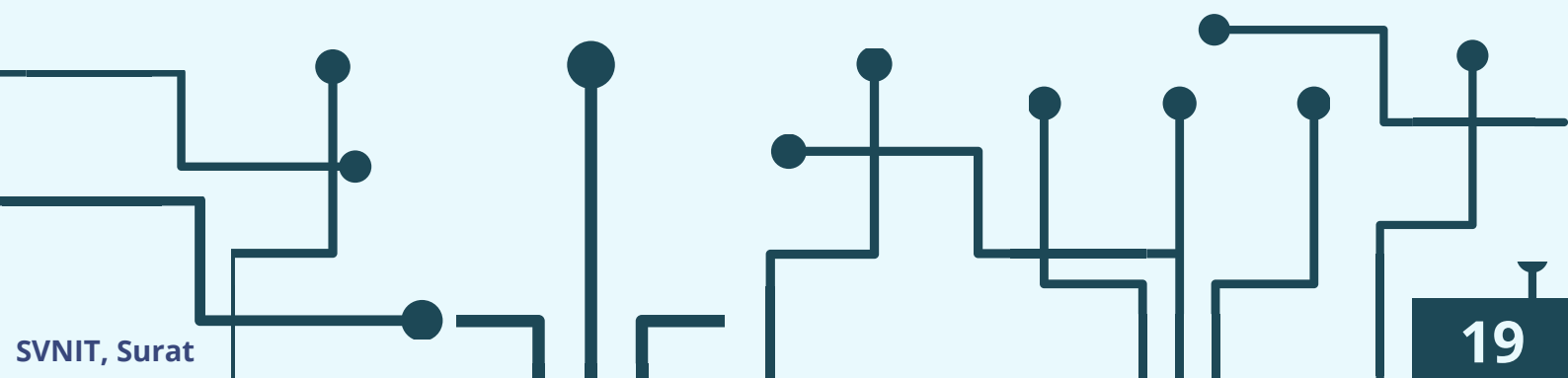
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CONFERENCE PUBLICATIONS

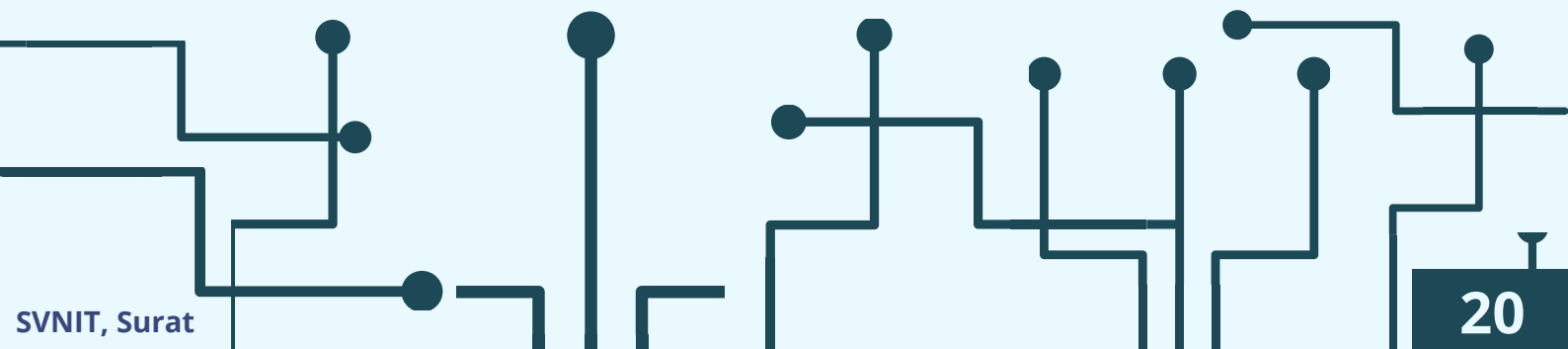
- Darshna Jagiwala, **Shweta N. Shah**, Mehul Desai "**Case Study: NavIC Performance Observation on Low Latitude Region**" 2nd IEEE International Conference on Range Technology, 2021.
- Sweety Jain, Anushka Singh, **Shweta N. Shah**, Roshna Lalam, Deeksha Saxena "**Machine Learning-Based Real-Time Traffic Control System**" IEEE Mysore sub section Flagship International conference, October 24-25 2021.
- Kalpesh Prajapati, Vishal Chudasama, Heena Patel, Anjali Sarvaiya, **Kishor Upla**, Kiran Raja, Raghavendra Ramachandra, Christoph Busch, "Channel Split Convolutional Neural Network for Single Image Super-Resolution (CSISR)", IEEE FG 2021, November 15-19, 2021.
- Vishal Chudasama, Heena Patel, Kalpesh Prajapati, Anjali Sarvaiya, **Kishor Upla**, "Generative Adversarial Network based Improved Progressive Approach for Image Super-Resolution: ImProSRGAN", 4th International Conf. on Emerging Technology Trends in Electronics, Communication and Networking (ET2ECN-2021) SVNIT, November 17-18, 2021, Surat, India, **SCOPUS Indexed** (Accepted).
- Kalpesh Prajapati, Vishal Chudasama, Heena Patel, Anjali Sarvaiya, and **Kishor Upla** "Comparative Analysis of Generative Adversarial Network based Single Image Super-resolution Approaches", 4th International Conf. on Emerging Technology Trends in Electronics, Communication and Networking (ET2ECN-2021) SVNIT, November 17-18, 2021, Surat, India, **SCOPUS Indexed** (Accepted).
- Anand Kumar, **Kirti Inamdar**, "Fractal CSRR Metamaterial based Wearable Antenna for IoT Application", 4th International Conf. on Emerging Technology Trends in Electronics, Communication and Networking (ET2ECN-2021) SVNIT, November 17-18, 2021, Surat, India, **SCOPUS Indexed** (Accepted).
- Deep Jariwala and **Kamal. M. Captain**, "Automatic Modulation Classification: A Novel Convolutional Neural Network based Approach", INDICON 2021, December 18 -19, 2021



PATENTS

Patent Granted/Published

- **Dr. P. N. Patel** and Mr. Arpan Shah, "Antenna Sensor for detection of Knee Effusion", Published in GOVERNMENT OF INDIA THE PATENT OFFICE on 25/09/2020
Registration No. 344476-001.
- **Dr. P. N. Patel** and Mr. Paresh Sagar, "Microwave Sensor Based Soil Analyzer", Published in GOVERNMENT OF INDIA THE PATENT OFFICE on 20/09/2020
Registration No. 333573-001.
- **Dr. P. N. Patel** and Mr. Paresh Sagar, "Metamaterial Based Sensor Device for Material Characterizations", Published in GOVERNMENT OF INDIA THE PATENT OFFICE on 10/06/2021
Registration No. 344476-001.
- **Dr. P. N. Patel** and Mr. Hiren V. Dhuda, "Waveguide for Fusion Plasma Diagnostic", Published in GOVERNMENT OF INDIA THE PATENT OFFICE on 16/10/2020
Registration No. 334362-001
- Dr. P. J. Engineer, **Mr. Lokesh Sharma** "Dual Screen Mobile Device with Solar Charging", Granted, Indian Patent Office on 03/09/2021. Registration NO. 201621010692
- Dr. Krupesh A. Chauhan, **Dr. Shweta Shah** and Mr. Jaydip Vora, "Sanitary Pad Stitching Machine", Published in GOVERNMENT OF INDIA THE PATENT OFFICE on 29/7/2021
Registration No. 345300-001.

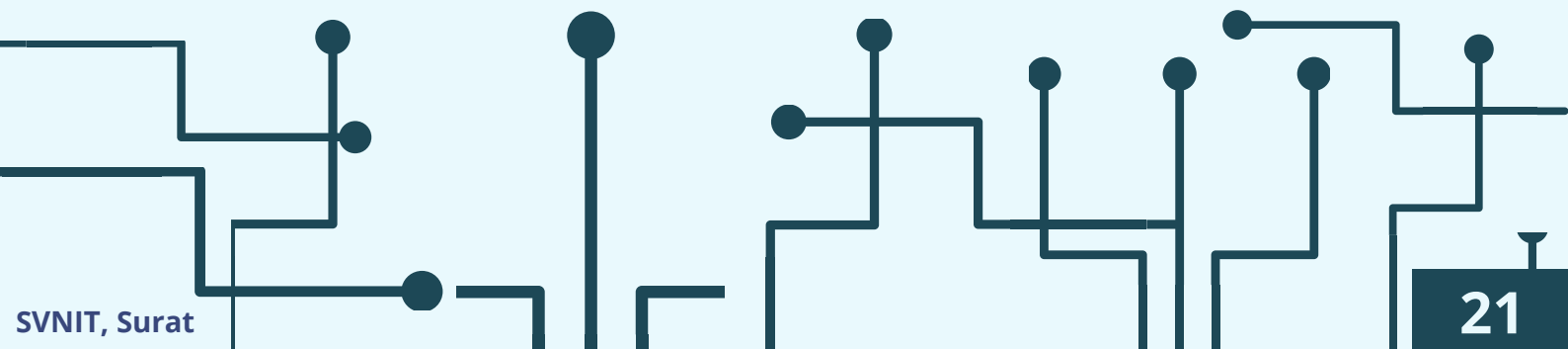


PATENTS

- Dr. Krupesh A. Chauhan, **Dr. Shweta Shah** and Mr. Jaydip Vora, "Sanitary Pad Cutting Machine", Published in GOVERNMENT OF INDIA THE PATENT OFFICE on 28/9/2021
Registration No. 345300-001.

Innovation Patent:

- **Shilpi Gupta**, Pooja Bhamre, "A distinctive method to design Null-Steered transmit beamforming through discrete polyphase coded waveforms, Patent granted by Australian Government on 15/07/2021. Registration No. 2021104157
- **Shilpi Gupta**, Mitesh Solanki, "A Method and System for Achieving a Detection Scheme having Low Computational Load using A Conjugated Gradient Based Likelihood Ascent Search (CGLAS) Signal Detection Algorithm, Patent granted by Australian Government on 03/11/2021. Registration No. 2021106228
- **Abhilash Mandloi**, Varun Shrivastava, Dhiraj Patel, Dr. Tarun Gupta, "System for polarisation shift keying signalling with wavelength diversity for free space optics, Patent granted by Australian Government on 18/11/2021. Registration No. 2021105715



EXPERT LECTURES AND TALKS DELIVERED

During this academic year, our esteemed faculties delivered a series of interesting talks and seminars at various places. The talks/lectures covered a wide range of topics that were beneficial to the attendees in the long run. Given below are the lectures/talks delivered by the faculty members:

Dr. Piyush N. Patel

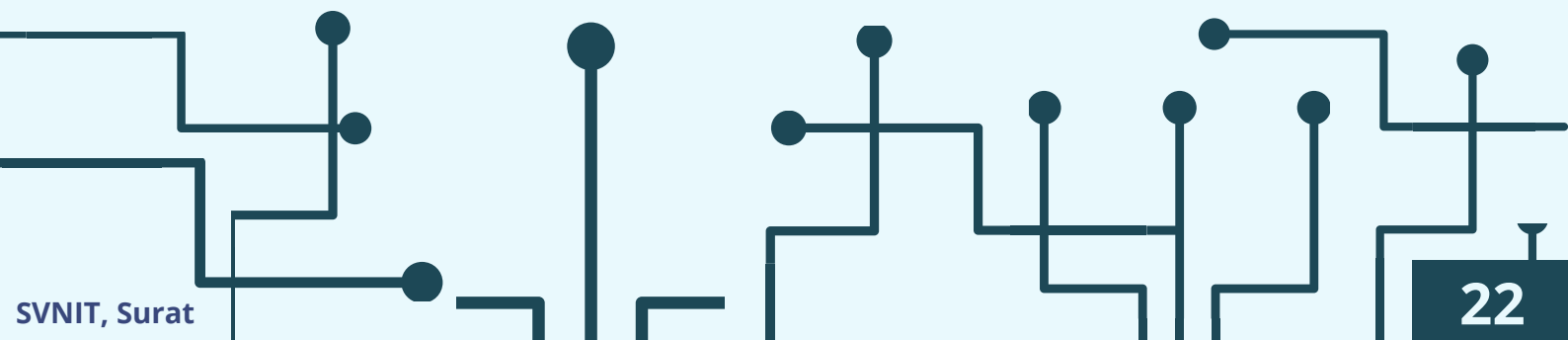
- Expert talk on **Photonics Devices & Sensors** was delivered in One Week Online AICTE-RGPV TTP on Application of Industry 4.0 and Electric Vehicle at Prestige Institute of Engineering Management and Research, Indore, 22nd June-2021

Dr. Shweta N. Shah

- Expert talk on **GNSS Error Sources, Interference and Multipath Issues** was delivered in Faculty Development Program (FDP) by AICTE Training and Learning Academy (ATAL) on "GNSS/NavIC and Applications" on 23/09/2021

Dr. Abhishek Acharya

- Expert talk on **Steep Slope Devices for Energy Efficient Design** was delivered in Technical Webinar Series on Quality Education, Accreditation and Teacher Development at Arya Institute of Engineering Technology & Management, Jaipur, Rajasthan from June 21-25, 2021.
- Expert talk on **Effective Teaching & Quality Education** was delivered at Govt. Polytechnic College Bikaner on 06/08/2021
- Expert talk on **Steep Slope Devices for IoT Applications** was delivered in AICTE- ISTE Induction / Refresher Programme at SRM Valliammai Engineering College Chennai from 6-11 December 2021



EXPERT LECTURES AND TALKS DELIVERED

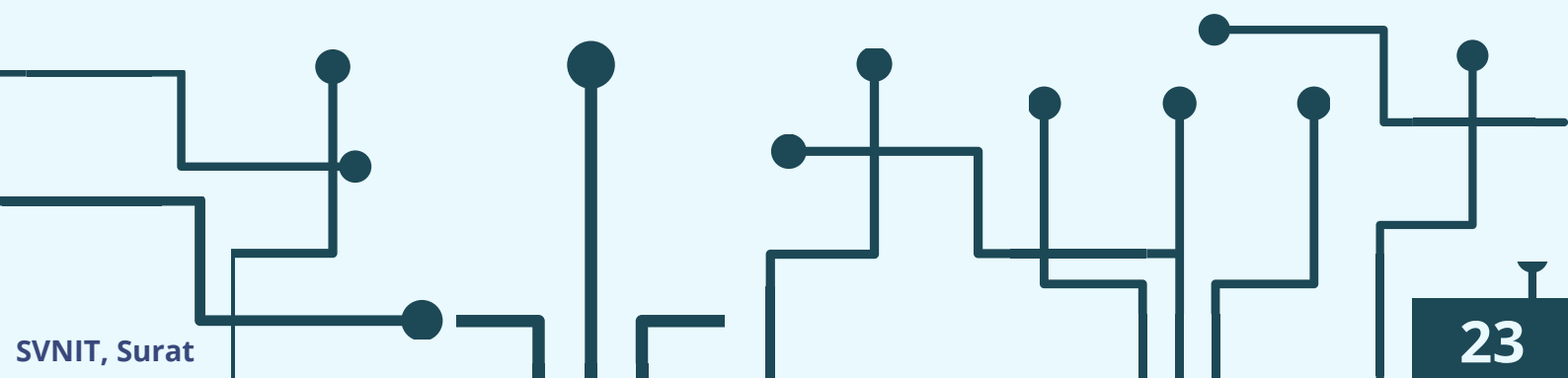
- Expert talk on Nanoscale Devices for IoT Applications was delivered in AICTE- ISTE Induction / Refresher Programme at Govt. Engineering College Bikaner from 09-14 December 2021

Dr. Kirti Inamdar

- Expert talk on **Wearable Antennas for IoT Applications** was delivered in workshop at INDUS University, Ahmedabad on 23rd August 2021.
- Expert talk on **Wearable Antennas for Medical Applications** was delivered in workshop at SCET, Surat on 27th August 2021.

BOOK/CHAPTER PUBLICATIONS

Shashidhara M and Abhishek Acharya, "2D Materials for Spin Orbital Torque MRAM: A path towards Neuromorphic Computing" in book titled Emerging Low-Power Semiconductor Devices: Applications for Future Technology Nodes. CRC Press (Accepted)



OTHER ACHIEVEMENTS

Dr. Shilpi Gupta

- WIE chair in the 25th International Symposium on VLSI Design & Test 2021 (VDAT 2021)
- A Reviewer of the thesis received from North Maharashtra University, Jalgaon

Dr. Shweta N. Shah

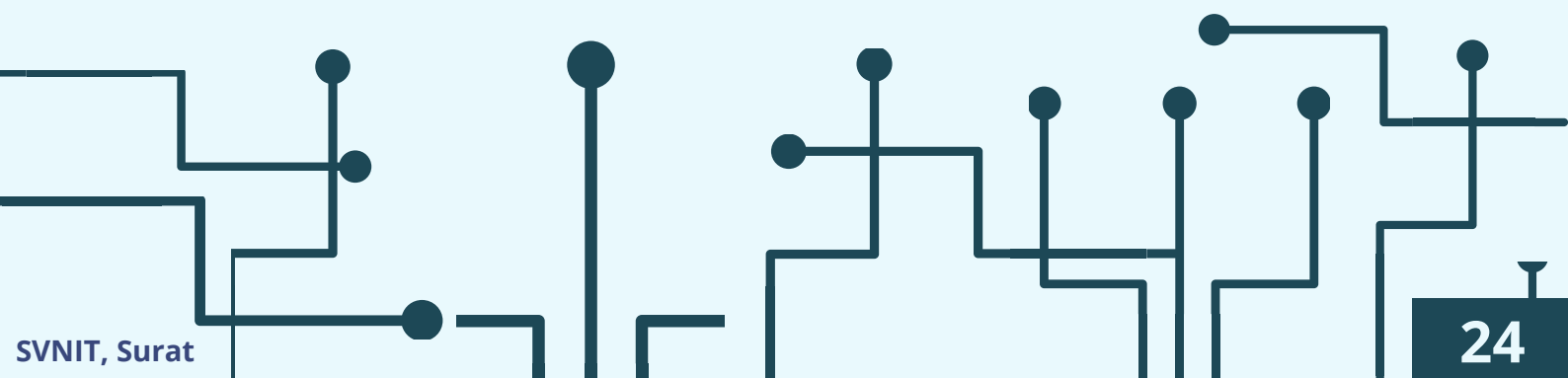
- A certificate as a primary evaluator in "Toycathon 2021" is awarded from Ministry of Innovation cell
- Nominated as Board of Studies for GNSS course by Centre for Space Science and Technology Education in Asia and the Pacific (CSSTEAP)

Dr. Abhishek Acharya

- External Member (Academics) in Industry Institute Interaction Cell, Govt. Engineering College Bikaner, 26-27 August 2021
- Technical Program Committee Chair at AICTE Sponsored International Conference on Recent Trends in Communication and Intelligent Systems (ICRTCIS)-2021 at Arya College of Engineering & IT, Jaipur, 22-23 October 2021

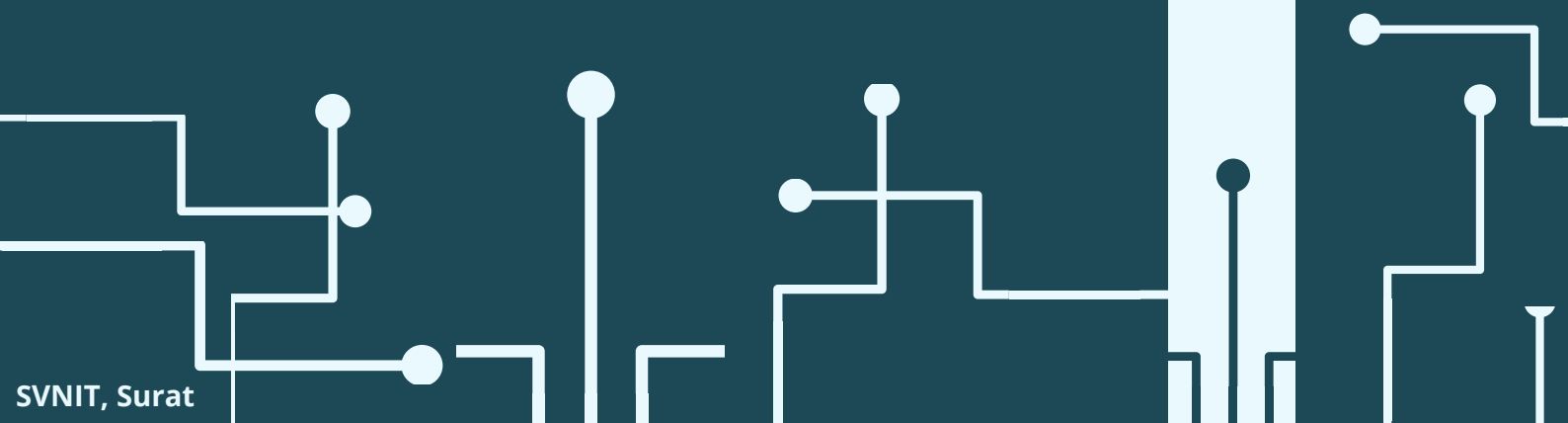
Dr. Kamal Captain

- Reviewer of IEEE Transactions on Vehicular Technology



Student Corner

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Ph.D. COMPLETION

Ph.D. THESIS AWARDED

Name: Dr. Prashant K. Shah

Roll No.: D14EC005

Title of Thesis: Two Dimensional Periodically Shift Variant Systems in Stability Context.

Completion Date: 25/01/2021

Supervisor name: Dr. (Mrs.) Upena D. Dalal, Professor, DECE ,
SVNIT, Surat

Dr. S. N. Sharma, Professor, DEE, SVNIT, Surat



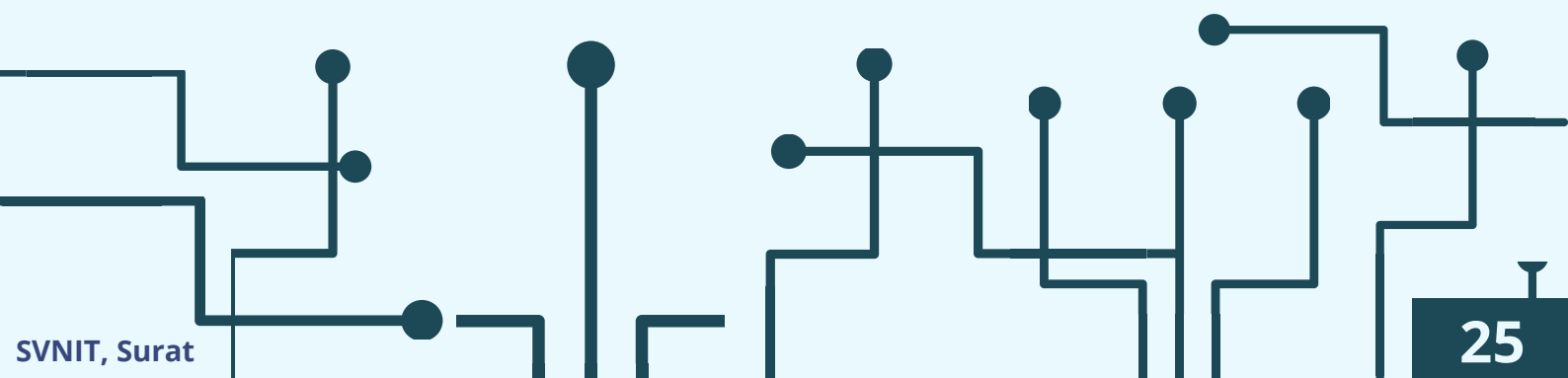
Name: Dr. Sonal Nilesh Parmar

Roll No.: D13EC001

Title of Thesis: Analyzing Impact of Ionospheric Response on "L5" and "S" Band with IRNSS Receiver at Low Latitude Station, Surat, India"

Completion Date: 14/06/2021

Supervisor name: Dr. (Mrs.) Upena D. Dalal, Professor, DECE,
SVNIT, Surat



Ph.D. COMPLETION

Ph.D. THESIS AWARDED

Name: Dr. Dhuda Hirenkumar Vikrambhai

Roll No.: D15EC005

Title of Thesis: Design, Fabrication and Testing of Circular Corrugated Waveguide Components for Fusion Plasma Diagnostics Applications

Completion Date: 10/08/2021

Supervisor name: Dr. Piyush N. Patel, Associate Professor, DECE, SVNIT, Surat

Dr. Hitesh B. Pandya, Scientist officer – G,
Institute for Plasma Research, ITER – India,
Ahmedabad – 382 424, Gujarat



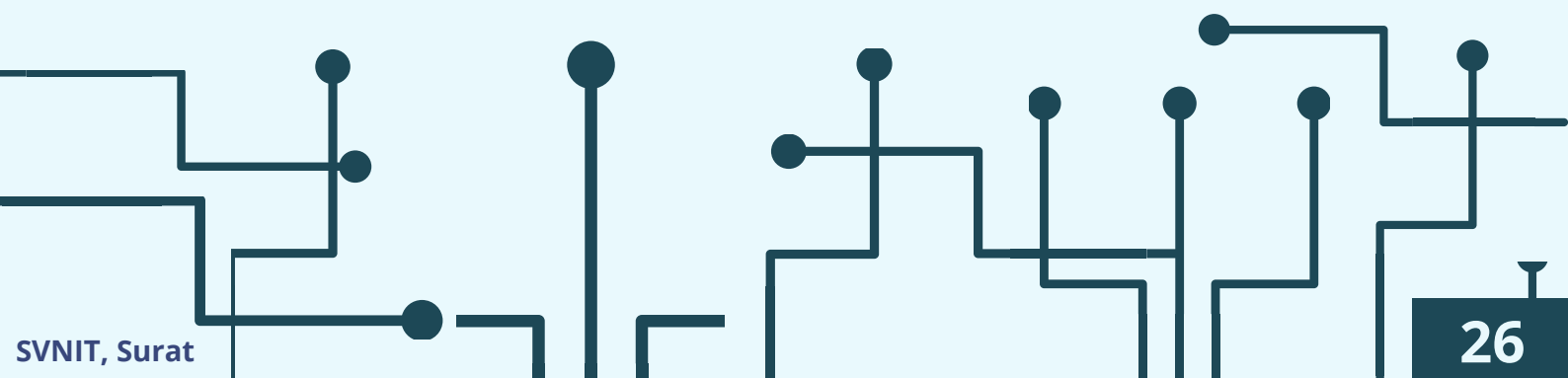
Name: Dr. Shubhangi M. Mahamuni

Roll No.: D10EC609

Title of Thesis: Spectrum Handoff Delay Minimization in Cognitive Radio Network

Completion Date: 28/09/2021

Supervisor name: Dr. (Mrs.) Upena. D. Dalal, Professor, DECE, SVNIT, Surat



STUDENT CHAPTERS : IEEE

This year IEEE SBC-SVNIT conducted 4 events under different names which included webinars and workshop. They were national level events with participation nationwide as well as speakers from reputed institutes and industry. Brief of all the events is mentioned as follows:

LECTURE SERIES OCTOBER 25-31, 2021

A Lecture Series on various advance topics of VLSI and Embedded Systems was held from October 25-31, 2021 through online mode. The objective of the series was to offer an opportunity to explore some major domains of research and product development to PG and PhD scholars.

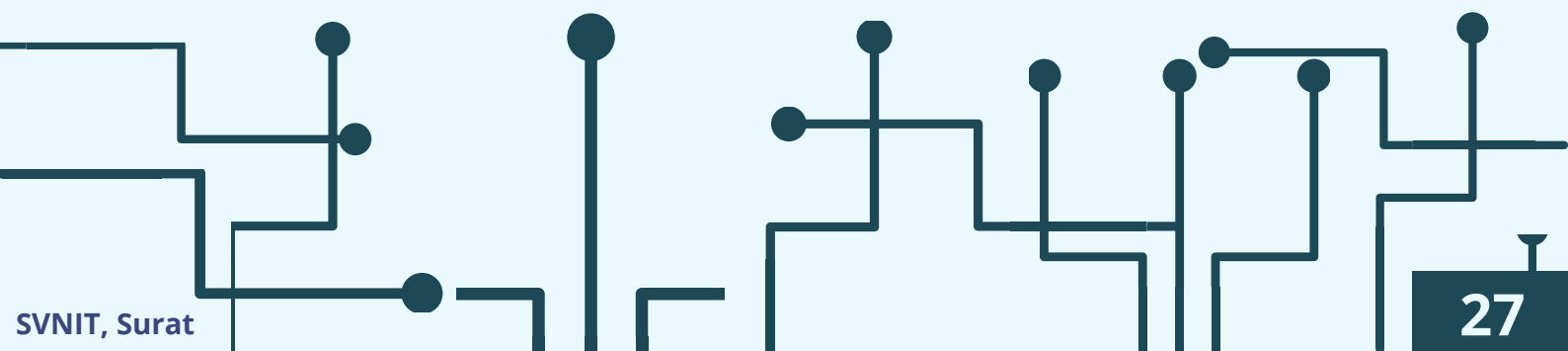
This interactive lecture series started from 25th October 2021, with a talk on 'Nano-Fiber Synthesis, Properties and Applications' by Dr. Dinesh Pathak, University of West Indies. It was followed by lectures on "Test and Security of VLSI Circuits in Nano-Technology Regime- An Introduction" by Dr. Satyadev Ahlawat of IIT-Jammu, "Approximate Computing-An Emerging Paradigm for Energy-Efficient Implementation" by Dr. Sunil Dutt of IIT-Goa, "A Journey from Algorithm to ASIC- Chip Fabrication for Spectrum Sensing in Co-operative Cognitive-Radio Wireless-Network" by Dr. Rahul Shrehtha, IIT-Mandi, "Antenna for RF Energy Harvesting Applications" by Dr. Mahima Arrawatia of IIT-Guwahati and "SoC Power Estimation and its Usage in Different Design Stages" by Mr. Rohit Singh of INTEL Technologies, on subsequent days.

Learned speakers gave theoretical as well as practical exposure of their respective topics and focused on scope of research in them. The event was well attended by more than 60 participants from all over India.

WEBINAR ON NOVEMBER 10, 2021

A webinar on "VLSI Process Integration" by Dr. Nihar R. Mohapatra of IIT-Gandhinagar was held on 10th November 2021 focusing on backend designing of any CMOS device. It helped research scholars and students to focus on device designing technology and what is the science behind any efficient design technology.

It was a 2hrs webinar attended by more than 50 participants where the target audience was post graduate and research scholars from various parts of country.



STUDENT CHAPTERS : IEEE

ANSYS WORKSHOP ON NOVEMBER 9-12, 2021

A 4-days online workshop on ANSYS for High Frequency Electromagnetics and 5G Technology from 9th -12th November, 2021 was held in online mode by ARK Infosolutions Pvt. Ltd., Bangalore.

The participants learned different computational solvers present in HFSS and gained deep insight to use appropriate solver for simulation to reduce the design cycle time. Additionally introduction to 5G trends using ANSYS was also given. Speaker Vivek A, Application Engineer of ARK Infosolutions Pvt. Ltd. detailed about FA-DDM array analysis, analysis of periodic structures, and many more such designs.

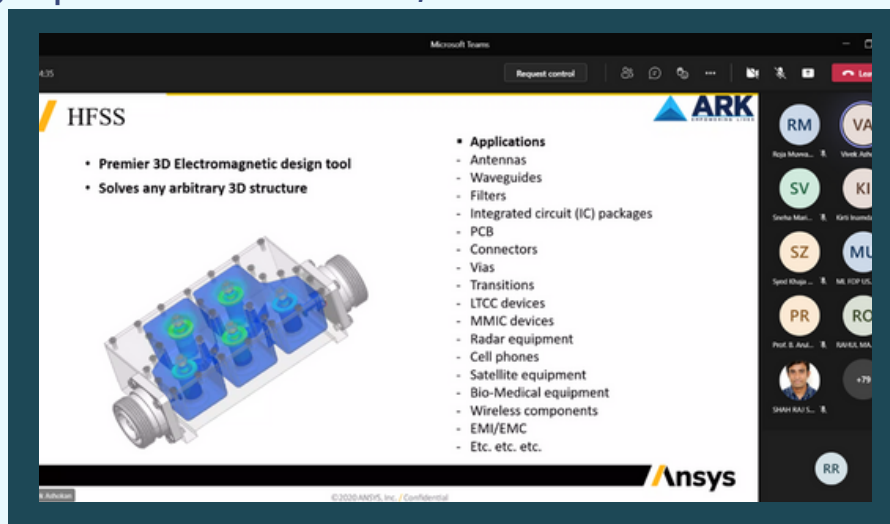
Focused audience was Engineering Students, Scholars and Industry Professionals where more than 60 people gained knowledge regarding the same.

DISTINGUISHED LECTURE ON NOVEMBER 22, 2021

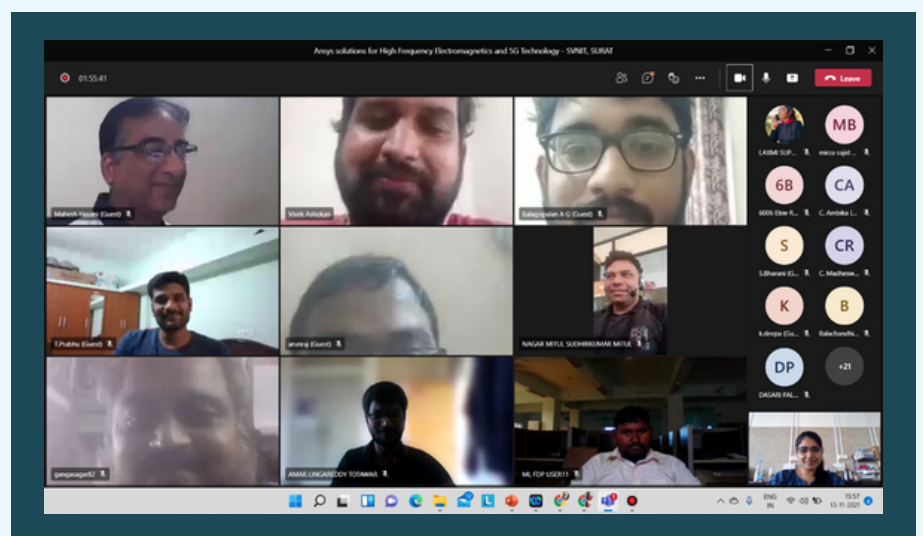
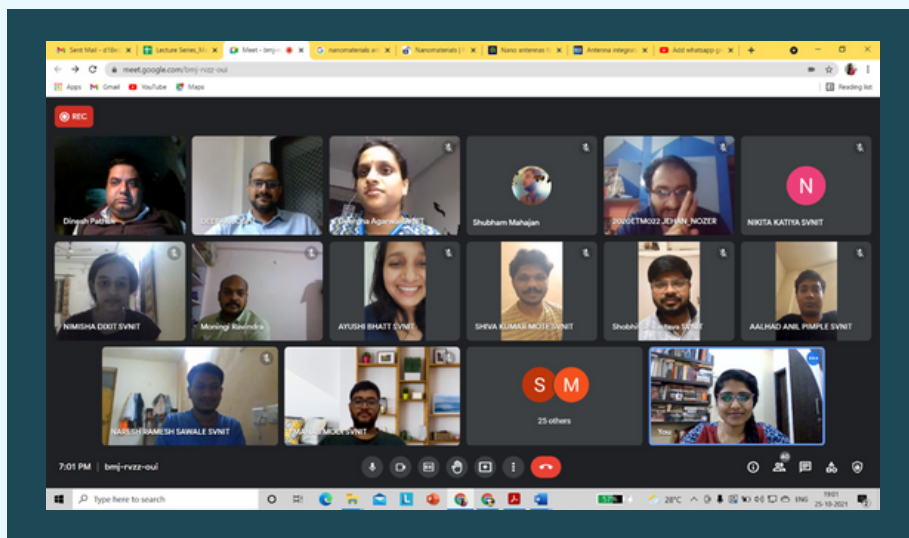
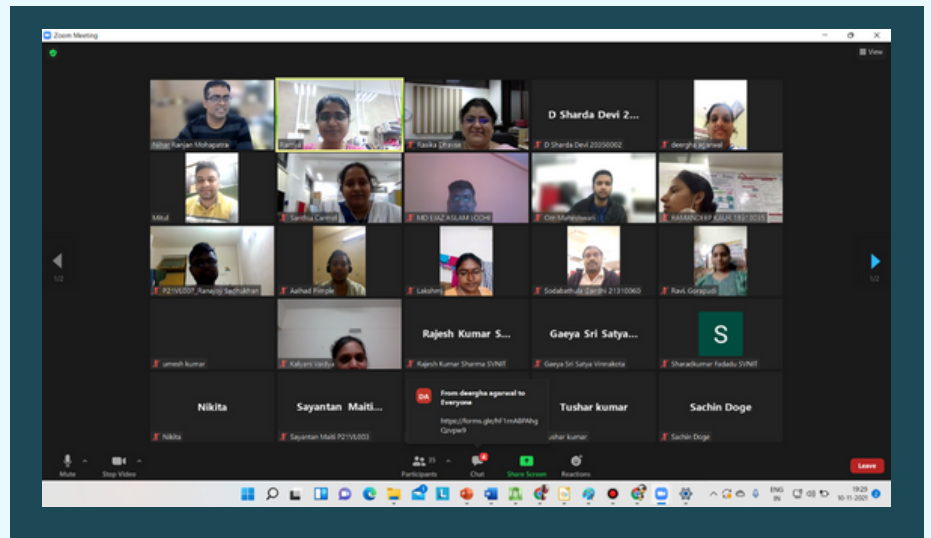
A distinguished lecture by Dr. Elena A. Rozhkova was held on November 22th, 2021 on the topic of " Nano in BRAIN Technologies", in association with IEEE NTC Gujarat Section and DAIICT, Gandhinagar.

The lecture focussed on application of nanobiotechnology in Brain Research through Innovative Neurotechnology (BRAIN) initiative, which aims to revolutionize the tools and approaches to our understanding of function, as well as solving disorders of the human brain.

Here are some glimpses from the events;



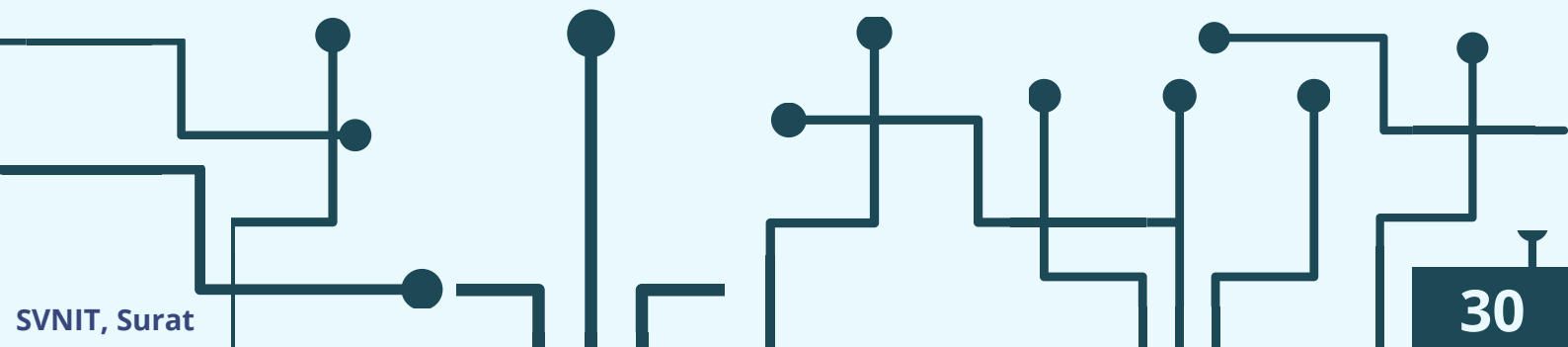
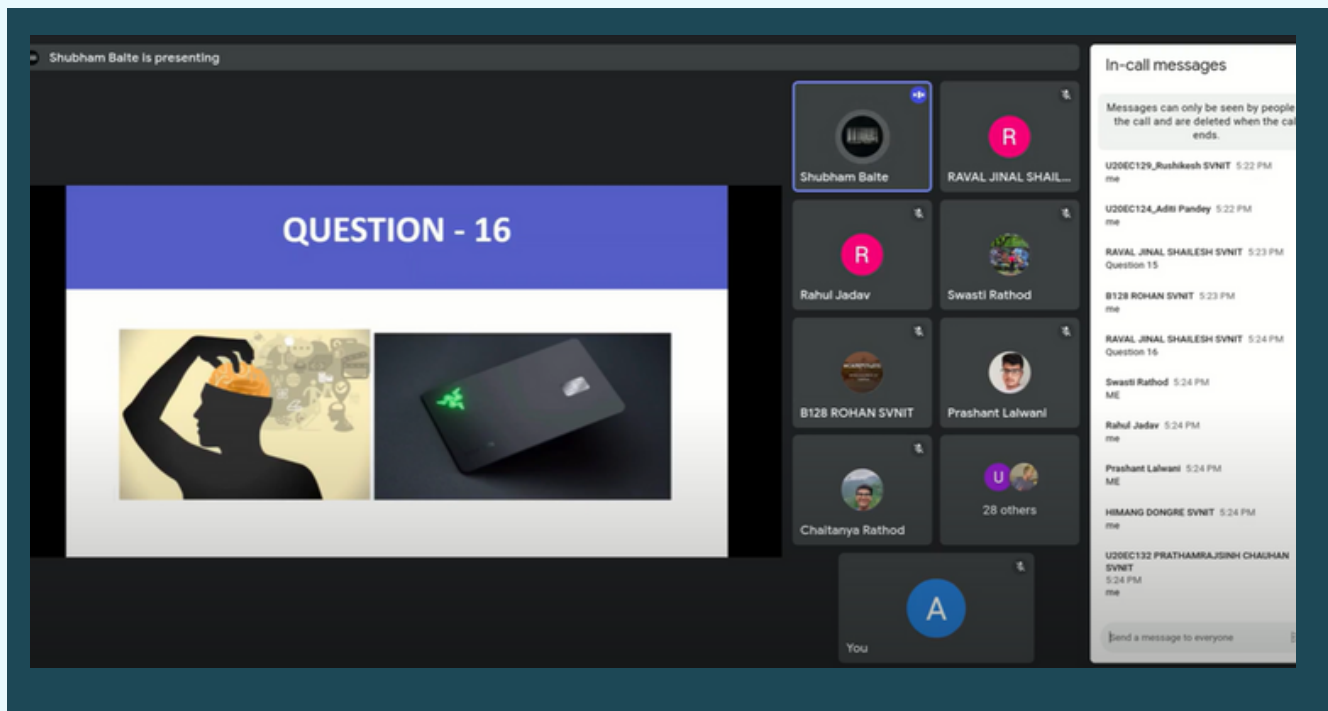
STUDENT CHAPTERS : IEEE



STUDENT CHAPTERS : IETE

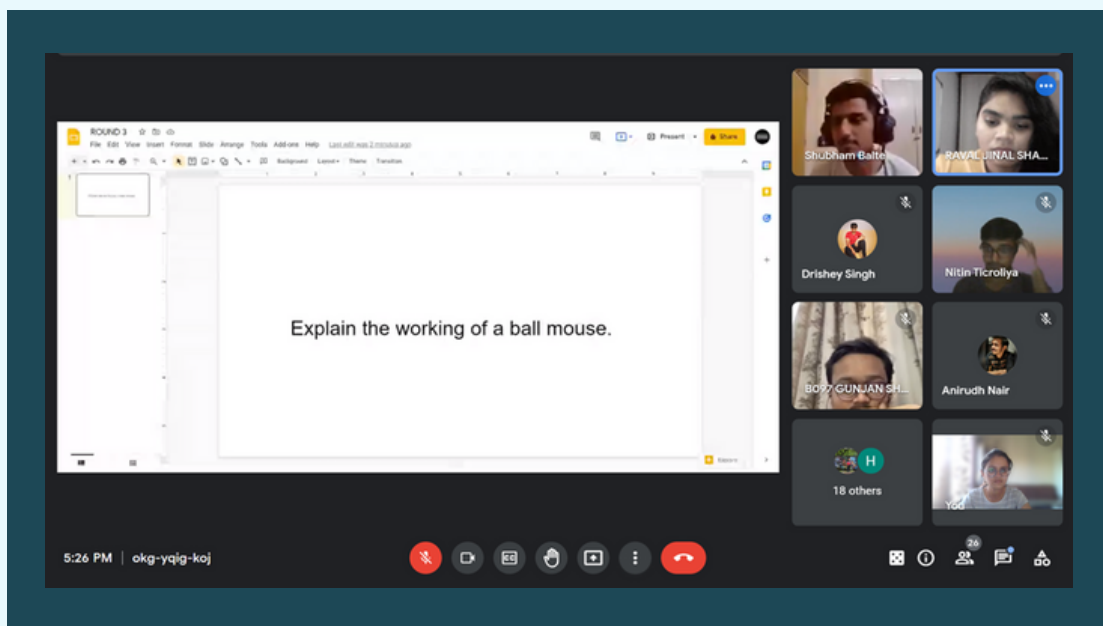
Mindscape: Not A Quiz

IETE Students Forum conducted a two-day online quiz event – Mindscape – on 23rd and 24th of October 2021 consisting of three rounds. The event was open to students of all years and branches. Participation was in teams of two. The first two rounds were conducted on 23rd October and the final round was conducted on 24th October. ROUND 1 (two MCQ quizzes based on technical and non-technical topics) was held on KAHOOT! platform.



STUDENT CHAPTERS : IETE

ROUND 2 (Visual Questions) and ROUND 3 (descriptive questions based on technical and general knowledge) were buzzer rounds conducted via Google Meet and Quinzel Chrome Extension. ROUND 3 also had a special alliance system. The goal of the event was to give students a better understanding of current technological affairs and encourage teamwork at the same time. A total of 21 teams (42 students) participated in the event and the winning teams were Team RG, Team Cheems and Team Dard-e-Disco.



ISF Core Committee members that organized the event:

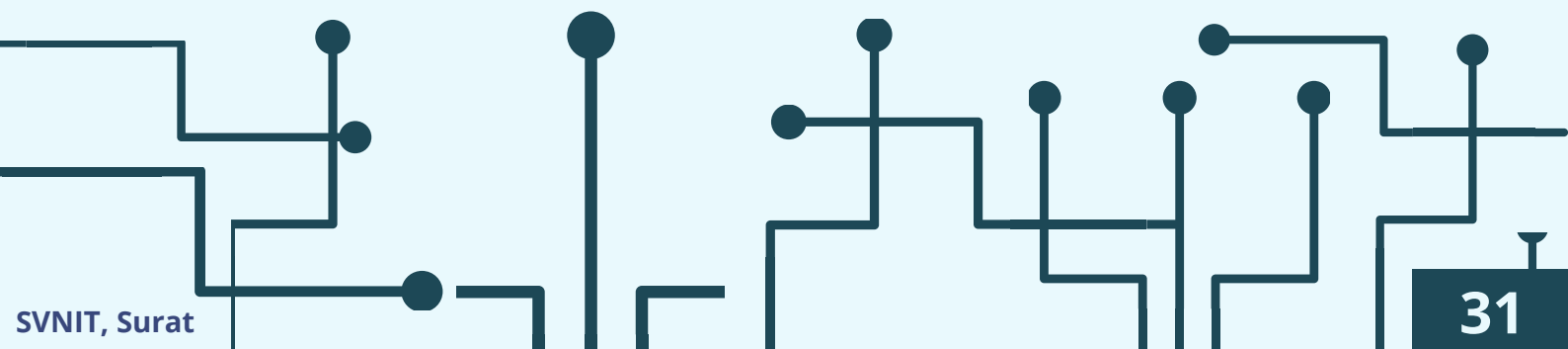
Shubham Balte - Chairperson

Nitin Ticroliya - Co-Chairperson

Jinal Raval - Secretary

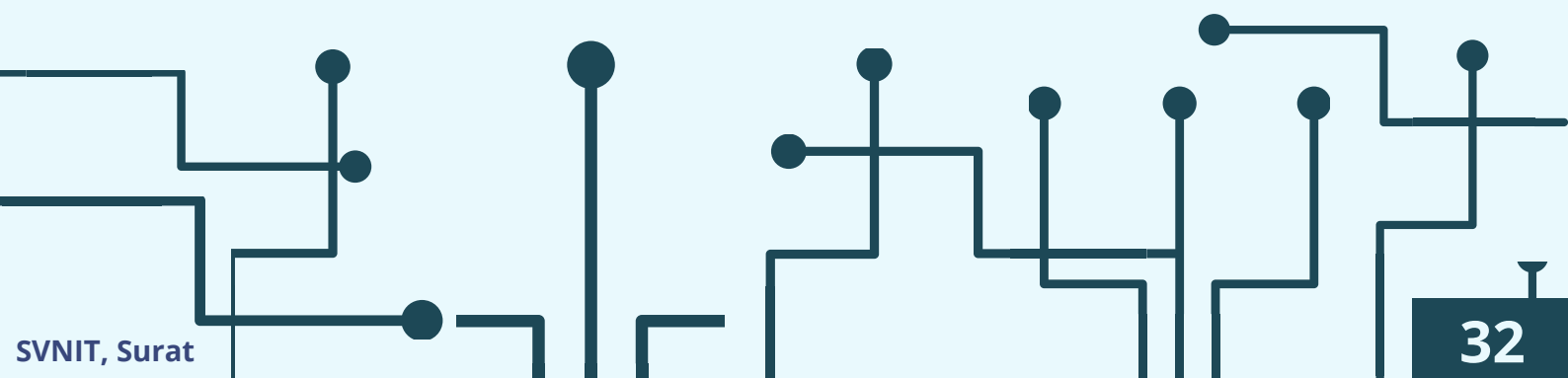
Abhishek Agrawal - Technical Head

Pahal Jain - Treasurer



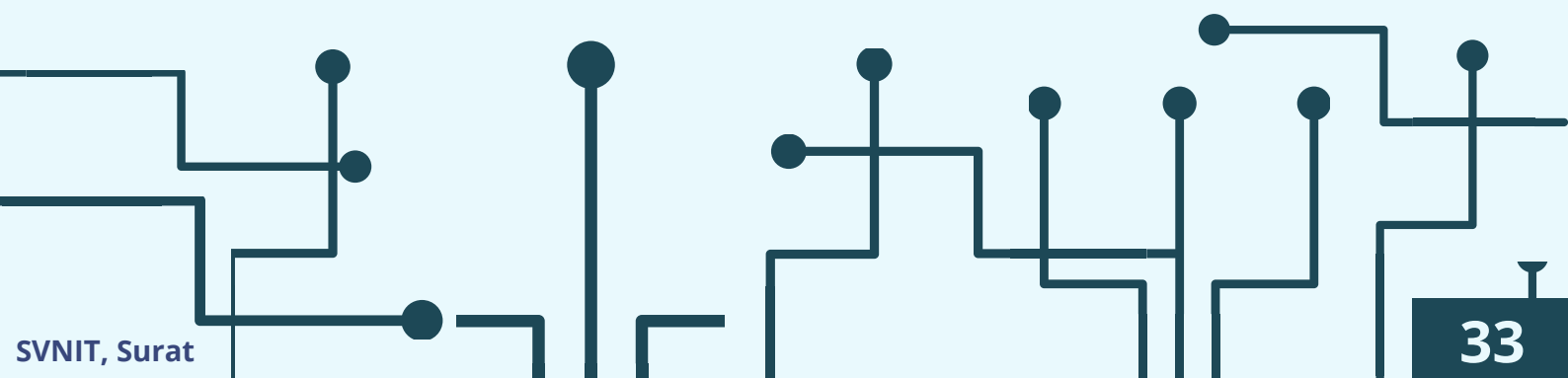
PLACEMENTS

Name	Admission number	Name of the company
Kathanki Raiyarela	U18EC021	Oracle
Jay Nileshkumar Modi	U18EC011	L&T
Dhruvkumar Patel	U18EC057	Accenture , Amdocs Wipro (PPO)
Hitesh Choudhary	U18EC031	Big basket
PATURU HARI NATH REDDY	U18EC079	Napier healthcare
Dhwaj Kothari	U18EC071	IBM
Bhavya Shah	U18EC027	JP Morgan & Chase
Sunil Deora	U18EC120	Amdocs India
Nitesh pal	U18EC116	Deloitte
Harsh Sanghai	U18EC107	Mathworks
Pranjal Mandalia	U18EC093	Airtel
YELIMELA SAI TEJA	U18EC101	Optum
SACHDEVA HARIPRIYA	U18EC128	Searce Technology
Abinav	U18EC072	OPTUM
Vipravardhan reddy	U18EC087	Big basket
Manan Chopra	U18EC054	Brane Enterprises
Daaman Pansari	U18EC122	Effiya technology
Raj Modi	U18EC106	Deloitte
Haridasu Renuka Sri	U18EC129	JPMC
Chetan Karwa	U18EC133	Deutsche Bank
MOLAKA DEEPAK RAJ	U18EC049	Wipro
Reddy Swarna Sri Rajeswari	U18EC135	Johndeere
Rohan Ajeeth	U17EC015	Oman Cement Company



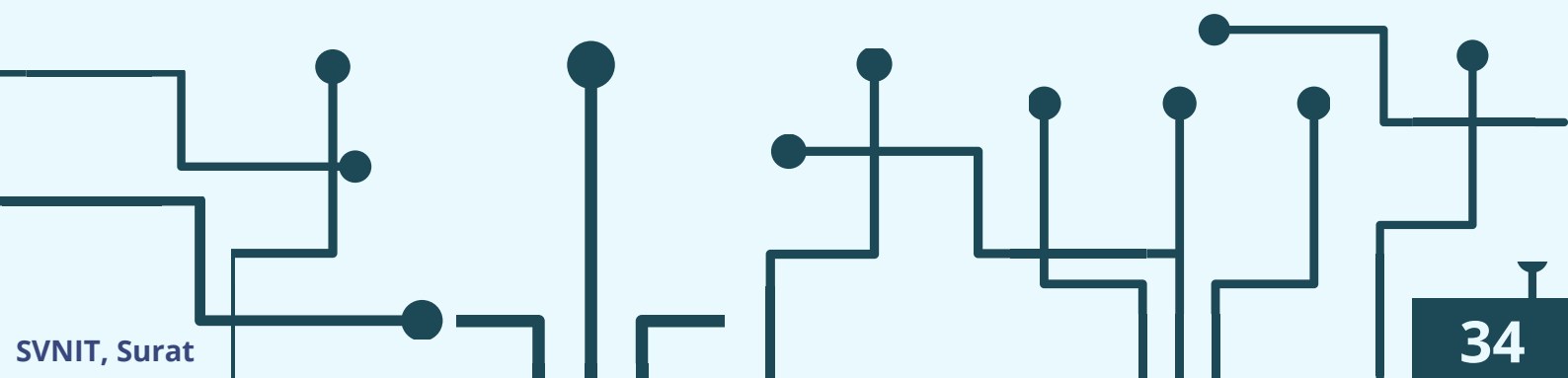
INTERNSHIPS

Name	Admission number	Name of the company
Harsh Luhar	U19EC144	Accenture
Aashish Chachan	U19EC112	Mastercard
Kandula Venkata Krishna Vardhan	U19EC095	Decimal Point Analytics - SDE Intern
Rutvij Vamja	U19EC088	Software development Internship - Mastercard
Gaeya Sri Satya Vinnakota	U19EC054	Texas Instruments
Pooja Paliwal	U19EC063	MASTERCARD
Sanjit Anand	U19EC008	Wells Fargo
Sarthak Pandey	U19EC072	G E Healthcare
Aatman Pradhan	U19EC038	Accenture
Abhishek Agarwal	U19EC139	Decimal points analytics
Prashant Dodiya	U19EC026	GE Healthcare Internship
Neel Anilbhai Thakker	U19EC033	JPMC
Aradhana Sridhar	U19EC062	SFR Medical, UK



FURTHER STUDIES

Name	Admission No	Higher Studies College
Ashish Yadav	U17EC097	Dartmouth
Fenil Desai	U17EC056	Worcester Polytechnic Institute
Aniket satkar	U17EC051	Iim indore
Bhattacharya Swastik Bimal	U17EC035	University of Colorado Boulder
Janhvi Mandali	U17EC002	University of Texas at Dallas
Raghav Bansal	U17EC 081	University of Southern California
Dhruvil Parikh	U17EC153	Northeastern University
Vivek Adajania	U17EC055	University of Toronto
Aashish Rai	U17EC124	CMU, State University of New York at Buffalo, University of Maryland College Park, McGill, University of Leeds
Sonawane Nikhil Ramchandra	U17EC063	IIM Bangalore
Shivam Lalakiya	U17EC057	Northeastern University, Boston
Kashyap Patel	U17EC154	University of Toronto
Radhika	U17EC085	University of California, San Diego
antriksh ganjoo	U17EC134	University of California, Irvine
Smeet Dhakecha	U17EC144	University of Southern California
ojas ramwala	U17EC129	NYU



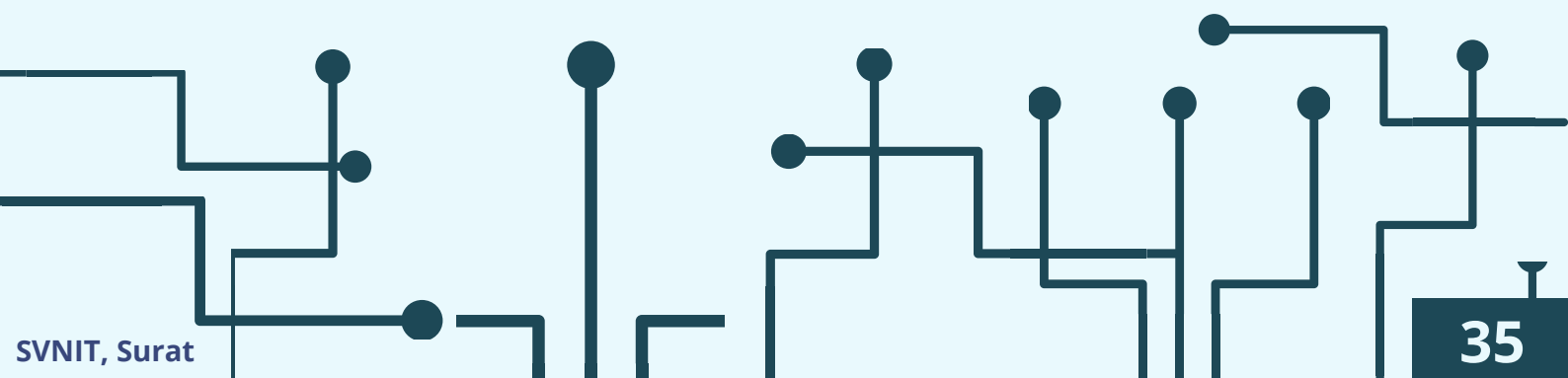
ALUMNI INTERVIEW

Alumni aid students and the institution as a whole in a variety of ways. For the next generation, their expertise and experience are priceless. Their smart and powerful words have the power to alter lives. Commodore Rajesh Debnath is here to share his fantastic experiences with us this time.

Commodore Rajesh Debnath (SVNIT EC-1991 Batch) joined the Electrical Branch of the Indian Navy in Aug 91, through the University Entry Scheme (UES). He is a Post Graduate in Electronics and Telecommunications Engineering (Naval Weapons) from College of Engineering, Pune (2000), and holds a Diploma in Business Studies from JBIMS, Mumbai (2005), as well as Certification in "Leading Business Transformation in the Age of Artificial Intelligence", from ISB, Hyderabad (Dec 2020). In the Navy, he has qualified the highly specialised Missile Maintenance Course (MMC) in 1995, the Advanced Naval Weapon Systems Engineering Course (ANWSEC) from Defence Institute of Advanced Technology (DIAT), Pune, in 1999, and has been an Instructor for the MMC during 2001-03. He has published & presented Papers on EMI / EMC, Quality Management and Higher Technical Education in India amongst other subjects, some of which are listed at Enclosure.



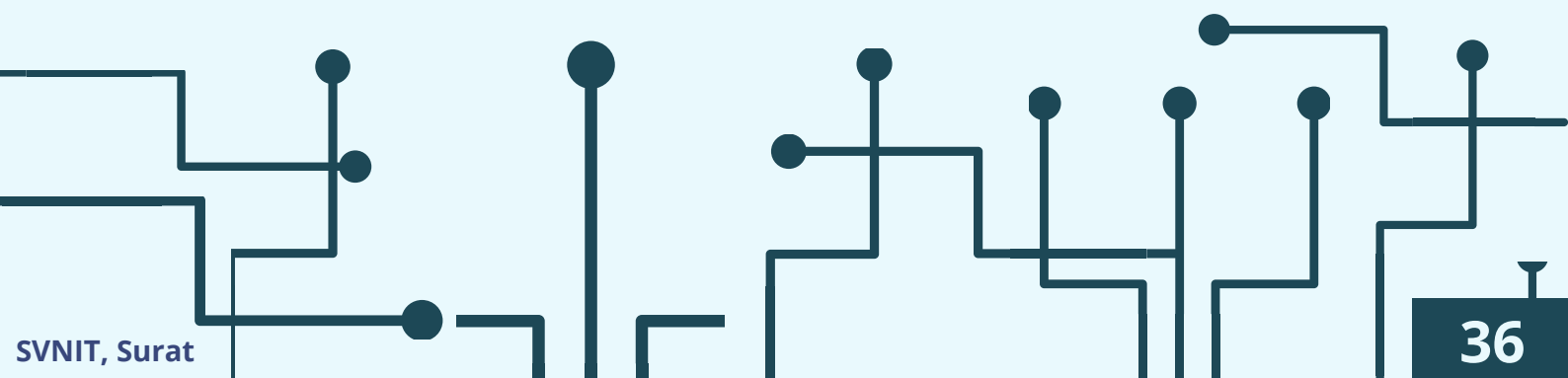
During his three-decade long active Service, he has served in frontline Units, as well as key Shore Establishments of the Navy on both East and West coasts. He has been part of Op Vijay (1999) and Op Parakram (2001-02), and anti-piracy operations in the Gulf of Aden (2010). He has been associated with induction and life cycle management of several weapon / armament projects of different origins during the period 2005 - 18. He has headed the Navy's Trials & Modifications Authority on PGD and Electronics & Communication Equipment (ECE), with pan-India responsibility (2013-14) and a key Technical Directorate at Naval Headquarters (2018). He has also commanded a premier Technical Base on the Eastern coast (2019-20). He is currently posted as Director in a Technical Programme under the Ministry of Defence, Dept of Defence (R&D), at New Delhi.



ALUMNI INTERVIEW

Commodore Debnath lists swimming, running (half marathons), golf, travelling, music and reading as his principal “likes”. He has been member of the Navy’s combat shooting team at the Inter-Services level in the 1990s, and continues to hone his targetting skills, whenever possible. His current professional interests include Autonomy in Weapon Systems, specific applications of Artificial Intelligence in his field of specialisation and issues related to collaboration in niche technology areas between civilian and military sectors.

SI	Title	Remarks
1	Design of futuristic electromagnetic conflict (EC) systems using soft systems modelling-system dynamics (SSM-SD) methodology.	Presented at the “International Conference on Electromagnetic Interference and Compatibility 1999 New Delhi, 06-08 Dec, [INCEMIC] 1999” Published in the Proceedings (Reference ISBN:81-900652-0-3, IEEE catalogue no.
2	A Soft Systems Methodology – Systems Dynamics (SSM-SD) Based Approach to Re-Engineering EMI / EMC Regulations and Standards.	A Soft Systems Methodology – Systems Dynamics (SSM-SD) Based Approach to Re-Engineering EMI / EMC Regulations and Standards.
3	Soft Systems Methodology – System Dynamics Approach to Total Quality Management .	Presented at the National Conference on Quality Engineering on Aerospace Technologies, (QUEST 99), held at CEMILAC (DRDO) Bangalore, 20-21 Aug 99. Published in the Proceedings
4	A Soft Systems Approach to Restructuring Higher Technical Education in India.	Presented at the 5 th International Conference on Cognitive Systems (ICCS 99), New Delhi, 15-18 Dec 99. Published in the Proceedings
5	A Systems Dynamics Approach to Quality Planning and Management in Shipbuilding industry incorporating Soft Systems Methodology perspective.	Presented at the International Maritime Conference, [INMEX 99], 07-08 Oct 99, Goa. Published in the Proceedings
6	Coping with Cupid: A Soft Systems Approach.	Published in the Journal of Defence Management, Vol. 26, No. 2, Nov 1999 – Apr 2000
7	A System Dynamics Approach to Quality Management in the Naval Scenario Incorporating the Soft Systems Methodology Perspective.	Published in the Journal of Marine Engineering, Vol. 39 No. 1, June 1999.



ALUMNI INTERVIEW

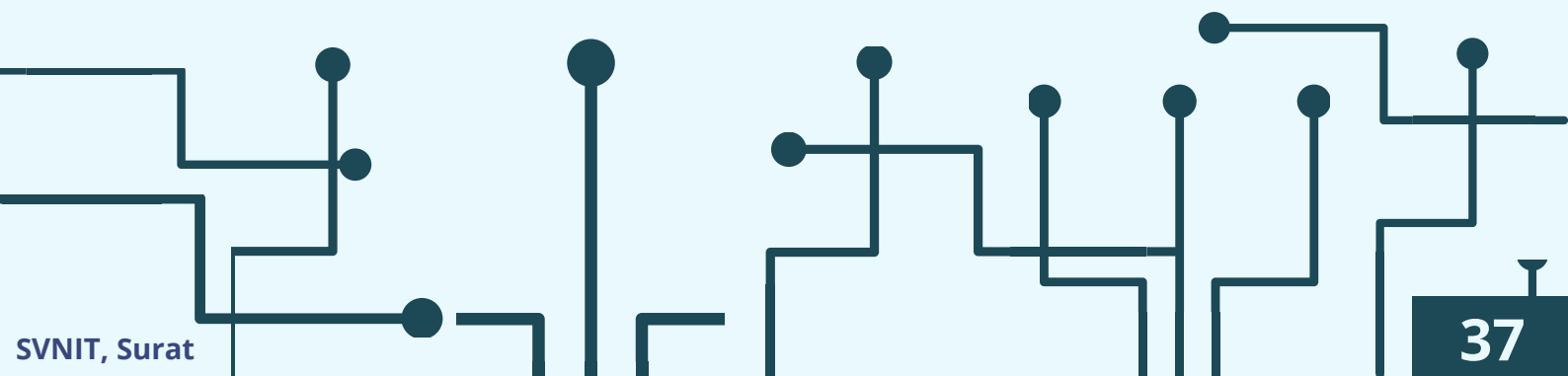
1. What are the things you fondly remember about our Department ?

I joined SVNIT (then SV REC Surat) for my First Year in 1987. What I remember clearly about the Electronics Dept is the easy accessibility to every member of the Faculty (including the HoD), and informality of our interactions. It was a compact Department, and the Faculty knew each student by name, especially in the Third and Fourth Years. It established the environment for free and frank technical discussions, guidance and career counselling. It was also a great support, when I lost my father suddenly in my second Semester. I was just 17 years old then, and being from outstation, was required to be at home very frequently to set things in order, for most of my Second Year. The Faculty of the Electronics Engg Dept, and of course, my batchmates in class as well as the Hostel, went out of their way to help, so that I could stabilise and catch up with the classes / sessions that I had missed.

The other thing which I fondly remember is the Hostel life, and close interaction with my batchmates from other States, as well as the Day Scholars. I firmly believe that this has helped me evolve into a more balanced person. Understanding unique aspects of various States of our great country, their traditions and food habits, typical phrases in various languages used in daily life (which can be used as effective ice-breakers) etc., was a completely out-of-syllabus experience. This has helped immensely in my three decade long career with the Indian Navy, wherein I have been posted to various parts of the country, and have had to interact at all levels with people from all walks of life.

2. What technology you think as the future of Electronics Engineering?

I wonder whether we can compartmentalize any engineering discipline nowadays, like earlier. In those days, the differentiating lines between engineering disciplines were reasonably clear. During my time at SVNIT, I worked principally on the 8085 microprocessor, and by the time I graduated, the 80386 was becoming the standard processor. On the software side, one could get by with FORTRAN, though familiarity with C++ / Visual Basic was essential to be current. I got my first taste of blurring of these lines, and exposed to what is known as Systems Engineering, in my Third Year – when doing



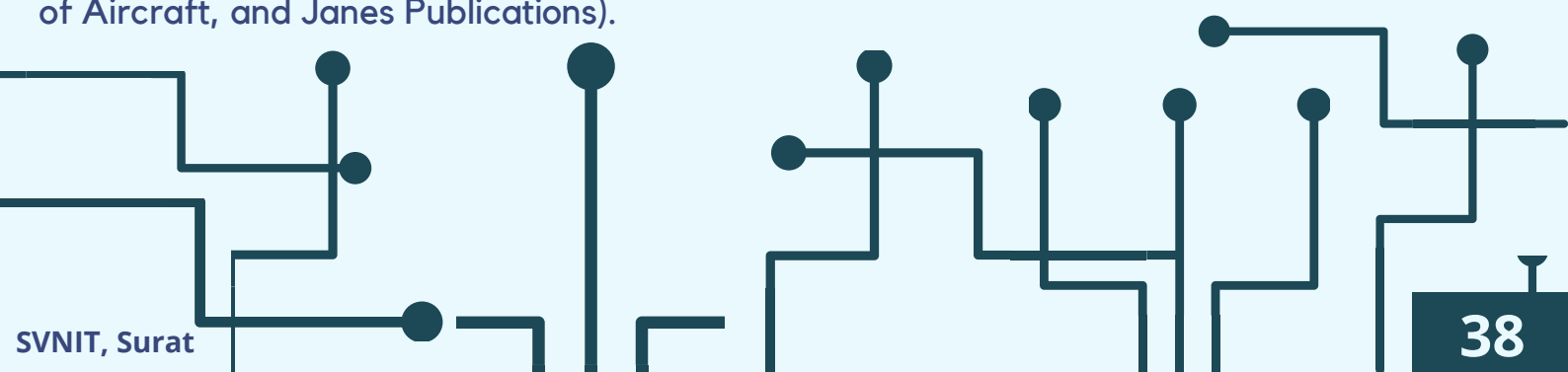
ALUMNI INTERVIEW

literature survey on Automotive Electronics. Today, electronics, and indeed computers, are commonplace in almost all vehicles. And so is the case with most other products, technologies and systems. Aircraft are fly-by-wire (indeed drone technologies may soon render pilots redundant), Driverless vehicles should be in our midst soon, we are going to have the 5G standard for broadband cellular networks, IOT etc., all of which I am sure the present generation of students are familiar with.

What is important is that the Electronics engineers of tomorrow pursue application of new and cutting-edge technologies towards solving real-world problems and issues. Cross-application of these technologies, with focus on improvement of quality of human and other forms of life (including for the more challenged amongst us) is equally important. Electronics engineering provides the essential foundation for implementation of automation, and eventually autonomy, in a number of specialisations such as Communication, Medicine / Healthcare, Security (including cybersecurity), Systems Engineering, Artificial Intelligence, Data Acquisition and Management etc., and other enabling technologies, through miniaturisation, enhancement of processing speeds and data storage capacity, all with reducing cost. In the military sphere, there is ever increasing presence of electronics and embedded software at the heart of contemporary weapons, systems and sensors. But one of the major challenges is the production of semiconductors and hardware at affordable costs, and concurrent optimisation of volume and complexity of the related software. Last, but not the least, is the issue of safe disposal of obsolete hardware, PCBs and other environmentally toxic components, and recycling of the same to the maximum extent feasible. So, in my opinion, the Electronics engineers of the future will also have to be womb-to-tomb conceptualisers / designers and system thinkers.

3. What would be your current position, if you weren't an Electronics Engineer?

I would probably have been an aviator, or engaged in some field related to aviation, as I have been fascinated by aeroplanes and rockets ever since I was a kid. I have done aeromodelling and flying these models in school as part of my NCC activities, and used to be a voracious reader of publications related to technical aspects, specifications and capabilities of missiles and aircraft, in the pre-internet days (such as in the Observer's Book of Aircraft, and Janes Publications).



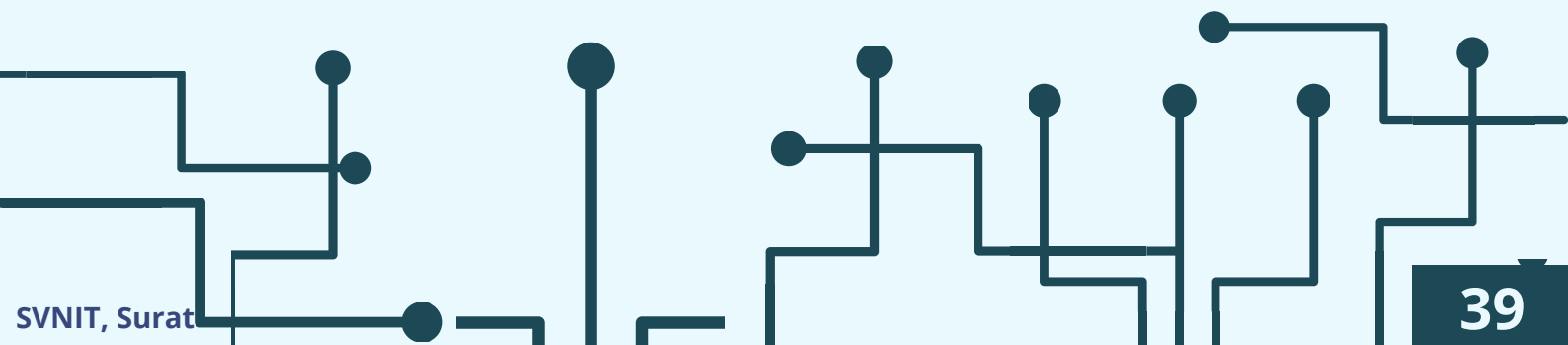
ALUMNI INTERVIEW

4. Which life skills help us make it big in the real world ?

I feel that the most important life skill is to be able to see the Big Picture and interconnect seemingly disparate dots. We should be aware that each and every action of ours, in all probability, has consequences for something else (a variation of the "Butterfly Effect"). The second most important skill is appreciating the value of time. Everybody's time is important, and tailoring our interactions (whether online or otherwise) keeping this in mind, will certainly result in positive outcomes. This will also make one a good communicator, with the ability to convey thoughts, ideas and action plans succinctly. Then comes an insatiable thirst for knowledge (curiosity) and being open to new ideas, even those not directly related to one's core profession. Thus, one must develop the ability to recognise the potential for cross-application of knowledge, technologies and skillsets to other disciplines. As analogy from the field of communications, I would say that one's specialisation is the Carrier wave, on which the exposure to other fields and disciplines need to be superimposed as modulating signals, for intelligible and useful breakthrough ideas and products.

Based on my experience till date, I would also consider the following as desirable life skills:-

- Appetite for taking risks and go off the beaten track, not being afraid of failure.
- Provide leadership by example, instead of preaching.
- Integrity, honesty of purpose and transparency. Beyond a certain level, your reputation in the field or industry precedes you, and hence it is worthwhile investing in them.
- Recognition of the greater good, and willingness to sacrifice individual benefit (however lucrative) for the same.
- Pride in our identity as Indians. Acknowledgement of what the country is investing in us (in the form of extremely affordable education, healthcare, security and peace) and corresponding duties and responsibilities of every citizen.
- Practical thinking and recognition of ground realities, such as our demography and the need to provide meaningful employment to our burgeoning younger population, if required, at the cost of automation and high-end technology.
- Attention to health and physical / mental fitness, and maintaining a decent work-life balance.

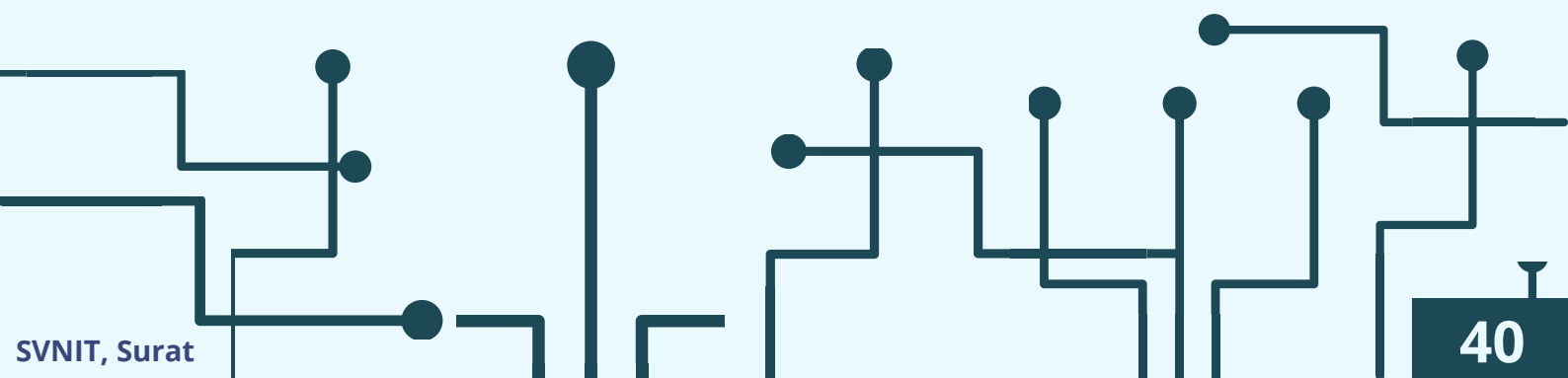


ALUMNI INTERVIEW

-Team Building and Management skills, understanding the motivation and aspirations of each team member, and making genuine effort to address them (what is important is honesty of effort, outcome may or may not be in our hands). No one can work and deliver results alone, in the real world.

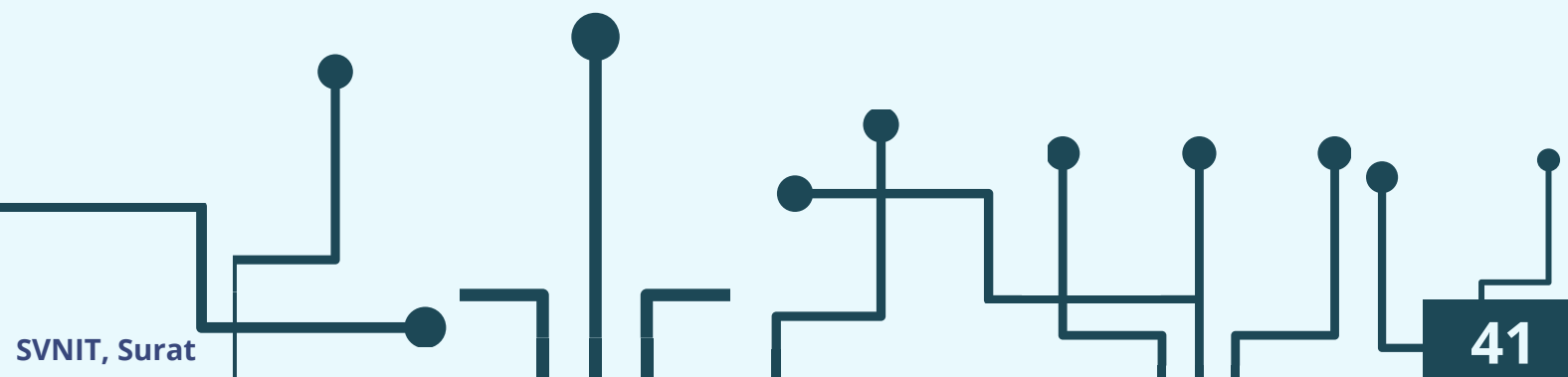
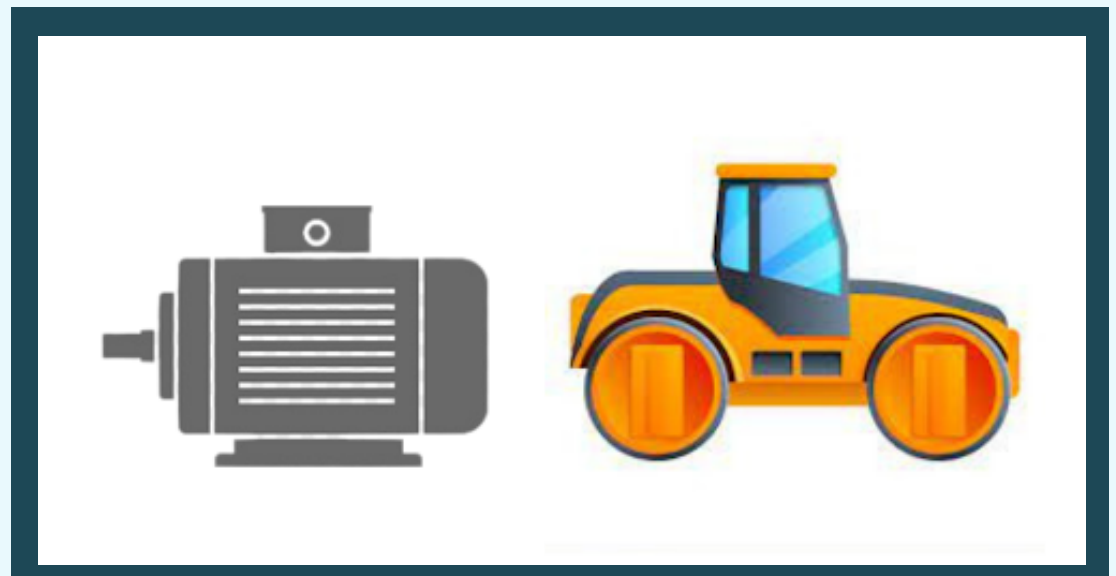
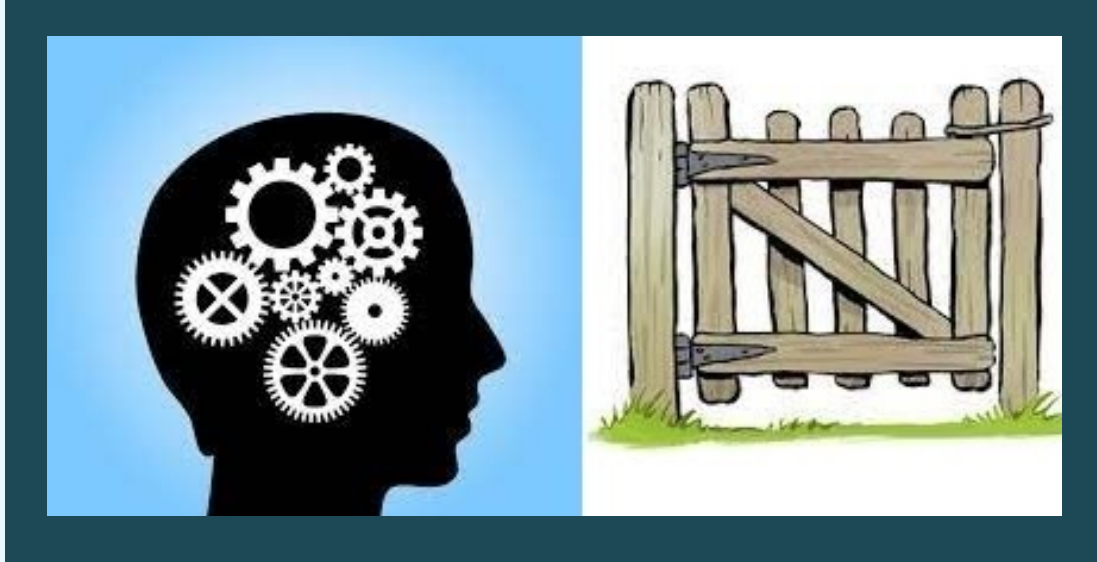
5. If you were now in your First year of College, what are the things you would like to explore ?

Specifically, music and the field of sound / acoustics, maybe sound engineering. I am fascinated by the hardware and engineering aspects (and the algorithms used) in the huge consoles used by studios nowadays to create, modify and synthesise music. We used to have a great set of musicians and singers amongst us, during our student days, who took the time and effort to hone this hobby, despite the pressure of academics. There used to be the Annual Fest called Dhamaal, which provided a platform for quite a few budding singers and musicians, and for the rest like us, a time for fun and informality, away from the academic rigours. It is a realisation one has, as one goes through the cycle of life, job, career, family etc., that music can be both relaxing and stimulating. If I could have the opportunity, I would love to explore and learn about music.

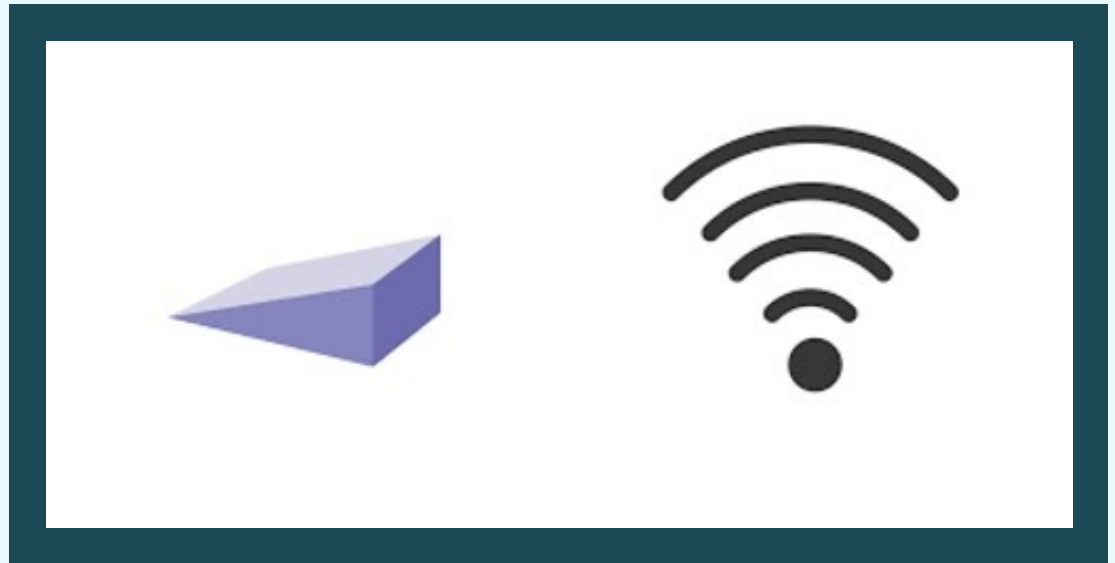


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Identify the following words with the help of the pictures



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Answers:
1. Logic Gate 2. Motorola 3. Pie Filter 4. Ramp Signal

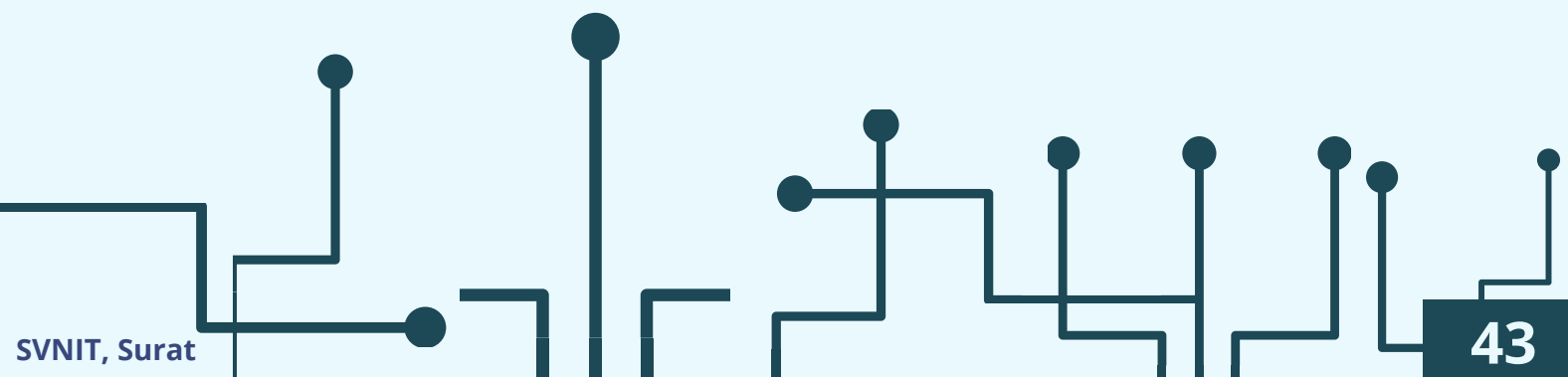
CREATIVE CORNER

Emerging Technology of E- Textiles

The heart of today's emerging e-textile business is its electric and electronic functionality from sensing to light emission, achieved entirely by use of e-fibers. Components and linkages that are built into the fabric, or are widely distributed across it, are less apparent and less likely to become tangled or snagged by the environment. E-textiles can be worn in daily contexts where wearable electronics are currently unavailable.



Sensors, such as environmental sensors, antennas, global positioning system receivers, sound sensors, and cameras, are frequently used to acquire information for wearable devices. Active and passive sensors are two types of sensors. A user controls active inputs via a tactile or aural feedback system, resulting in a natural engagement with the garment. Passive inputs acquire biometric and environmental data from the human body via a wireless transmission device.



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Construction of E-Textiles:

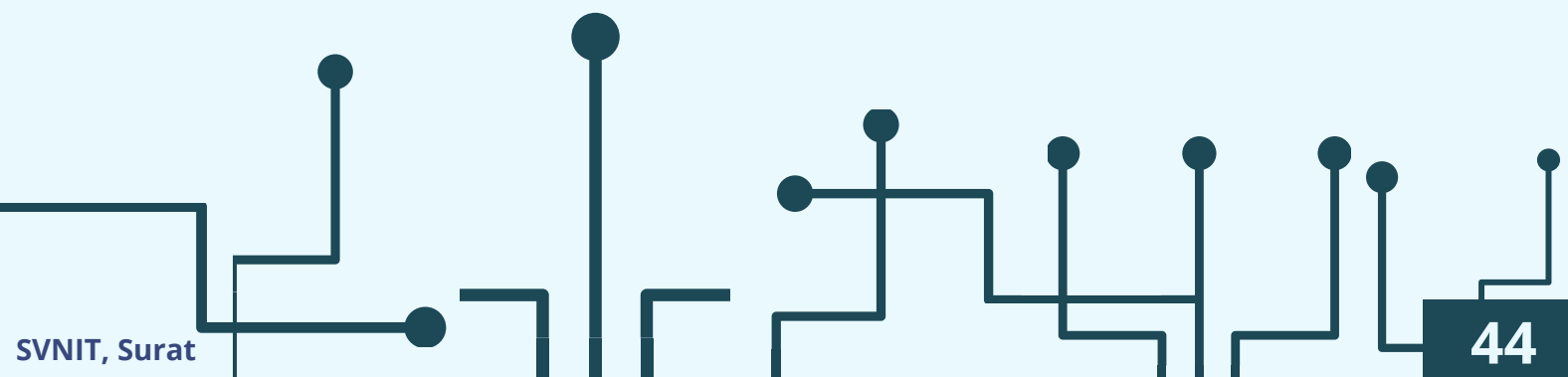
Conductive fabrics and textiles are plated or woven with metallic elements such as silver, nickel, tin, copper, and aluminum; these are: electro-nylon, electro-nylon nickel, clear-mesh, etc. All these textiles show amazing electrical properties, with low surface resistance, which can be used for making flexible and soft electrical circuits within garments or other products. They are lightweight, flexible, durable and can be sewn like traditional textiles, which makes them a great replacement for wires in computational garments.

Conductive threads and yarns have a similar purpose to wires and that is to create conductive paths from one point to another. However, unlike wires they are flexible and can be sewn, woven or embroidered onto textile. Conductive threads and yarns offer alternative ways of connecting electronics on soft and flexible textile mediums.

Conductive coatings are used to convert traditional textiles into electrically conductive materials. The coatings can be applied to different types of traditional fibers, yarns and fabrics, without changing their flexibility, density and handling.

Conductive ink is an ink that conducts electricity, providing new ways of printing or drawing circuits. Conductive inks contain powdered metals such as carbon, copper or silver mixed with traditional inks.

Some of the compelling properties of e-textile are: its flexibility, no wires snagging the environment, Large surface area for sensing, Invisible to others, Cheap manufacturing, Permeability, Strength, Thermal Resistance, Electrical resistance.



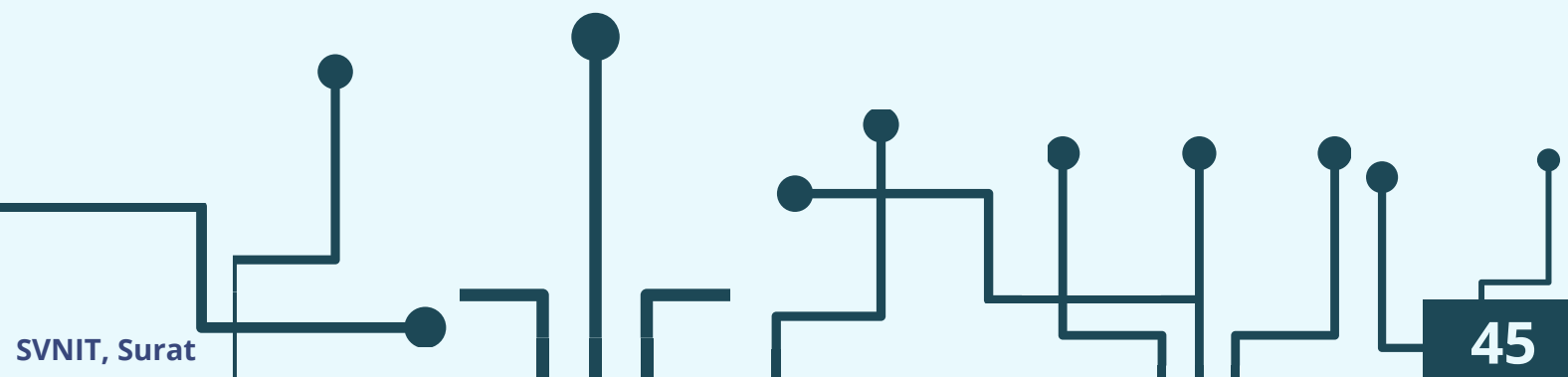
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There is a reported surge of investment into e-textiles from various sources such as investment funds, crowdsourcing and MNCs such as Google, Apple, Intel, Nike, and Adidas. The e-fibers that give e-textiles their electronic functionality are also anticipated to see a spike of investment in the coming decade indicating a shift of focus from discrete devices like smart watches and spectacles to electronic or electrical textiles.

COMMENTS & SUGGESTIONS

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Please send your feedback to newsletterce20@gmail.com



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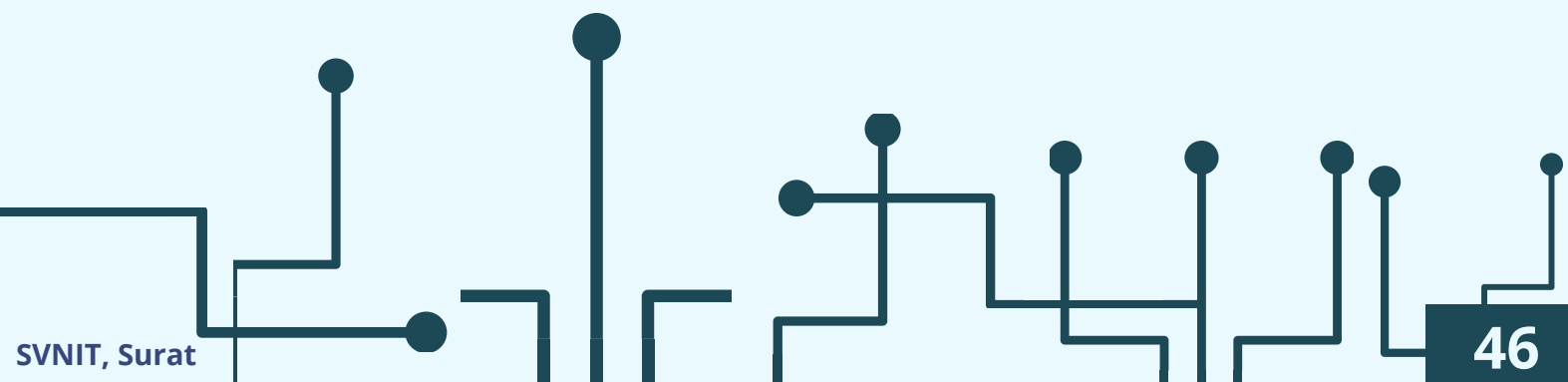
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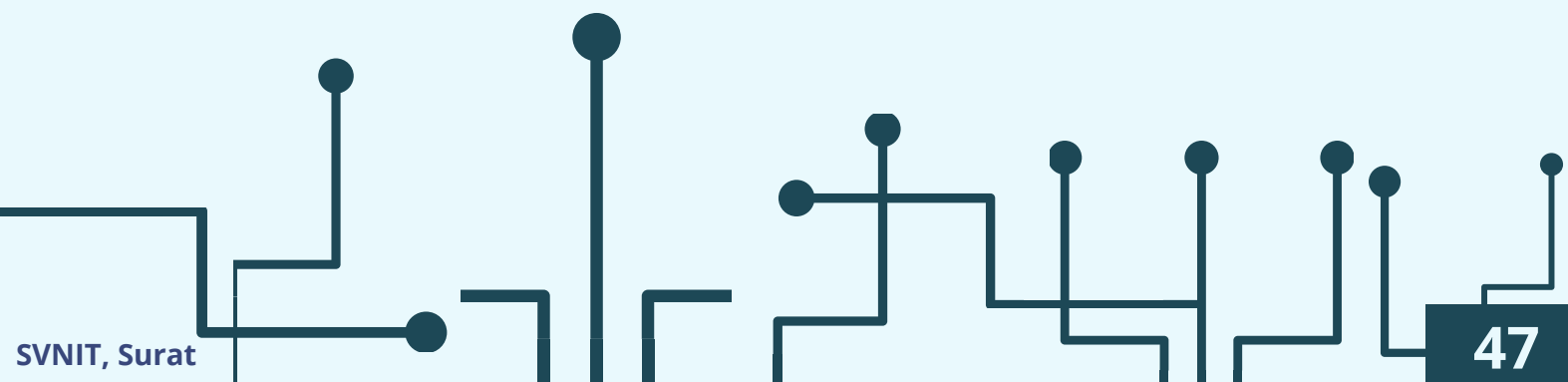
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