ROHINI
COLLEGE OF ENGINEERING & TECHNOLOGY
Approved by AICTE and Affiliated to Anna University, (An ISO Certified Institution)

THE FAIRE CONNECTRONS

ELECTROVISION

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

2021-2022

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NEWSLETTER

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From Chairman's Desk

Dear All,

"Learning gives creativity,
creativity leads to thinking,
thinking provides knowledge,
knowledge makes you great"

- Dr.A.P.J.Abdul Kalam.

These words by - Dr.A.P.J.Abdul Kalam perfectly describe our aim at Rohini College of Engineering and Technology. Beyond providing a sound education, we wish to provide our students a holistic learning experience for life. Our aim is to teach students to LEARN, not just STUDY. Hence, we strive to travel beyond the boundaries of mere books. We have realized that the future is abstract and unknown but the youth in our hands are real and can be Molded. Engineers play the most vital and important role in nation building. They create new inventions using best engineered technologies to make human life more comfortable, secure and productive. In modern times, nations which have rich engineering and experienced technological domains are flourishing economically and are providing better lives to their people We have excellent potential to grow in diversified areas and excel in Engineering and technological fields. We need enormous number of engineers and managers to write next story of success.

We have identified the needs of modern engineering, technology for modern age students, with a vision and mission accompanying transparency, accountability and accessibility which keeps us abreast. I can proudly say that Rohini College of Engineering and Technology is the most modern and sophisticated multidisciplinary institution, imparting quality education and providing a wide and varied arena for the staff and students to showcase their academic and extracurricular talents. With relentless efforts, the college aspires to orchestrate the students' potential for the enrichment and progress of society by equipping them with technical expertise and soft skills. Our well qualified and experienced Teaching faculties guide the students to hone their talents to excel in this competitive world.

I am proud to say that once our students step in, they step out with self-confidence and knowledge to face all future endeavors with full conviction. Fly in the plane of Ambition, Land in the Airport of Success, The luck is yours the wish is mine. May your future always shine. Good Luck.

Cordially,

Shri.K.NEELA MARTHANDAN

Chairman, Rohini Groups.

Pro-Chairman's Message

Dear All,

Endorsing creativity and stirring innovation are two of the vital elements of a successful education and Newsletter is the perfect amalgamation of both. It harnesses the nifty energies of the academic community and refines the essence of their inspired imagination in the most brilliant way possible.

Hence, I am delighted to know that Newsletter of ECE Department "Electrovision" is ready for publication. I take this opportunity to congratulate the editorial board for bringing out this Newsletter, which in itself is an achievement considering the effort and time required. May all the students soar high in unexplored skies and bring glory to the world and their profession with the wings of education!

Best Wishes,
Dr.N.NEELA VISHNU, M.B.A.,
Pro-Chairman
Rohini College of Engineering & Technology Kanyakumari.

Managing Director's Message

Dear All,

It is a matter of great pride and satisfaction to bring out the News Letter "Electro Vision" released from the Department of ECE. I am confident that this issue of Department News Letter will send a positive signal to the staff, students and the person who are interested in the Technical education and Technology based activities.

A News Letter is like a mirror which reflects the clear picture of all sorts of activities undertaken by the Department and develops writing skills among students in particular and teaching faculty in general. I congratulate the Editorial Board of this News Letter who have played wonderful role in accomplishing the task in stipulated time. Also my heartfelt Congratulations to staff members and Students for their fruitful effort.

Best Wishes,
Dr.V.M.BLESSY GEO, M.Sc.,Ph.D.
Managing Director
Rohini College of Engineering & Technology Kanyakumari.

Principal's Message

Dear All,

It gives me great pleasure, as a Principal of this college, to say a few words about Rohini College of Engineering and Technology. Any Institution, if it aims at reaching greater heights, needs to have clearly spelt Vision and Mission. Our college has set its Mission as to impart Quality Education to all the people, thereby developing the nation as a whole. Our long term vision being to achieve greater heights in the field of education by providing an opportunity to each and every individual to choose the right path, realize the value of education and achieve their goals by adding values through quality education. We give more emphasis to the overall moulding of every student through quality education and In-plant training, right from the initial stage of education. The pleasing and peaceful environment in which the college is located, favors the students in focusing more on their studies. Well-equipped laboratories and work shop with most modern and sophisticated instruments/machineries are provided to impart state-of-the-art education to the students. Ample opportunities are being provided to the students in Personality Development and other extracurricular activities. Well qualified and experienced teaching faculty is provided to impart quality education to the students. The placement cell has a vital role in placing the students in the reputed companies. With all these facilities in place and with the right attitude of the Management. The students who continue education in this esteemed Institution would be greatly benefited in future. Good Luck!

Best Wishes,

Dr.R.RAJESH, M.E., Ph.D.
Principal
Rohini College of Engineering & Technology Kanyakumari.

HOD's Message

Dear All,

At the outset, I would like to thank the Management and Principal for their continuous support and Guidance, Faculties and students for doing exemplary support and contributions in the department! It gives me immense pleasure to note that the editorial board brings out another edition of newsletter "Electrovsion". It is great to find students as winners and participants in co-curricular and extracurricular activities which certainly prove that our students are adequately equipped and possess necessary skill-sets to bring such laurels to the Institution and Department. The Department aims academic progression, skill development, inculcating research value, bringing out hidden talent of students as well as faculty members through activities like Guest lectures, Faculty Development Programmes, Research workshops, Technical Symposium, Mini-Project Expo etc., This newsletter is a medium to present the glimpse of such activities and achievements of the department in each semester to all the stakeholders. I am sure that by reading these pages you will get a bird's eye view about activities of ECE Department.

Cordially,
Dr.S.MOHANALAKSHMI, M.E., Ph.D.
Professor & Head / ECE .

ASSOSICATION COORDINATOR

Mr.R.V.NAGARAJAN
Assistant Professor

Mrs.S.GEETHA
Assistant Professor

Dear All,

It gives us great pleasure to bring you the first issue of "ElectroVision", the ECE department Newsletter of Rohini College of Engineering and Technology, Kanyakumari. The name and fame of an institute depends on the caliber and achievements of the students and teachers. The role of a teacher is to be a facilitator in nurturing the skills and talents of students. This magazine is a platform to exhibit the literary skills and innovative ideas of teachers and students "Electrovision" presents the skills and innovative thinking of students and contributions of teachers. We would like to place on record our gratitude and heartfelt thanks to all those who have contributed to make this effort a success. We profusely thank the management for giving support and encouragement and a free hand in this endeavor. Last but not the least we are thankful to all the authors who have sent their articles. We truly hope that the pages that follow will make an interesting read. With Best Wishes!

Assistant Editor's Message

It gives us great pleasure to bring you the first issue of "ElectroVision", the ECE department Newsletter of Rohini College of Engineering and Technology, Kanyakumari. The name and fame of an institute depends on the caliber and achievements of the students and teachers. The role of a teacher is to be a facilitator in nurturing the skills and talents of students. This newsletter is a platform to exhibit the literary skills and innovative ideas of teachers and students "Electrovision" presents the skills and innovative thinking of students and contributions of teachers.

Cordially,
Mr. N.RAJA SUNIL,
Second Year, ECE.

INSTITUTE VISION

- To be an Academic Institute of Continuous Excellence towards Education and Research in Rural Regime and Provide Service to Nation in terms of Nurturing Potentially Higher Social, Ethical and Engineering Companion Graduands.

INSTITUTE MISSION

- To Foster and Promote Technically Competent Graduands by Imparting the State of Art Engineering Education in Rural Regime.
- To Enunciate Research Assisted Scientific Learning by Dissemination of Knowledge towards Science, Agriculture, Industry and National Security.

DEPARTMENT VISION

- To promote ethical and innovative Electronics and Communication Engineers through excellence in teaching, training and research so as to contribute to the advancement of the rural society and mankind.

DEPARTMENT MISSION

- To impart high quality technical education and exposure to recent trends in the industry, to ensure that the students are moulded with competent qualities of Electronics and Communication Engineering.
- To inculcate research capabilities and exemplary professional conduct to lead and to use technology in agriculture, industry and national security for the progress of our country.

PROGRAM EDUCATIONAL OBJECTIVES (PEO's)

- PEO1: Lead a successful career by applying the Scientific and Engineering fundamentals to formulate and solve the real life problems.
- PEO2: Practice the ethics of their profession, consistent with a sense of social responsibility and aptitude for innovations as they work individually and in multi-disciplinary teams.
- PEO3: Be receptive to recent technologies so as to excel in industry and accomplish professional competence through lifelong learning.

PROGRAM SPECFIC OUTCOMES (PSO's)

- PSO1: Ability to perform innovatively in the fields of Electronics and communication Engineering by utilizing the acquired knowledge and to progress in the profession by applying ethical values ultimately benefiting the rural society.
- PSO2: Apply advanced engineering hardware and software tools to solve complex Electronics and Communication Engineering problems.

DEPARTMENT ACTIVITIES

ENGINEER'S DAY CELEBRATION

Engineers day was celebrated on 15 September 2021 at 3 pm in Opulent hall. In honour of Bharat Ratna Sir.MokshagundamVisvesvarayya as a tribute to one of the greatest engineer of the country for his outstanding contribution to society. Science Club Organized this Event. The event was initiated with a working model making competition, participated by the students of the Institute.OurManaging Director (Dr. N. Neela Vishnu) , Chief Financial Officer (Dr. V.M. Blessy Geo)along with The Principal (Dr.R. Rajesh) evaluated the models based on innovation and creativity involved. Students of RCET enthusiastically participated in debate on – Electric Vehicles Blessing or Curse ?

The chief Guest of the day was Mr.JeyanandhanThulasiraman, CEO , Tesla Minds, Chennai. He emphasized on the importance role playing as young Engineers, right from their first year of engineering education, immerse themselves into becoming engineers on purpose. He reminded the audience about the selfless services of Sir. M. Visvesvarayya and urged the fraternity to follow his footsteps for building future India.

DEPARTMENT OF ECE - GUEST LECTURE AND INSTALLATION OF NEW OFFICE BEARERS – MATLAB CLUB

Department of ECE in association with MatlabClub , On 16th September 2021 Organized a guest Lecture on Matlab , The Inaguration Ceremony began With the esteemed Presence of Our Managing Director (Dr. N. Neela Vishnu) , Chief Financial Officer (Dr. V.M. Blessy Geo), Honuourable Principal Dr.R.Rajesh &Dr.S.Mohanalakshmi-Professor (Head of the Department –ECE) along with Coordinator Dr.R.B.Benisha .The Chief Guest of the day was Mr.kavin .K.S, Manager of AB Technologies. The aim of the guest lecture is to equip students with the latest theories and practices in the modern world with a personalized experience that is rich in technical knowledge such that it covers basic concepts of MATLAB and its Applications in various areas.

DEPARTMENT OF ECE - TMIS08- "KALAM INTERNSHIP PROGRAM"

Department of ECE Organized a 2 Weeks Internship Program on "ANTENNA AND RF FILTERS" .The Resource Person of the day was Mr.Jayanandhan Thulasiraman , CEO, Tesla Minds , Chennai. The participants were offered different design aspects of antenna modeling using software. . It mainly focused on Basics of Antenna design parameter considerations for Antenna design and Filter Design and the Role of simulation in RF & Microwave.

DEPARTMENT OF ECE- SPECIAL LECTURE

Department of ECE Organized a Special Lecture on "Carrier Opportunities in the Field of RF and Antenna ". Expert Mr.Jayanandhan Thulasiraman , CEO, Tesla Minds , Chennai delivered his talk on the current trends in research on Micro strip patch antennas using electromagnetically coupling to meet requirements like high bandwidth, directivity and gain. He also explained the features and advantages of micro strip patch antennas and encouraged students in scope of research and future advancement in antenna field.

WEB DEVOLPMENT COURSE - INTERNSHIP

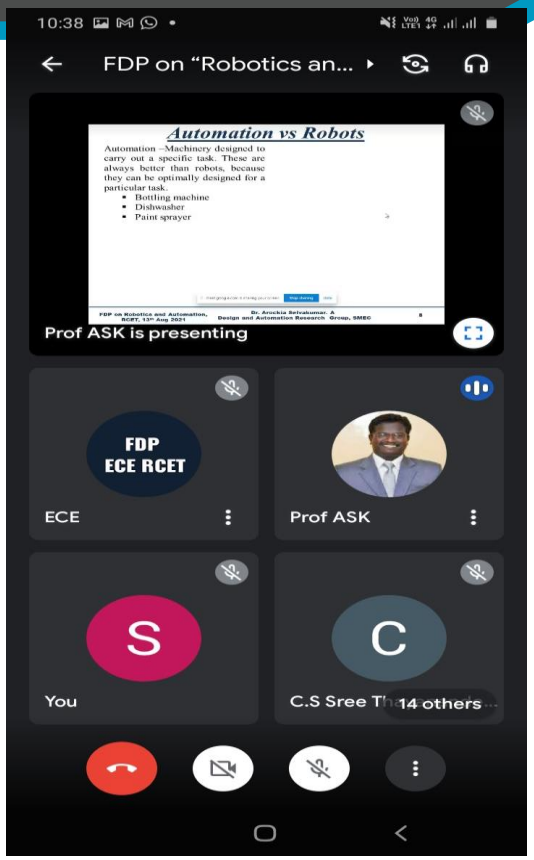
- Student N.K.PRIYANKAA from ECE Department completed her One week Course on WEB DEVELOPMENT COURSE from 01-07-2021 to 31-08-2021 on VERZEO Company.

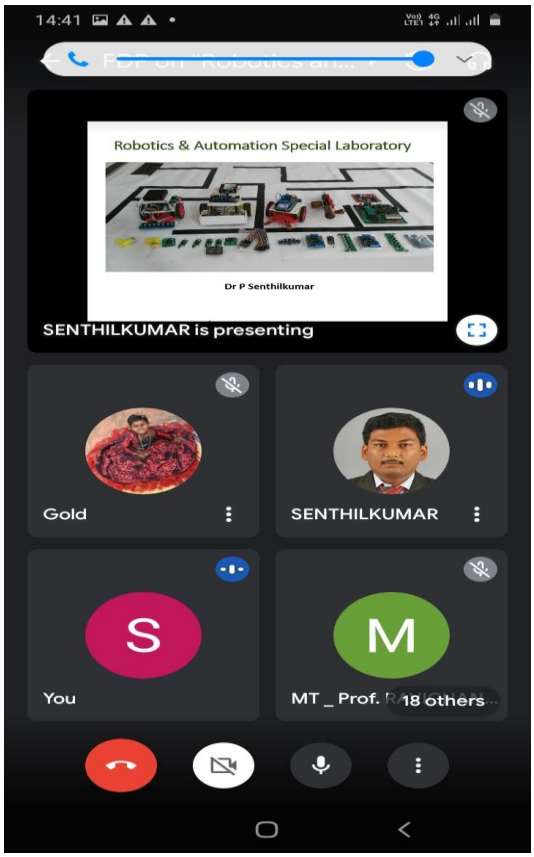
WEBINAR

Entrepreneurship Development and Innovation Institute (EDII) Tamilnadu - IEDP Hub University College of Engineering, Nagercoil and RCET organized a webinar on 17-08-2021 which helped the students to expertise in the field of entrepreneurship.

FDP ON ROBOTICS AND AUTOMATION

Department of ECE conducted a 5 days' faculty development programme on " Robotics and Automation" from 10 to 14 th August 2021 to upgrade the knowledge of faculty. The key focus of the FDP were design, functioning and applications of Robot, Electrical drive systems and sensors used in Robotics, AI and other trending innovations in Robotics.

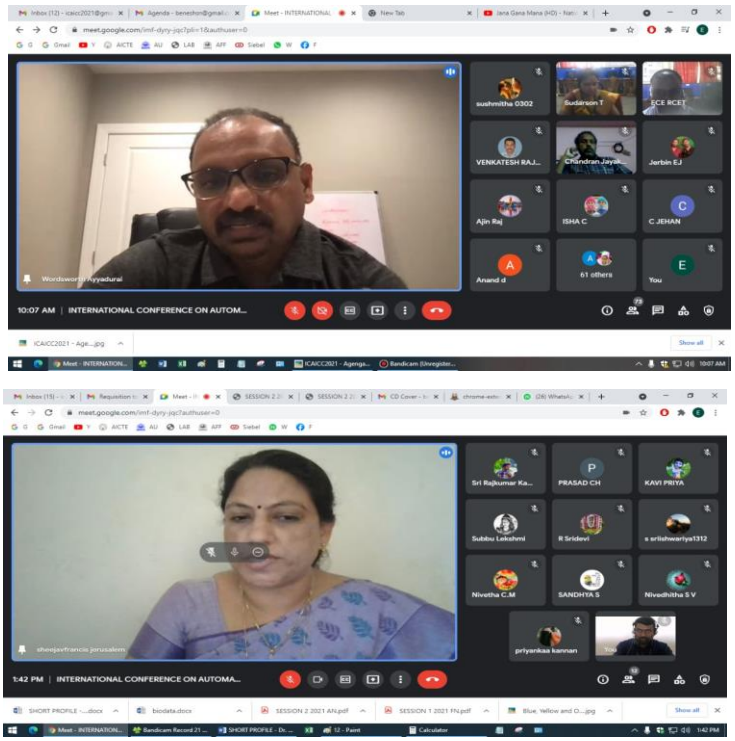




INTERNATIONAL CONFERENCE ON " AUTOMATION INTELLIGENT COMPUTING AND COMMUNICATIONS

The " Faire Connectrons" of ECE Department organized an International Conference on " Automation Intelligent Computing and Communications. On 25-08-2021. This conference gave an opportunity to explore the new horizon of innovation from distinguished researchers scientist, Eminent Authors in Academia and Industry working for the advancement in Science , engineering and Technology all over the World.

Our ECE Department organized "Association Inaugural Programme" for the Academic Year 2021-2022 on 28.08.2021 @3:00 pm through Online Mode and it was telecasted in live on YouTube. The Inaugural Address was delivered by Mr. Jayanandhan Thulasiraman , Founder, Chief Executive Officer ,Tesla Minds, Chennai.



STUDENTS ACHIEVEMENTS

ACHIEVEMENTS BY STUDENTS- CONGRATULATIONS!

Our RCET Encourages the students to Participate in Various events and competitions. Our Students never fail to prove their Ability in achieving.

- Our Final year students **S.V.NIVEDHITHA** and **N.K.PRIYANKAA** from **ELECTRONICS AND COMMUNICATION ENGINEERING DEPARTMENT** won second prize in Paper Presentation Competition in the National Level Virtual Symposium C-ELCTRA held at PET Engineering College. Our RCET Management apppreciated and congratulated the winners.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Vallioor - 627117, Tirunelvali District, Tamilnadu
National Level Virtual Symposium
C ELECTRA - 2021
Certificate of Appreciations
This is to Certify that " S.V. NIVEDHITHA " of " ECE / IV; ROHINI COLLEGE OF ENGINEERING AND TECHNOLOGY " actively Participated and Won the " SECOND PRIZE " in the " Paper Presentation(ECE) " during the "National level Virtual Symposium" C - ELECTRA 2021 organized by PET Engineering College on 9th September 2021.
Convener
Principal


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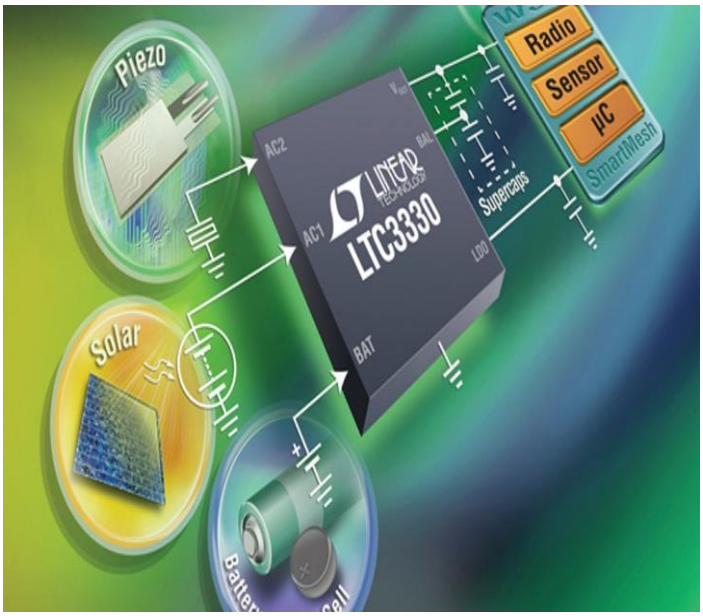
National Level Virtual Symposium
C ELECTRA - 2021
Certificate of Participation
This is to Certify that " N.K.PRIYANKAA " of " IV/ECE; ROHINI COLLEGE OF ENGINEERING AND TECHNOLOGY " Participated and Presented the Paper Entitled " ARTIFICIAL INTELLIGENCE " in the "National level Virtual Symposium" C - ELECTRA 2021 organized by PET Engineering College on 9th September 2021.
Convener
Principal

Competitions urges the students to challenge themselves and try new things which improves their creativity and problem solving skills... Rcet motivates the students and provide ample facility to nurture the skills of the students by encouraging them to participate in various competitions. **Varshini (ECE DEPARTMENT)** has won second price for Elocution Competition conducted on 17.09.2021 By Amma makkal munetra kalagam. Hearty congratulations and best wishes for her on behalf of RCET management and the principal.

INVITED ARTICLES

ENERGY HARVESTER & POWER MANAGER IC EXTENDS LIFE OF PRIMARY BATTERIES



Linear Technology announces the LTC3107, a highly integrated DC/DC converter designed to extend the life of a primary battery in low power wireless system networks (WSNs). The LTC31O7 combines energy harvesting and power management capability with a primary battery cell to extend the battery's usable lifetime. The LTC3107 harvests energy from thermoelectric generators (TEGs) and thermopiles when these sources are available, storing excess power in a storage capacitor and seamlessly transitioning to the primary cell to power a wireless sensor node when harvested power is unavailable. The LTC3107's internal boost converter, combined with a small step-up transformer, harvests energy from input voltages as low as 20mV, commonly found from sources such as TEGs and thermopiles, and delivers an output which tracks the battery voltage. An additional 2.2V LDO output provides power to an external microprocessor. If harvested energy is not available, the system Is powered directly from the battery, requiring only 6pA. The combination of a small step-up transformer, 3mm x 3mm package and minimal external components ensures a highly compact solution footprint.

The LTC3107 is designed to use the primary battery to start up the IC and power VOUT and the LDO with or without any available power from the energy harvesting source. When the energy harvesting source is available, the LT3107 seamlessly transitions to run only from the energy harvesting source with only 80nAof quiescent current drawn from the primary battery. If the energy harvesting source goes away or if the load exceeds the energy harvested, the LT3017 transitions to the primary battery to supply the VOUT and VLDO loads. The BATT OFF indicator can be used to track the battery usage.

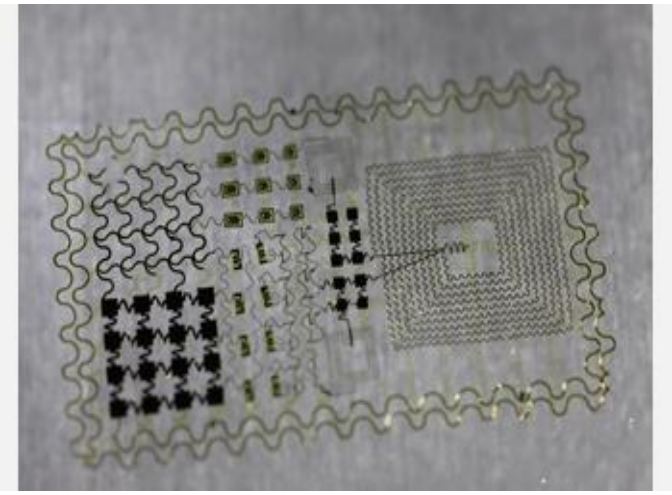
The LTC3107EDD is offered in a 3mm x 3mm 10-lead DFN package, priced starting at $2.95 each for 1,000-piece quantities. An industrial grade version, the LTC3107IDD, is guaranteed to operate over the -40°C to 125°C operating junction temperature range and is priced starting at$3.45 each in 1,000-piece quantities.
Both versions are available from stock.

ADLIN MAHIBA B
IV ECE-A

INVITED ARTICLES

STICK-ON ELECTRONIC TATTOOS

Researchers have made stretchable, ultrathin electronics that cling to skin like a temporary tattoo and can measure electrical activity from the body. These electronic tattoos could allow doctors to diagnose and monitor conditions like heart arrhythmia or sleep disorders noninvasively. prototype that can replicate the monitoring abilities of bulky electrocardiograms and other medical devices that are normally restricted to a clinical or laboratory setting. This work was presented today in Science. To achieve flexible, stretchable electronics, Rogers employed a principle he had already used to achieve flexibility in substrates. He made the components— all composed of traditional, high-performance materials like silicon— not only incredibly thin, but also "structured into a serpentine shape" that allows them to deform without breaking. The result, says Rogers, is that "the whole system takes on this kind of spiderweb layout. "Devices that were either flexible but not stretchable, or stretchable but not flexible. In particular, his previous work was limited by the fact that the electronics portion s of his designs couldn't flex and stretch as much as the substrate they were mounted on the electronic tattoo achieves the mechanical properties of skin, which can stand up to twisting, poking, and pulling without breaking. Rogers's tattoo can also conform to the topography of the skin as well as stretch and shift with it. It can be worn for extended periods without producing the irritation that often results from adhesive tapes and rigid electronics. Although Rogers's preliminary tests involved a custom-made substrate, he also demonstrated that the electronics could be mounted on to a commercially available temporary tattoo.



The prototype was equipped with electrodes to measure electric signals produced by muscle and brain activity. This could be useful for non-invasive diagnosis of sleep apnea or monitoring of premature babies' heart activity. To demonstrate the device's potential as a human-computer interface, Rogers mounted one of the tattoos on a person's throat and used measurements of the electrical activity in the throat muscles to control a computer game. The signal from the device contained enough information for software to distinguish among the spoken words "left," "right," "up," and "down" to control a cursor on the screen.

The device included sensors for temperature, strain, and electric signals from the body. It also housed LEDs to provide visual feedback; photo detectors to measure light exposure; and tiny radio transmitters and receivers. The device is small enough that it requires only minuscule amounts of power, which it can harvest via tiny solar cells and via a wireless coil that receives energy from a nearby transmitter.

Rogers hopes to build in some sort of energy-storage ability, like a tiny battery, in the near future. The researchers are also working on

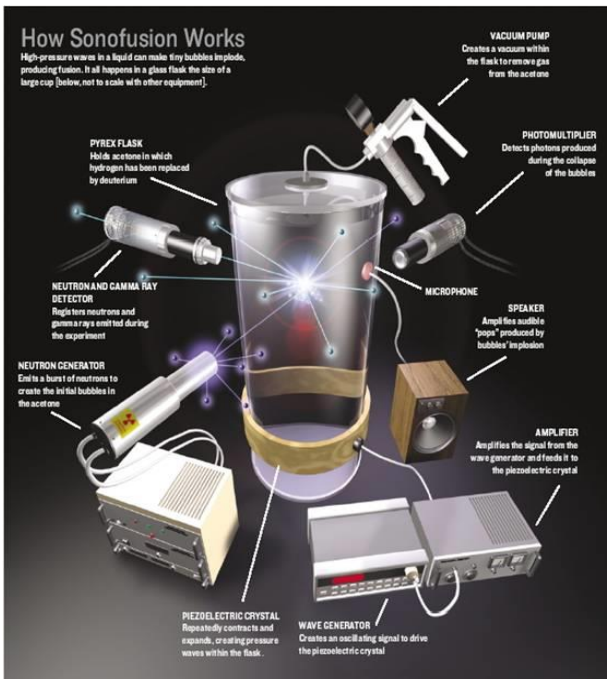
making the device wireless.

AVINASH AYEKPAM

IV ECE-A

BUBBLE POWER

Sonofusion is technically known as acoustic inertial confinement fusion. In this we have a bubble cluster (rather than a single bubble) is significant since when the bubble cluster implodes the pressure within the bubble cluster may be greatly intensified. The centre of the gas bubble cluster shows a typical pressure distribution during the bubble cluster implosion process. It can be seen that, due to converging shock waves within the bubble cluster, there can be significant pressure intensification in the interior of the bubble cluster. This large local liquid pressure (P>1000 bar) will strongly compress the interior bubbles with in the cluster, leading to conditions suitable for thermonuclear fusion. More over during the expansion phase of the bubble cluster dynamics, coalescence of some of interior bubbles is expected, and this will lead to the implosion of fairly large interior bubbles which produce more energetic implosions.



The apparatus consists of a cylindrical Pyrex glass flask 100 m.m. in high and 65m.m.in diameter. A lead-zirconate-titanate ceramic piezoelectric crystal in the form of a ring is attached to the flask's outer surface. The piezoelectric ring works like the loud speakers in a sonoluminescence experiment, although it creates much stronger pressure waves. When a positive voltage is applied to the piezoelectric ring, it contracts; when the voltage is removed, it expands to its original size.

The flask is then filled with commercially available deuterated acetone (C 3 D 6 0), in which 99.9 percent of the hydrogen atoms in the acetone molecules are deuterium (this isotope of hydrogen has one proton and one neutron in its nucleus). The main reason to choose deuterated acetone is that atoms of deuterium can undergo fusion much more easily than ordinary hydrogen atoms. Also the deuterated fluid can withstand significant tension (stretching) without forming unwanted bubbles. The substance is also relatively cheap, easy to work with, and not particularly hazardous.

SHANE NITHEESH M

II ECE-B