

DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

BITS & BYTES

E Newsletter



Volume II, Issue 3, Jan – Mar 2020

Department of Electronics and Communication Engineering

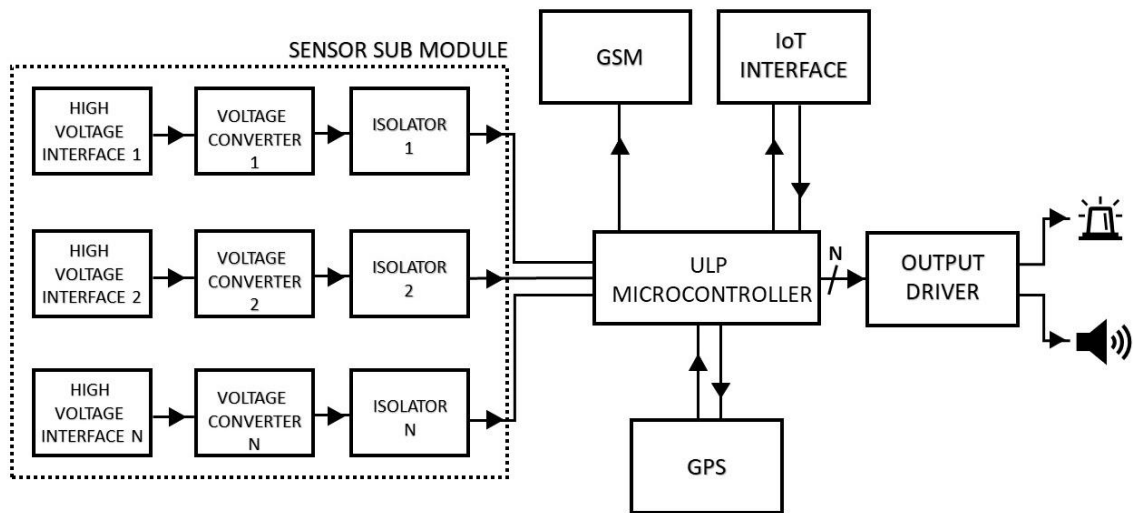
Students' Article

ELECTRIC LINE LEAKAGE DETECTION SYSTEM

KARTHIK RAJAGOPAL, I Year ECE

This work aims to lower the number of electrocution-related fatalities that occur during rainy seasons as a result of electricity leakage in wet electricity poles. Electric leaks are unavoidable because they are not visible to the human eye, unlike other accidents. The ELDS device to be developed can be installed in utility poles to detect electric leaks, alert the residents in the area, and alert the electric department by sending them a message through an app.

The control module and the sensor are the two components of the device. The installation of sensors in each pole will allow for the identification of leaks, which the control circuit will process. The sensor circuit is built measures zero watts of electricity if there were no leaks. To increase their reliability and make them more resistant to interference and other electric surges, sensor circuitry is only constructed with passive components. The likelihood of fault is significantly decreased because the sensor employs physical measuring techniques. The sensor's output is coupled with an isolation stage which isolates the sensitive electronics in the control circuit from the high voltage. This also makes them safe to handle during service routines. In addition to that, it also brings down the cost to Rs. 15 per sensor(including the isolation circuit).



The control circuit processes the data from the sensors. A control circuit can handle about 30 to 40 poles at a time while also having the facility to expand its pole monitoring count if needed. The circuits are built using ultra-low power micro controllers which makes them a highly energy-efficient design.

The created 'ELDS' android app is used to monitor all pole-hubs and it has a complete pole database. Only authenticated users are allowed to login to manage the poles. All the data of the poles are stored in a separate database. The app provides the list of all the poles with leaks along with the location of their hub. It also tracks whether the hubs are working and are in active data transfer with the app.

Students' Achievement

- **Mr.R.Gurucharan** of final year ECE, received a grant of Rs. 21000/- from ISRO towards their project proposal “Automated Portable Beverage Maker with Selection of Choice and Dry-Cleaning Mechanism with Quantum Anomalous Hall Effect” under the STARTUPINDIA projects scheme.
- **Mr.Rakesh Velavaluri** and **Mr.M.S.Vignesh** of 1st year ECE department have placed Third with a cash prize of Rs 400/- in Circuit Debugging at SRM INSTITUTE OF SCIENCE AND TECHNOLOGY, Vadapalani Chennai on 25th February 2020.
- **Mr.Rakesh Velavaluri** and **Mr.M.S.Vignesh** of I year ECE received Third Prize in Circuit Debugging during IETE Students Day Celebration organized by Institution of Telecommunication Engineers (IETE), Chennai Centre at SRM Institute of Science and Technology, Vadapalani Campus on the 25th of February 2020.
- **Mr.B.Akilesh Kumar** and **Mr.A.Kenwin Patrick** of I year ECE received First Prize in Circuit Debugging from The Institute of Electronics and Telecommunication Engineers (IETE) at SRM Institute of Science and Technology, Vadapalani Campus on the 25th of February 2020.
- **Mr.N.Siddique Afraaz, Mr.R.Ugendran and R.Sivasubramaniyan** of I Year ECE have placed Second with a cash prize of Rs.500 in Circuit Debugging at SRM Institute of Science and Technology, Ramapuram on 19th February 2020.
- **Mr Keshav E and Ms Vinothini S** of III year ECE secured first prize in Makeathon and second prize in Megaevent and third place in Circuitrix at Pranav 2k19 held at Meenakshi Sundaram College of Engineering on 07/01/2020.
- **Mr.Vignesh M, Mr.Vigneshwar S J, Mr.Vignesh T J and Ms.Kavya E** of III Year ECE won BEST USER INTERFACE AWARD during Make-A-Thon 2.0 at SVCE held from 7th to 8th February 2020 (24 Hrs) organized by ECE Association in association with IETE-SF.
- **Mr Sakthi Saileshram of III Year ECE Ms Swetha** of III Year EEE won BEST FEASIBLE PRODUCT AWARD during Make-A-Thon 2.0 at SVCE held from 7th to 8th February 2020 (24 Hrs) organized by ECE Association in association with IETE-SF.
- **Mr Keshav E, Mr M Piyush, Mr Rahil H Sakariya and Ms Vinothini S** of III year ECE secured thirdplace in Micromouse at SHAASTRA 2020 held at IIT, Madras on 05/01/2020.

- **Mr Chenchu Ujwal** of III-year ECE member of CSI SVCE Student Chapter won the prestigious "Highest committed student activist award" across 7 zones of National wide CSI chapters.
- **Mr.Sudesh Kumar S, Mr.Sandeep Pai K and Mr.Thejesh Chandar Rao J C** of III Year ECE has secured runner up in MAKE @ SVCE, 24 - Hour Make-A-Thon conducted by the EEE Department of SVCE held on 23rd and 24th of January, 2020.
- **Mr.Sudesh Kumar S, Mr.Sandeep Pai K and Mr.Thejesh Chandar Rao J C** of III Year ECE has secured first place in Line Follower Event at ROBOFEST 2020 conducted by IEEE Student Branch of SVCE on 22nd February 2020.
- **Mr.Sudesh Kumar S, Mr. Sandeep Pai K and Mr. Thejesh Chandar Rao J C** of III Year ECE has secured first place in Project Expo Event at ROBOFEST 2020 conducted by IEEE Student Branch of SVCE on 22nd February 2020.
- **Mr.S.Prem Raj, Mr.S.Lokesh, Mr.Rahil H Sakariya and Ms.Abirami S** of III Year ECE Department has placed FIRST in Make- A-Thon 2.0 for their project Women Safety Coat at SVCE on 7th and 8th February 2020 organized by ECE Association in association with IETE-SF.



- **Mr V R Sudarshan Krishna**, Final year ECE Student participated in various events of ENANTRA 2020 and secured the below-mentioned prizes.
 - 1st in Rural Product Development
 - 2nd in Marketing Mania
 - 3rd in Entrepreneurship 101
 - 3rd in Values in business

"ENANTRA 2020" was organized by the Centre for Entrepreneurship Development, Anna University during 20th to 23rd of February 2020. It is one of the largest Youth Entrepreneurship Fests in the state.

Faculty Publications

- **Dr N.Kumaratharan** Professor, Mr V.Rajaram paper titled “Multi-hop optimized routing algorithm and load balanced fuzzy clustering in wireless sensor networks” was listed in Journal of Ambient Intelligence and Humanized during March 2020.

Workshops/FDPs/Conferences

- **Ms.R.Gayathri**, Associate Professor and **R.Babitha Lincy**, paper titled “Off-line Tamil handwritten character recognition based on Convolutional Neural Network with VGG16 and VGG19 model” in International Conference on Automation, Signal Processing, Instrumentation and Control- iCASIC-2020 during February 27-28, 2020, at Vellore Institute of Technology, Vellore.

Expert Lectures

- **Mr.D.Suresh**, (Retd) Director, Computer Access Pvt. Ltd popularly known as Solar Suresh, delivered Guest Lecture on Solar Energy Entrepreneurship: Today’s Challenges, Challenges, Tomorrow’s Opportunities on 03.01.2020.



- **Mr.Bala Subbusundaram**, Product Lead – LendingClub Corporation, San Francisco, California (2007-11 ECE Alumunus) delivered a guest lecture technical talk on “Financial technologies and thepayment trends” and “Career choices and common interview questions” under the banner of IETE Chennai Centre on Jan 10, 2020 (Friday).



Events Organized

- The ECE Association along with IETE SF, Robotics and Artificial Intelligence Club and Placement Cell organized R-programming workshop as a 5-day (15 hours) certification course from 11th to 15th Feb 2020.



- **Dr.S.Muthukumar** Professor, **Dr.S.R.Malathi** Associate Professor, **Mr.M.Athappan**, **Mrs.S.M. Mehzabeen** Assistant Professors, Department of Electronics and Communication Engineering organized a Value-added course on "VD18705-Embedded Programming Using PIC Microcontrollers from March 12 to March 13 2020 at SVCE.
- **Dr.S.Muthukumar** Professor, **Mrs.T.J.Jeyaprabha**, **Mrs.D.Menaka** Assistant Professors, Department of Electronics and Communication Engineering organized a webinar on "Beginners Guide to Machine Learning" on March 20 2020, at SVCE.
- The ECE Association along with IETE-SF, Robotics & Artificial Intelligence Club and Placement Cell organized an interdepartmental **24 hour Make-a-thon 2.0** on 7th and 8th Feb 2020.



- ECE Association along with IETE-SF, Robotics and Artificial Intelligence Club (RAIC) organized Python-programming workshop as a 5-day (15 hours) certification course from 10th to 14th Mar 2020, for II and III year students of ECE-SVCE.