**TAMILNADU STATE COUNCIL FOR SCIENCE AND TECHNOLOGY**

**DOTE Campus, Chennai – 600 025.**

**PROPOSALS INVITED UNDER**

**SCIENCE AND TECHNOLOGY PROJECT SCHEME**

|  |  |  |  |
| --- | --- | --- | --- |
| 1 | Title of the project | : | **Automated Anesthesia Injection System**  **Using UTLP** |
| 2 | Discipline under which the project is to be considered **(MUST WRITE ANY ONE OF: ~~Agricultural sciences~~/~~Biological sciences~~ / ~~Environmental Sciences~~/ Engineering & Technology/ ~~Physical sciences~~ / ~~Medical sciences~~/ ~~Veterinary sciences~~ / ~~Social sciences~~)** | : | Engineering & Technology |
| 3 | Name & Designation of the Principal Investigator | : | Mr.V.Sakthivel,ASP/ECE |
| 4 | Postal Address of the Principal Investigator | : | Department of ECE,  Paavai Engineering College,  Namakkal-637018, Tamilnadu. |
| 5 | Name, Designation and address of Co- investigator if any | : | G.Nandhakumar.,AP/ECE  Department of ECE,  Paavai Engineering College,  Namakkal-637018, Tamilnadu. |
| 6 | Contact Phone numbers (Office and residence) of PI & Co-PI along with, email id | : | PI Phone :9790186877  [sakthivelvenkatachalampec@paavai.edu.in](mailto:sakthivelvenkatachalampec@paavai.edu.in)  Co Pi Phone:9095227169  [nandhugopalpec@paavai.edu.in](mailto:nandhugopalpec@paavai.edu.in) |
| 7 | Name of the Institution/Organization in which the project will be carried out | : | Paavai Engineering College(Autonomous)  Namakkal-637018. |
| 8 | Name of other Institution(s) Organization(s) involved in the Project | : | No |
| 9 | Duration of the Project  (Maximum 2 years) | : | 2 Years |
| 10 | Total Cost of the project proposal (details to be furnished in the prescribed format) | : | 3,01,000 |
| 11 | An abstract ( not exceeding one page), describing the background, objectives, methodology and year wise budget | : | Enclosed |
| 12 | Details of the project proposal including the state-of-art of the subject, the work already done in this area in india or elsewhere and defining clearly the objectives and methodology and year wise phasing of the project | : | Enclosed |
| 13 | Brief bio-data of the investigators | : | Enclosed |
| 14 | Facilities available at the Institution/ Organization to carry out the project | : | Enclosed |
| 15 | Social relevance and usefulness of the project | : | This project can be implemented in the medical field to save human lives during surgery |
| 16 | Whether the same investigator(s) is/ are receiving funds from any other agencies | : | Yes/~~No~~ |
| If yes, Title of the project | : | Real Time Embedded System Lab |
| Agency | : | AICTE |
| Amount | : | 3,69,000 |
| Details of projects already carried out, if there is any | : | - |

|  |  |  |
| --- | --- | --- |
| Place | Namakkal | Signature of the Investigator(s) |
| Date | 15.02.2019 |
| **Signature of the Head of the Department**  **with Seal** | | **Signature of the Head of the Institutionwith seal** |

**Enclosures:** (Sl.No. 11, 12, 13, 14)

**11. Abstract:**

When a major surgery is to be done anesthesia should be given to the patient. If it lasts for a long duration, the total amount of anesthesia cannot be given in a single stroke. It may cause serious effects. If anesthesia is given below the normal particular level, the patient may wake up in the middle of the surgery. In order to avoid all these complications, automatic injection of anesthesia based on microcontroller is effective. The medical parameters should be monitored including heartbeat in order to maintain automatic injection.

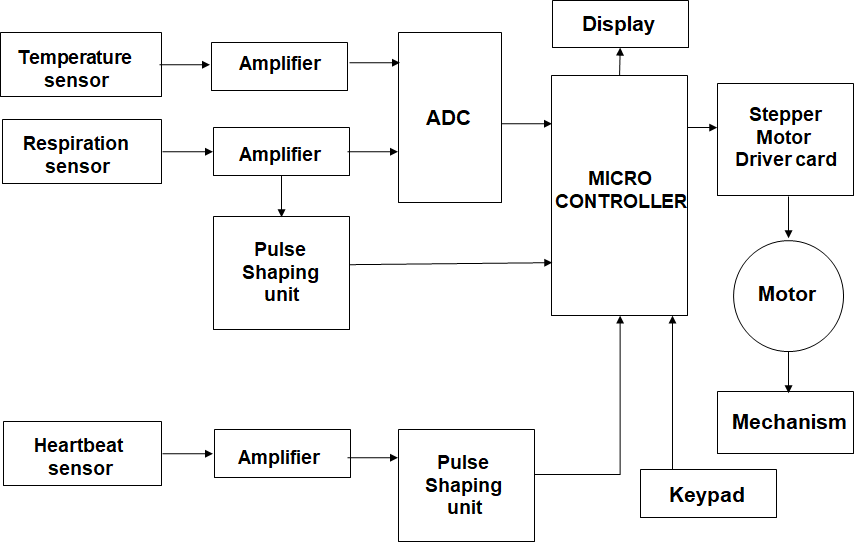
The anesthesia levels are controlled and also there is a feedback regulated by microcontroller considering all medical parameters especially heartbeat. Heartbeat sensor is used here which senses the patient's heartbeat. There is an arrangement of syringe pump for the provision of anesthesia to the patient which is mechanically connected to the stepper motor. This has a microcontroller which consists of a keypad through which the required level of anesthesia can be entered by the anesthetist, in terms of milliliters per hour. After setting the level of anesthesia, the microcontroller sets the system to administer the prescribed level of anesthesia.

For determining the direction of rotation of dc motor, various biomedical parameters are analyzed. Infusion pump can be made to rotate either in forward or backward direction by dc motor. The pump has a syringe attached through which anesthesia can be injected to the patient's body.

**11.1. Objective of the Project:**

The main objective of our project is to overcome the manual administering of anesthesia to the patients for a periodic interval of ½ hour – 1hour by using the automated microcontroller based anesthesia machine in hospitals. The anesthetist can set the level of anesthesia in terms of milliliters per hour to administer anesthesia to the patient with the help of the keypad.

**11.2 Methodology:**



**Figure:** Block diagram of Automated Anesthesia Injection System

In the present proposed system, microcontroller based system is used for injecting the drug to maintain the level of anesthesia ad-ministered to the patient. The dose of anesthesia must be known in advance, as a predefined value is programmed as input for the anesthetic control. The actual dose of anesthesia is predetermined based on the body temperature, heartbeat and respiration rate of the patient. The microcontroller is programmed using embedded system to regulate the dose of anesthesia.The heartbeat sensor, respiration sensor and the thermister (473) are used to sense the heartbeat, respiration and temperature of an individual respectively. These sensors give corresponding analog values to signal conditioning. Signal conditioning circuit gives the binary value to the microcontroller depending on the controller drives motor. The syringe placed in motor will inject the drug to the patient based on the patient’s body condition.

The anesthetist can determine the dose of anesthesia to be governed to the patient in terms of milliliter per hour ranging from 1ml to 1000ml using keypad provided along with the microcontroller. After getting the anesthesia level from the keypad regulator, the microcontroller set the system to administer anesthesia at the previously prescribed level of drugs. This dosage analyses various based on biomedical parameters received from the sensors to determine the direction of revolution of the DC motor. The revolution of the DC motor induces the infusion pump to move in forward or backward direction. The anesthesia loaded in the syringe is injected into the patient’s body.

**11.3. Details of Year Wise Budget**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl.No** | **Particulars** | **I-Year** | **II Year** | **Total** |
| A | Salaries & Wages | 60,000 | 60,000 | 1,20,000 |
| Research fellow (Rs.10000/pm)\*or  Technical Assistant (Rs.5000/pm)\* | |  |  |  |
| B | Equipment  (only project specific minor equipment )Major equipment/facilities are expected to be already available with the institution(s): Name & cost may be indicated | 1,05,000  Facilities available with the institution (Details are enclosed in Sl.No.13) | -- | 1,05,000 |
| **Total** | 1,05,000 | **---** | 1,05,000 |
| C | **Consumables** | 56,000 |  | 56,000 |
| Chemicals**/glass wares** |  |  |  |
| Fabrication/Service |  |  |  |
| Testing | 10,000 |  | 10,000 |
| Other Consumable |  |  |  |
| **Total** | **66,000** |  | **66,000** |
| D | Travel | 3,000 | 3,000 | 6,000 |
| E | Total of A+B+C+D | 2,34,000 | 63,000 | 2,97,000 |
| D | Institutional Overhead charge  ( Maximum of Rs.15000/per year) | 2000 | 2000 | 4000 |
| **G** | **Total cost of the project** | **2,36,000** | **65,000** | **3,01,000** |

**12. Similar work being done elsewhere in the country**

Anaesthesia traditionally meant the condition of having sensation blocked or temporarily taken away. It is pharmacologically induced and is a reversible state of loss of responsiveness, loss of skeletal muscle reflexes or decreased stress response or all alone provides simultaneously. This allows patients to undergo surgery and other procedures without distress and pain, they would otherwise experience. Anaesthesia has to be given to a patient considering the various parameters such as heart rate, respiratory rate, temperature etc. The dosage given manually by doctors at times may vary from its standard value and result in ill effects on the patient. In order to achieve efficient injection of anaesthesia Automatic anaesthesia controller using heartbeat sensor plays an important role which takes into account the heart rate of the patient and injects anaesthesia accordingly reducing the work of the doctors. Anaesthesia is used to produce a state of unconsciousness in patients. The conventional method of anaesthesia infusion requires experienced person to predict exact dose of anaesthesia, which create lots of pressure on anaesthesiologist. This need emerged with an urge to develop an automated system that can assist to take decision for calculating the dose of anaesthesia.

**12.1. Year-wise phasing the project:**

|  |  |  |
| --- | --- | --- |
| **S.No.** | **Activity** | **Duration** |
| 1 | Feasibility study | 3 Months |
| 2 | Designing | 6 Months |
| 3 | Real time Implementation | 8 Months |
| 4 | Testing | 4 Months |
| 5 | Report Preparation and Submission | 3 Months |
| Total | | 24 Months |

**13.** **Facilities available at the institution for undertaking this project:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl.No** | **Name of the Equipment** | **Qty Available** | **Total cost in Rs** |
| 1 | UTLP kit | 20 | 4,50,000 |
| 2 | Arduino UNO board | 10 | 12000 |
| 3 | Sensor Module | 10 | 2,50,000 |
| 5 | LCD Display | 25 | 7500 |
| 6 | DC Motors | 20 | 10000 |
| 7 | Driver circuit | 5 | 7500 |

**14. Brief bio-data of the Principal Investigator:**

**V.Sakthivel E-mail:vsakthivelme@yahoo.co.in**

**3/176 AB Bharathiyar Street, Mobile: 09790186877**

**S.Papparapatty (po),**

**Attayampatty (via),**

**Salem-Dt**

**Tamilnadu-637501**

|  |
| --- |
| CURRICULUM VITAE |

**Objective**

To establish myself in the field of education and research and to utilize my skills and experience to help the students community to achieve greater heights in academics.

**ACADEMIC QUALIFICATIONS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Course** | **Discipline / Specialization** | **Institution** | **University / Board** | **Year of passing** | **% marks** |
| **Ph.D** | Information and Communication Engineering | Anna University, Chennai. | Anna University, Chennai | Pursuing | - |
| **M.E** | Communication  Systems | Sona College of Technology | Anna University, Chennai | 2007 | 78% |
| **B.E** | Electronics and Communication Engineering | Bannari Amman Institute of Technonogy | BharathiyarUniversity, Coimbatore | 2002 | 76% |
| **Diploma** | Electrical and Electronics Engineering | The Salem Polytechnic College | DOTE | 1999 | 96% |

**Academic Experience:**

* **3Years** (From 16th July 2015 To Till Date) of Training Experience **in Paavai Engineering College,Namakkal**as a **Head of Wipro Mission10X Technology Learning Center.** (More than 450 Studentsand 100 Facultieshave been trained Till Date and Gudied 70Projects(UTLP Kit,Arduino,MATLAB,Keil) Till Date.

Project Link: https://www.youtube.com/results?search\_query=paavai+mtlc

* **11.4Years**(From 23rd May 2007 To Till Date**)** of teachingexperience**in Paavai Engineering College,Namakkal**as an**AssociateProfessor**inthe **Department of Electronics and Communication Engineering.**
* Question Paper Setter in Reputed Engineeing College (Autonomous).

**Industries Experience :**

* **1 Year** (From May 2003 To June 2004) IndustriesExpeience in **Wipro Technologies,Bangalore** as a Software Engineer.
* **1 Year** (From July 2002 To May 2003) Industries Expeience in **Kumar Industries,Coimbatore**as aElectrical Supervisor.

**Academic** **Responsibilities:**

**As a Head -MTLC:**

* + To conduct training classes for Students in Wipro mission 10X Center to enhance the Engineering attributes of the Engineering graduates through Project Based Learning.
  + To conduct Hands on Training to students and Faculties on UTLP kit and to guidethe students to do projects using UTLP Kit.
  + To help students to go beyond the experiments to develop products and solve real life problems.

**As a AssociateProfessor :**

* To employ different teaching methods incorporating audio and visual activities to address all learning styles.
* To provide individualized instruction to keep all students at expected skill level.
* To plan, evaluate and revise curriculam, course content, and course materials and methods of instruction.
* To analyze the material for the students and providing them guidance on various aspects of the subjects.
* Write grant proposals to procure external research funding.

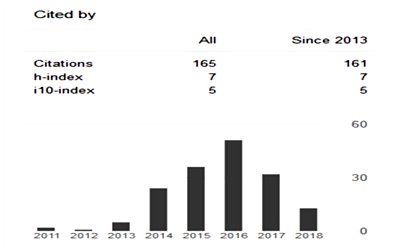
**Career Development Programs Attended :**

**Industrial Training Programme**

* Attended Mission10x **UTLP Practitioner Training Program** in Mission 10X Center, Wipro Technologies, Bangalore from 1 to 5th July 2013.
* Attended Mission10x **UTLP Expert Workshop** in Mission 10X Center, Wipro Technologies, Bangalore from 28 to 30th October 2013.
* Attended Mission10x Consultant Workshop in Mission10X Center, Wipro Technologies, Bangalore from 22 to 27th Feb 2015.
* Attended Mission10x **AcdemicLeadrship workshop for Head of the Department** from 15to 18th December 2105.

**International Journal**

**Reference:** [**https://scholar.google.com/citations?user=7ZzZcekAAAAJ&hl=en**](https://scholar.google.com/citations?user=7ZzZcekAAAAJ&hl=en)

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* Paper titled “Microstructure Analaysis and Enchancement of Nodular Cast Iron Using Digital Image Processing” published in **International Journal of Research in Engineering and Technology ,Volume 4,Issue 4;April 2015.**
* Paper titled “Secured Electronic Voting Machine using Biometric” published in **International Journal of Advanced Engineering and Global Technology**,Volume 3,Issue 11;December 2015.**ISSN No: 2309-4893**
* Paper titled “Protecting Alongside Collaborative Attacks by Malevolent Knobs in WSNS: A Cooperative Bait Recognition Approach” published in **International Journal of Emerging Technology in Computer Science & Electronics (IJETCSE) ISSN: 0976-1353 Volume 18 Issue 2 – NOVEMBER 2015.**
* Paper titled “A Novel FPGA Design with Hybrid LUT /MUXArchitecture” published in**SSRG International Journal of Electronics and Communication Engineering (SSRG-IJECE) – Volume 3 Issue 11 – November 2016.**
* Paper titled “A Dynamic Threshold Approach For Video Object Extraction”publishedin **International Journal of Emerging Technology and Advanced Engineering-Volume 4, Special Issue 3, February 2014.**
* Paper titled “A Reliable Low Power Multiplier Design by Adopting Ant Architecture with Fixed Width Multiplierpublished in”**International Research Journal in Advanced Engineering and Technology (IRJAET) Vol. 1, Issue 4, pp.246 - 252, November, 2015- ISSN (PRINT) : 2454-4744.**
* Paper titled “Protecting Alongside Collborative Attacks by Malevolent KNOBS in WSNS:A Co operative BAIT Recognition Approch”published in**International Journal of Emerging Technology in Computer Science and Electronics Vol. 18, Issue 2, , November, 2015- ISSN (PRINT) : 0976-1353.**
* Paper titled “[Design of Sharp MDFT Filter Banks With Perfect Reconstruction in the SPT Space](http://search.proquest.com/openview/80d52110ebbfc42e9a91d556f3286308/1?pq-origsite=gscholar&cbl=1816335)”published inFar **East Journal of Electronics and Communications -2016/6/1-Volume 16**
* Paper titled “Hybrid approximate logic for field programmable custom design” published in**SSRG:International journal of Electronics and Communication Engineering** ISSN:2348-8549, Vol 3, Issue 12, PP 119-123. Nov 16.
* Paper titled “An efficient fault mitigating processor using low cost” published in**SSRG:International journal of Electronics and Communication Engineering** ISSN:2348-8549, Special Issue,     page    105-111. Nov 16

**International Conference**

* Paper titled”Care Taking of Patients Using UTLP” published in International Conference on ICATS 2017, Paavai Engineering College ,Namakkal,during 17th and 18th March 2017.
* Paper titled”Smart Domestic Payment System” published in International Conference on ICESIC 17, Selvam College of Technology ,Namakkal,during 9th and 10th March 2017.
* Paper titled”An Efficient Fault Mitigating Processor using Low Cost TPG” published in International Conference on ICEJ 2017, AdithyaInstitute of Technology ,Coimbatore,during 24th March 2017.
* Paper titled”Hybrid Approximate Logic for Field Programmable Custom Design” published in International Conference on ICEJ 2017, Adithya Institute of Technology ,Coimbatore,during 24th March 2017.
* Paper titled “MicrostructureAnalaysis and Enchancement of Nodular Cast Iron using Image Processing”published in International Conference on ICEECE 2015,Vivekanandha college of Engineering for Women,Triuchengode,during11 and 12th March 2015 .
* Paper titled “Fault Detection and Diagnosis Method Using BIST Structure in SRM Based FPGAS”published in International Conference on ICEECE 2015,Vivekanandha college of Engineering for Women,Triuchengode,during11 and 12th March 2015 .
* Paper titled”Automatic Irrigation Control System for Efficient use of Water Resources by using Android Mobile”published in International Conference on ICFTEE 2015, Thiruvalluvar College of Engineering and Technology ,Vandavasi,during 7th and 8th March 2015 .
* Paper titled “Quantification of the Microstructures of Cast Iron usingMathematicalMorphology”published in International Conference on Mechanics,Simulation and Control ICMSC-2013,IT Society of India ,Bangalore.
* Paper titled “Advanced Secure System for MANET” published in International Conference, held at Paavai Engineering College, Namakkal, during 09th and 10th May 2014.
* Paper titled “Moving Object Tracking Using Dynamic Thresholding and its Parametric Evaluation” published in International Conference, held at Paavai Engineering College, Namakkal,during09th and 10th May 2014.
* Paper titled “A Dynamic Threshold Approach for Video Object Extraction” published in International Conference, held at Tamizhan College of Engineering and Technology,during19 to 20th February 2014
* Paper titled “Video Object Extraction Based on Dynamic Threshold Approach” published in International Conference, held at Sri Ganesh School of Business Management, Salem during 25.02.2014.
* Paper titled “Safe Transportation Using Intelligent Transport Systems” published in International Conference,held at Aishwarya College of Engineering and Technology ,during 12.02.2014.
* Paper titled “Quantification of the Microstructure of Cast Iron using Mathematical Morphology” published in International Conference,held at IT Society of India,during24th March 2013.
* Paper titled “Enhanced Surface Evaluation of Cast Iron using Machine Vision” published in National Conference,held at Muthayammal College of Engineering, Namakkal,during05 to 06th April 2013.
* Paper titled “Luminance Compression Techniques for Local Tone Mapping” published in National Conference, held at Selvam College of Technology, Namakkal,during15 to 16th March 2013.
* Paper titled”Touch Screen based Restaurant Ordering Billing and Serviing system Using ARM Processor”published in National Conference on NCISE 2014, AarupadaiVeedi Institute of Technology,Paiyanoor during 18th and 19th Dec 2014

**Award Received**

**Best Scientst Award** from Indian Academic Research Association on April 21st 2018 atTrichy.(<http://pec.paavai.edu.in/Department/ECE/Thrust.aspx>)

**Seminars/Conference/Symposium/ Workshop/FDP Organized**

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Name of the Seminars/ Conference** | **Name of the Sponsors** |
| 1 | Embedded Systems-workshop | ESCI&Paavai Engineering College |
| 2 | Artifical Intelligence in Video Image Processing for Warfare Application. | DRDO&Paavai Engineering College |
| 3 | ATMEL Microcontroller in Embedded Design. | Paavai Engineering College |
| 4 | Signal and Systems | MHRD,Delhi |

**Guest Lecture /Resource Person**

|  |  |  |
| --- | --- | --- |
| **S. No.** | **Name of the Title/ Conference** | **Name of the College** |
| 1 | ATMEL Microcontroller in Embedded Design | Deoartment of ECE  Paavai Engineering College |
| 2 | PLC&Microcontroller. | Department of Mechtronics  Paavai Engineering College |
| 3 | Challenges in Hardware interfacing in ARM Processor | MTLC  Paavai Engineering College  <http://pec.paavai.edu.in/Department>  /ECE/Associationactivities.aspx |
| 4 | Microprocesor and Microcontroller | Department of EEE  Paavai College Engineering |

**Grants Received**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **S. No.** | **Name of the coordinator** | **Title of the Proposal** | **Name of the Scheme** | **Name of Agencies** | **Grant amount & Date of sanctioned** | **Duration & Year** |
| 1 | V.Sakthivel | Real Time Embedded Systems Lab | MODROBS  <http://pec.paavai.edu.in/Department/ECE/Funding.aspx> | AICTE | Rs 3,66,800 | 2017-2018 |

**Certificate Courses Completed**

* Business English Certificate – Level 2,Organised by **Cambridge University, England**.
* **Govt of IndiaSmallImdustries Development Organisation Training** Course of **Diploma in Comp TV** from Nov 2003 To February 2004.

**Institution Responsibilities**

AICTE Coordinator

AICTE CII Coordinator

Major Contribution in NBA,NAAC

Board of Study Member in Autonomous

Project Coordinator of UG&PG

##### Subject Handled:

Electron Devices &Circuits

Electronic Circuits-1

Microprocessor & its Applications

Microprocessor &Microcontroller

Communication Theory

Embedded Systems

Digital Signal Processing

**Lab Handled:**

Circuit and Devices Lab

Electronics Circuit lab -1

Electronic System Device Lab

Microprocessor Lab

Digital Signal Processing Lab

Embedded System and Interfacing Lab

**Personal profile:**

Father’s name : M.Venkatachalam

Date of Birth : 20.06.1982

Sex : Male

Nationality : Indian

Permanent Address : 3/176 AB Bharathiyar Street,

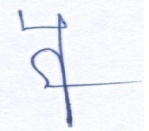
S.Papparapatty (Po),

Attayampatty(via),

Salem-Dt

Tamilnadu-637501

Declaration

I hereby declare that all the details furnished above are true to the best of my knowledge.

**Place:**

**V.Sakthivel**

**15. Brief bio-data of the Co-Principal Investigator:**

NANDHAKUMAR.G Phone no: +91-9095227169

8/9, Vandipettai, Email: nandhuedu@gmail.com

Kurukkapuram(PO),

Rasipuram(TK),

Namakkal (D.T).

CURRICULUM VITAE

Objective

To be a successful person and a leader in my discipline and to serve my organization as well as my nation, through my commitment and dedicated hard work.

Academic profile

## M.E(VLSI DESIGN) 2011-2013

Paavai Engineering College,

(Affiliated to Anna University, Chennai),

Pachal, Namakkal.

**CGPA:7.88**

## B.E (ELECTRONICS AND COMMUNICATION ENGINEERING) 2005 –2009

Muthayammal Engineering College,

(Affiliated to Anna University, Chennai),

Rasipuram, Namakkal.

Percentage: 68%

**HIGHER SECONDARY – 2005**

Vetri Vikaas Higher Secondary School,

Mallur.

**Percentage: 83%**

**S.S.L.C –2003**

Sengundhar Mahajana Higher Secondary School,

Gurusamipalayam.

**Percentage:88.8%**

Technical skills

Operating system : WINDOWS 98, 2000, XP.

Language : Basics in C, C++.

Package : Ms-Office, Matlab.

Technical Packages : MATLAB , XILINX and SCILAB

Communication : Business English Certificate – Level 1 & Level 2 Certification

Subject Handled

* Digital Electronics
* VLSI Design
* Electric Circuit Analysis
* Electron Devices
* Circuit Theory

Working Experience

* **5.6 Years** (From 26th August 2013 To Till Date**)** of teaching experience **in Paavai Engineering College,Namakkal** as an **Assistant Professor** inthe **Department of Electronics and Communication Engineering.**

Certificates

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl. No.** | **Programme** | **Duration** | | **Institution** |
| **From** | **To** |
| 1 | Digital System Design, Verification and Implementation Using FPGA | 28.09.2017 | 28.09.2017 | Kongu Engineering College,Perundurai |
| 2 | One week ISTE STTP for coordinators on CMOS, Mixed signal and Radio frequency VLSI Design | 19.9.2016 | 23.9.2016 | IIT Kharagpur |
| 3 | Wipro mission 10x – UTLP Kit training level1 | 22.02.2016 | 26.02.2016 | Wipro mission 10x center , Paavai Engineering College |
| 4 | Analysis of Signal and Image Processing Techniques for Diagnosis of Neuro and Cardiac Abnormalities | 16.10.2015 | 17.10.2015 | Kongu Engineering College,Perundurai |
| 5 | Engineering Faculty Workshop | 10.09.2014 | 12.09.2014 | Wipro Mission 10 x – Paavai Engineering College |

Paper Presentation

* Presented a paper titled ‘Performance Enhancement of FIR Filter Design’ at the National Conference which was held in Kongunadu College of Engineering & Technology, Trichy held on 13th March 2013.
* Presented a paper titled Finger Print Based Student Attendance System using GSM’ at the National Level Conference which was held in SNS College of Technology, Coimbatore, held on 16th March 2015
* Presented a paper titled‘Embedded Based Multi Account Access Using Single ATM Card’ at the International Conference which was held in Selvam College of Technology,Namakkal held on 9th and 10th March 2017.
* Presented a paper titled‘Brain Stress Analysing System’ at the International Conference organized by Paavai Engineering College on 20th and 21st April 2018.

Certificate Courses Completed

|  |  |  |  |
| --- | --- | --- | --- |
| **Sl. No.** | **Name of the Course** | **Institution** | **Duration** |
| 1 | UTLP Kit training level1 | Wipro mission 10x Technology Learning Center | 22.02.2016 to 26.02.2016 |
| 2 | SCILAB | IIT Bombay – Spoken Tutorial | January 2016 |
| 3 | Business English Certification LEVEL 1 | Cambridge University  ESOL Examination | 06 Months |
| 4 | Business English Certification LEVEL 2 | Cambridge University  ESOL Examination |

Funded Proposals Applied

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Sl. No.** | **Title of the Proposal** | **Name of Agencies** | **Grant amount & Applied Date** | **Duration** |
| 1 | National Workshop on Computational Methods for Biomedical Image Processing and Computer Vision | Indian Council of Medical Research  (ICMR) | Rs.70,000  &  13.10.2015 | 11.12.2015 and  12.12.2015 |
| 2 | National seminar on Eco-Friendly Computing and Communication Systems | Ministry of New and Renewable Energy (MNRE) | Rs. 65,000  &  7.12.2015 | 29.01.2016 and  30.01.2016 |

Key Responsibilities

* Provide Conceptual knowledge and make the students to visualize the things.
* Identify the weak points of students
* Provide extra support to weak students.
* Develop the extracurricular activities of students.
* Provide guidance to students for carrying out their project

Contribution to the Department and Institutions

* Prepared NAAC-SSR (Self Study Report) report as a team for the institution.
* Contributed for the preparation of Annexures for Autonomous Inspection and syllabus
* Prepared staff related details- Profile, Publications and workshop details for AU &

AICTE inspection.

Personal Details

Father`s Name : GOPAL.K

D.O.B : 11.02.1988

Gender : Male

Nationality : Indian

Religion : Hindu

Languages Known : English, Tamil

Declaration

I here by declare that all details stated above are true to the best of my knowledge and belief.

**Place: PEC Yours Faithfully,**

**Date : 16/02/2019**

**(G.NANDHAKUMAR)**