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(71)**Name of Applicant :**
1)Vijayalakshmi Nagarajan
Address of Applicant :ASSISTANT PROFESSOR SNS COLLEGE OF TECHNOLOGY COIMBATORE ---------- ----------
2)Mr. Babu S
3)3. Dr S Vijayan
4)4. Divya Bhavani Mohan
5)Mr.MOHANA KRISHNAN AMARNATH
6)Dr. Prithvi C
7)Abijith G R
8)Dr. M.Jagadeesh Kumar
Name of Applicant : NA
Address of Applicant : NA
(72)**Name of Inventor :**
1)Vijayalakshmi Nagarajan
Address of Applicant :ASSISTANT PROFESSOR SNS COLLEGE OF TECHNOLOGY COIMBATORE ---------- ----------
2)Mr. Babu S
Address of Applicant :Assistant Professor - Mechatronics, VELAMMAL INSTITUTE OF TECHNOLOGY. ---------- ----------
3)3. Dr S Vijayan
Address of Applicant :Assistant Professor, Mechatronics, Mechanical in Velammal Institute of Technology, Tamilnadu, India. ---------- ----------
4)4. Divya Bhavani Mohan
Address of Applicant :Assistant Professor, Unitedworld Institute of Technology, Karnavati University, Gujarat, India. ---------- ----------
5)Mr.MOHANA KRISHNAN AMARNATH
Address of Applicant :K.RAMAKRISHNAN COLLEGE OF ENGINEERING, SAMAYAPPURAM, TIRUCHIRAPALLI - 621112, TAMIL NADU ---------- ----------
6)Dr. Prithvi C
Address of Applicant :The National Institute of Engineering (South), Manadavadi Road, Vidyaranyapuram, Mysuru, Karnataka, India. 570008 ---------- ----------
7)Abijith G R
Address of Applicant :Assistant Professor, Department of Information Technology, St.Joseph's Institute of Technology, CHENNAI - 600119 ---------- ----------
8)Dr. M.Jagadeesh Kumar
Address of Applicant :Professor, Dept. of Electrical and Electronics Engineering Sri Sai Ram Institute of Technology, Chennai, Tamil Nadu 600044 ---------- ----------

(57) Abstract :
AUTOMATED HANGING CABLE RESCUE WITH REAL-TIME GPS MONITORING AND ALERTS FOR LANDSLIDE AREAS The method for the development of a complete hardware system for monitoring highway landslides in mountainous areas is created by integrating a wire-pulling trigger displacement meter, grid pluviometer, data acquisition and transmission unit, and solar power supply device. This system has been shown to be cost-effective, energy-efficient, automated, and highly effective. The software system is also designed for three-dimensional (3D) geology modeling and visualization, data inquiry and drawing, stability calculation, displacement forecasting, and real-time pre-warning. It is based on the Map and Geographic Information System (MAPGIS) platform. Additionally, pre-warning techniques based on rainfall and displacement monitoring are covered. In a research article based on coverage area and energy harvesting techniques, some known cases are also discussed, along with an analysis of cost-effective ground monitoring techniques in various landslide warning systems. In addition, the WSN architecture classifies them based on their advantages and disadvantages and assesses performance metrics like network lifetime, efficiency, reliability, and quality of service. FIG.1

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