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Authors: Omar S. Alwan, K. Prahlad Rao, Ahmed S. Balamesh

Paper Title: Dedicated Portable Real Time Multiple-Patients Monitoring System using Zigbee

Abstract: Telemetry for multiple patients monitoring has been developed as a monitoring system to monitor the status of patient’s health. Real time multiple patients monitoring system (RTMPMS) is applied in areas where real-time vital function analysis takes place. A state-of-the-art, PC and arduino based, integrated, low-cost, small, portable, low power consumption, ZigBee communication with health monitoring system and alarm system has been studied in this paper. Human’s body temperature, electrocardiogram (ECG) and heart rate information have been acquired and sent to a computer using ZigBee communication. The system in this paper will monitor three patients simultaneously by one computer through multiple Xbee transceivers. The graphical user interface (GUI) has been set up to display/store the body temperature reading, ECG data, pulse rate information in real time and patients records using LabView. The user interface has alarm system which will be activated if one parameter increased the range. The open architecture system design offers scalability, standard interfaces, flexible signal interpretation possibility and effective monitoring system. This system shows how arduino with the computer through ZigBee can be feasible in patient monitoring and patient data retrieval. Through this way, real-time remotely monitoring is achieved.

Keywords: Cost, Health Care, Real Time, RTMPMS, System, ZigBee.

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Authors: Kartinah, Dina Prasteyowati, Sutrisno, Eny Hartadiyati Waskin Haryan

Paper Title: Analysis of Mathematical Communication Ability of Junior High School Students in Learning Using Three-Dimensional Teaching Materials

Abstract: The purpose of this study was to describe the mathematical communication ability of grade VII students after they were in Mathematics learning in the classroom using media in the form of three-dimensional teaching materials. The method used in this study is a descriptive qualitative method with research subjects in grade VII students in building material that includes: Beams, Cubes, Pyramid, Prisms, Cones, Tubes, and Balls. The auxiliary instruments in this study were interview sheets, and the problem of mathematical communication test. From the results of the analysis of the answers and the results of interviews with the subjects, it can be concluded that: (1) students with high mathematical communication abilities meet all the existing indicators, namely the ability to write about stories or events in everyday life into mathematical models, the ability to explain ideas mathematically both verbally and in writing, and the ability to pour mathematical ideas into pictures; (2) students with moderate mathematical communication abilities are fulfilling two indicators from three indicators, namely: the ability to write questions about stories or events in everyday life into mathematical models, and the
ability to explain mathematical ideas orally and in writing; (3) students with low mathematical communication skills only fulfill one indicator, namely the ability to write questions about stories or events in everyday life into mathematical models.

**Keywords:** Mathematical Communication Ability, Junior High School, Teaching Material, Three Dimensional, Three Dimensional Shape

**References:**

**Authors:** Andy Vega-León, Francisco Narváez, Juan Ochoa-Aldeán

**Paper Title:** Design and Experimentation of an Energy Detector for FM Radio Signals in Cognitive Radio

**Abstract:** The present work shows the design of an energy detector, which is intended to measure the energy contained in FM radio frequency signals in the city of Loja generating prior information for the possible action of a Cognitive Radio transmission system (RC) in that band. The computer tool used to achieve the proposed design is MATLAB. For its operation and interaction with the FM electromagnetic environment, previous data derived from the spectral evaluation carried out in preliminary studies executed within the reference city are included. At the end of the work, a view of the behavior of the detector with real signals is obtained, allowing to obtain detailed data that evidences the spectral underutilization in this communication band opening possibilities of spectral optimization through RC.

**Keywords:** Spectrum, Energy, Radio, Cognitive, Frequency

**References:**

**Authors:** A. Satya Dinesh, R. Raghumatha Reddy

**Paper Title:** A Radical Study on the Effect of Tool Pin Profiles and Mechanical Properties on AA 6061 and AA 7175 Friction Stir Welded Butt Joint

**Abstract:** Friction stir welding (FSW) is a novel solid state welding process for joining metallic alloys and has emerged as an alternative technology in high strength alloys that are difficult to join with conventional techniques and which avoids bulk melting of the basic material, hot cracking and porosity. The function of FSW process are used in several industries such as aerospace, rail, automotive and marine industries for joining aluminum, magnesium and copper alloy. In aerospace industries most of the component is manufactured with aluminum material by welding process, Aluminum welding cannot be done by conventional process because temper characteristics of material will be changed. To overcome this drawback, friction stir welding process is selected. To investigate the effect of welding parameters and different tool pin profiles over Friction Stir Welding of dissimilar AA 6061 and AA 7175 and also compare single pass friction stir welding and multi pass friction stir welding. The parameters considered were tool rotation speed, welding speed, tool pin profiles, tilt angle and number of passes. Different tool pin profiles are threaded triangular, threaded cylindrical, threaded hexagonal and threaded taper pin profiles plays a vital responsibility in deciding the weld quality. This work includes tensile tests, hardness test and impact test.

**Keywords:** (FSW) The function of FSW process are used in several industries such as aerospace, rail,

**References:**