
ABSTRACTS

*doi:10.22306/am.v6i3.71**Received: 29 Apr. 2021**Revised: 08 July 2021**Accepted: 02 Aug. 2021***IOT BASED SOIL MONITORING AND AUTOMATIC IRRIGATION
SYSTEM IN THE RURAL AREA OF BANGLADESH**

(pages 29-40)

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District, Taipei, Taiwan**Hamidur Rahman**ADLO, Jessore, Ministry of Fisheries and Livestock, Department of Livestock, Mulungushi House, P O Box 50060,
Lusaka, Bangladesh**Keywords:** IOT, WSN, automatic control, automation in agriculture, arduino, NodeMCU, ESP8266**Abstract:** To serve the humanity nowadays technology is playing a wonderful role and a man's basic and primary need is food indeed. It can be said that about more than 85% of people of Bangladesh are directly, indirectly depended on agriculture. Proper irrigation by water pump cannot be maintained due to frequent power outages, unavailability of grid lines in remote areas and scarcity/cost of fuel to run pumps. To make the sustainable irrigation system and field monitoring system for getting better crops growth as well as best production, this IOT based Automatic irrigation system is proposed. In this system IOT and WSN are used to control and monitor the irrigation system. IOT is used to obtain stored data monitoring and real time monitoring of various contents of soil. WSN is used to make a fully wireless system to make a user-friendly system to cultivate and irrigate water properly to the field. Different kinds of sensors are used. This report presents a fully automated drip irrigation system which is controlled and monitored by using "Thinkspeak Cloud Server". Temperature and the humidity content of the soil are frequently monitored. The system informs user about any abnormal conditions like less moisture content and temperature rise, even concentration of water by sending notifications through the wireless module.*doi:10.22306/am.v6i3.77**Received: 03 Aug. 2021**Revised: 28 Aug. 2021**Accepted: 09 Sep. 2021***EXPERIMENTAL VISION SYSTEM SETUP BASED ON THE SERIAL
CONFIGURATION INTERFACE**

(pages 41-44)

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Keywords: data transfer, automation, communication, camera system

Abstract: Successful SME companies see indisputable advantages in implementing and image processing of vision systems. The proposed technical solution described in this article points to the need for deploying the advanced functions of vision systems to achieve the relevant computing power in the form of CCD cameras. It is expected to be used in a real-life automated consisting of, among others, a standard industrial robot. Here the starting point of the manufacturing process is the automatic selection and detection of arbitrarily oriented objects. In addition to the above, the article aims to point out the current progress in this area and draw attention to comparative methods within advanced camera systems. The resulting topics will gradually introduce us to the field of advanced image processing, where the use of functions such as object reconstruction or property estimation is assumed.

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BRISTLED PIPE ROBOT WITH ADJUSTABLE BRISTLES

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Keywords: pipe robot, locomotion, bristle, pipe

Abstract: The bristled pipe robot moving in the pipe on the principle of friction difference is intended for locomotion in the pipe using the friction difference between the bristles and the pipe's inner wall. The robot consists of an electromagnetic linear actuator, on the frame of which the rear bristle block is attached and on its extension rod, the front bristle block is placed. The bristle blocks contain three bristle carriers and clamps. The bristles are the contact elements between the robot and the pipe's inner wall. The geometry of the bristles can be adjusted using the adjusting elements. The bristles are mounted on the robot so that the span of their free ends is greater than the inner diameter of the pipe, thus creating the desired normal and frictional force between the pipe wall and the bristle ends. The bristles are mounted at a

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mounting angle concerning the robot axis, thus creating a difference in friction between the pipe wall and the bristles as they move back and forth, resulting in a forward movement of the robot.
