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| Title | Digital Moisture Monitoring System Embedded in PIC | | |
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| Published Journal Name | 2019 International Conference on Robotics, Electrical and Signal Processing Techniques (ICREST) | | |
| Type of Publication | Conference | | |
| Volume | N/A | Issue | N/A |
| Publisher | IEEE | | |
| Publication Date | 2019/1/10 | | |
| ISSN | N/A | | |
| DOI | [Digital Moisture Monitoring System Embedded in PIC | IEEE Conference Publication | IEEE Xplore](https://ieeexplore.ieee.org/abstract/document/8644305) | | |
| URL | [Digital Moisture Monitoring System Embedded in PIC | IEEE Conference Publication | IEEE Xplore](https://ieeexplore.ieee.org/abstract/document/8644305) | | |
| Other Related Info. | Pages 592-597 | | |
| **Keywords: Please write keywords here separated by comma (,)** | | | |
| Citation: Nahid, M. M. H., Zahid, A., & Abdullah, A. (2019, January). Digital Moisture Monitoring System Embedded in PIC. In *2019 International Conference on Robotics, Electrical and Signal Processing Techniques (ICREST)* (pp. 592-597). IEEE. | | | |

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| Abstract |  |
| Digitalization in agriculture can eliminate many malicious effects in the agricultural industry and reduce uncertainty due to the uncertainty in weather and complex agriculture system. This study designs a PIC based web-service oriented architecture to achieve achieves more flexibility, affordability as well as usability through adapting the Web services and PIC based Sensor integrated with GSM/GPRS based mobile application model to take progressive data of temperature, level of soil moisture, photo taken from the harvest field and renders these data into a web server to produce report for farmers or agriculture experts through android devices. These data are then stored in the web server as per date and time. Besides, the ratio of soil moisture in a specific area is calculated and displayed in a graph in the web page. Moreover, an android application "Smart Agriculture BD" has been constructed to incorporate the field images along with other data in the web server. In order to collect the data for the humidity of soil grove-moisture sensor, a temperature sensor for calculating temperature, android app for retrieving collected images and SIM900A kit (GSM/GPRS module) has been integrated with PIC Microcontroller 16f877A to forward the data to a web server for immediate use. Henceforth, a user can predict the field condition by manipulating the data and take the imperative decision to overcome any detrimental effect on crops due to nature. | |

**Please specify which Sustainable Development Goal (SDG) (s) falls under your research:**

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| Goal 1 | No Poverty | Goal 2 | Zero Hunger |
| Goal 3 | Good Health and Well-Being | Goal 4 | Quality Education |
| Goal 5 | Gender Equality | Goal 6 | Clean Water and Sanitation |
| Goal 7 | Affordable and Clean Energy | Goal 8 | Decent Work and Economic Growth |
| Checkmark PNG, Checkmark Transparent Background - FreeIconsPNGGoal 9 | Industry, Innovation and Infrastructure | Goal 10 | Reduced Inequalities |
| Goal 11 | Sustainable Cities and Communities | Goal 12 | Responsible Consumption and Production |
| Goal 13 | Climate Action | Goal 14 | Life below Water |
| Goal 15 | Life on Land | Goal 16 | Peace, Justice and Strong Institutions |
| Goal 17 | Partnerships for the Goals |  |  |