



Document details

< Back to results | 1 of 1

↗ Export ↴ Download 🖨 Print ✉ E-mail 📄 Save to PDF ☆ Add to List More... >

[Full Text](#) View at Publisher

Journal of Physics: Conference Series
Volume 1502, Issue 1, 17 June 2020, Article number 012020
International Conference on Telecommunication, Electronic and Computer Engineering 2019, ICTEC 2019; Melaka; Malaysia; 22 October 2019 through 24 October 2019; Code 161293

IoT based water quality monitoring system for aquaponics (Conference Paper)

([Open Access](#))

Farhan Mohd Pu'Ad, M.^a, Azami Sidek, K.^a, Mel, M.^b

^aDepartment of Electrical and Computer Engineering, Faculty of Engineering, International Islamic University Malaysia, Gombak, Malaysia

^bDepartment of Biotechnology Engineering, Faculty of Engineering, International Islamic University Malaysia, Gombak, Malaysia

Abstract

↕ View references (10)

Most tasks can be done remotely nowadays with the help of the Internet of Things (IoT). IoT can also be applied in the agriculture sector such as aquaponics where water quality is crucial to be kept track at all time to avoid loss of resources. Personnel used for water quality checking on-site is becoming less practical for the technologies available today. Remote monitoring system using IoT is essential for water quality monitoring. However, the lack of attention was given by local farmers for applying it in aquaponics. In this study, an IoT based water quality monitoring system for aquaponics was developed to shift from monitoring water quality on-site to remote monitoring via the Internet. Several open-source software was used in developing the monitoring system. The system covers a web server which is accessible via the Internet for user convenience today. Several tests were carried out on aquaponics in the Malaysian Institute of Sustainable Agriculture (MISA). The result shows that the system can display measurements over time and alert users via the dashboard. Other than that, observation indicates that the reporting system is stable and reliable to be used in an aquaponics system. © 2020 IOP Publishing Ltd. All rights reserved.

SciVal Topic Prominence ⓘ

Topic: Aquaponics | Fish Waste | Hydroponics

Prominence percentile: 92.593 ⓘ

Indexed keywords

Engineering controlled terms:

Agricultural robots Agriculture Internet of things Open source software Open systems Remote control Water quality

Engineering uncontrolled terms

Agriculture sectors Display measurement Internet of thing (IOT) Monitoring water quality Remote monitoring system Sustainable agriculture Water quality monitoring Water quality monitoring systems

Engineering main heading:

Monitoring

Metrics ⓘ View all metrics >



PlumX Metrics

Usage, Captures, Mentions, Social Media and Citations beyond Scopus.

Cited by 0 documents

Inform me when this document is cited in Scopus:

[Set citation alert >](#)

[Set citation feed >](#)

Related documents

Automated aquaponics maintenance system

Farhan Mohd Pu'Ad, M., Azami Sidek, K., Mel, M. (2020) *Journal of Physics: Conference Series*

Portable water quality monitoring system for aquaponics using we MOS

Mohd Pu'Ad, M.F., Sidek, K.A., Mel, M. (2019) *International Journal of Innovative Technology and Exploring Engineering*

Leveraging Internet of Things within the military network environment - Challenges and solutions

Tortonesi, M., Morelli, A., Govoni, M. (2017) *2016 IEEE 3rd World Forum on Internet of Things, WF-IoT 2016*

View all related documents based on references

Find more related documents in Scopus based on:

Authors > Keywords >

Funding details

Funding sponsor	Funding number	Acronym
International Islamic University Malaysia		IIUM

Funding text

This work was funded by the Publication – Research Initiative Grant Scheme (P-RIGS) 2018 (Project ID: P-RIGS19-013-0013) from the International Islamic University Malaysia. We would like to thank the Malaysian Institute of Sustainable Agriculture (MISA) for providing facilities for testing our system in this project.

ISSN: 17426588

Source Type: Conference Proceeding

Original language: English

DOI: 10.1088/1742-6596/1502/1/012020

Document Type: Conference Paper

Sponsors: ET Supply and Services, Keysight Technologies, Sabah Net, Tekmark, UTeMASA

Publisher: Institute of Physics Publishing

References (10)

[View in search results format >](#)

All Export Print E-mail Save to PDF Create bibliography

- 1 Al-Fuqaha, A., Guizani, M., Mohammadi, M., Aledhari, M., Ayyash, M.
Internet of Things: A Survey on Enabling Technologies, Protocols, and Applications
 (2015) *IEEE Communications Surveys and Tutorials*, 17 (4), pp. 2347-2376. Cited 2820 times.
<http://ieeexplore.ieee.org/xpl/RecentIssue.jsp?punumber=9739>
 doi: 10.1109/COMST.2015.2444095
[View at Publisher](#)

- 2 Stankovic, J.A.
Research directions for the internet of things
 (2014) *IEEE Internet of Things Journal*, 1 (1), art. no. 6774858, pp. 3-9. Cited 968 times.
<http://ieeexplore.ieee.org/servlet/opac?punumber=6488907>
 doi: 10.1109/JIOT.2014.2312291
[View at Publisher](#)

- 3 Pereira, L.S.
Water, Agriculture and Food: Challenges and Issues
 (2017) *Water Resources Management*, 31 (10), pp. 2985-2999. Cited 34 times.
www.wkap.nl/journalhome.htm/0920-4741
 doi: 10.1007/s11269-017-1664-z
[View at Publisher](#)

- 4 Rakocy, J.E.
Aquaponics-Integrating Fish and Plant Culture
 (2012) *Aquaculture Production Systems*, pp. 344-386. Cited 55 times.
<http://onlinelibrary.wiley.com/book/10.1002/9781118250105>
 ISBN: 978-081380126-1
 doi: 10.1002/9781118250105.ch14
[View at Publisher](#)

- 5 Goddek, S., Delaide, B., Mankasingh, U., Ragnarsdottir, K.V., Jijakli, H., Thorarinsdottir, R.
Challenges of sustainable and commercial aquaponics (Open Access)
 (2015) *Sustainability (Switzerland)*, 7 (4), pp. 4199-4224. Cited 112 times.
<http://www.mdpi.com/2071-1050/7/4/4199/pdf>
 doi: 10.3390/su7044199
[View at Publisher](#)

□ 6 Daigavane, V.V., Gaikwad, M.A.
Water Quality Monitoring System Based on IOT
(2017) *Department Electronics & Telecommunication Engineering, Advances in Wireless and Mobile Communications*, 10, pp. 1107-1116. Cited 18 times.

□ 7 Vijayakumar, N., Ramya, A.R.
(2015) *2015 International Conference on Innovations in Information, Embedded and Communication Systems (ICIIECS)*, pp. 1-5. Cited 2 times.

□ 8 Pavana, N.R., Padma, M.C.
(2016) *Design of Low Cost System for Real Time Monitoring of Water Quality Parameters in IoT Environment*

□ 9 Chandrappa, S., Dharmanna, L., Uv, S.S.B., Sudeeksha, C.M., Suraksha, M.N., Thrupthi, S.
Design and Development of IoT Device to Measure Quality of Water
(2017) *International Journal of Modern Education and Computer Science*, 9 (4), p. 50. Cited 4 times.

□ 10 Ismail, B.I., Mostajeran Goortani, E., Ab Karim, M.B., Ming Tat, W., Setapa, S., Luke, J.Y., Hong Hoe, O.
Evaluation of Docker as Edge computing platform
(2015) *ICOS 2015 - 2015 IEEE Conference on Open Systems*, art. no. 7377291, pp. 130-135. Cited 102 times.
ISBN: 978-146739434-5
doi: 10.1109/ICOS.2015.7377291
[View at Publisher](#)

© Copyright 2020 Elsevier B.V., All rights reserved.

< Back to results | 1 of 1

^ Top of page

About Scopus

[What is Scopus](#)
[Content coverage](#)
[Scopus blog](#)
[Scopus API](#)
[Privacy matters](#)

Language

[日本語に切り替える](#)
[切换到简体中文](#)
[切换到繁體中文](#)
[Русский язык](#)

Customer Service

[Help](#)
[Contact us](#)

ELSEVIER

[Terms and conditions](#) ↗ [Privacy policy](#) ↗

Copyright © Elsevier B.V. All rights reserved. Scopus® is a registered trademark of Elsevier B.V.

We use cookies to help provide and enhance our service and tailor content. By continuing, you agree to the use of cookies.

 RELX