Submissions Being Processed for Author

Page: 1 of 1 (1 total submissions) Results per page

Action	Manuscript Number	Title	Initial Date Submitted	Status Date	Current Status
View Submission View Reference Checking Results Send E-mail	SEPPUR-D-24-11475	Photocatalytic volarization and cleaning of lignin coating on PVDF hollow fiber membranes for oil-water separation	Sep 13, 2024	Oct 18, 2024	Under Review

Page: 1 of 1 (1 total submissions) Results per page

Outlook

[JK] Submission Acknowledgement

From Farhana Mohd Foudzi <jkej@ukm.edu.my>
Date Wed 14/8/2024 7:04 PM
To Leo Choe Peng <chcpleo@usm.my>

Assoc. Prof. Dr. Leo Choe Peng:

Thank you for submitting the manuscript, "Water Filter using Lignin/CaCO3 Coated Membrane Integrated with UV Deactivation of Water Pathogen" to Jurnal Kejuruteraan (Journal of Engineering). With the online journal management system that we are using, you will be able to track its progress through the editorial process by logging in to the journal web site:

Manuscript URL: http://ejournal.ukm.my/jkukm/author/submission/77289
Username: lchoepeng

Please take note that starting 2024, Jurnal Kejuruteraan has begun implementing Article Processing Charge (APC) for all accepted manuscripts.

Regular Issue: RM500 (Local) / USD150 (International)

Please take note that the APC is based on main corresponding author's affiliation.

If you have any questions, please contact Jurnal Kejuruteraan at jkej@ukm.edu.my
Thank you for considering this journal as a venue for your work.

Farhana Mohd Foudzi
Jurnal Kejuruteraan (Journal of Engineering)

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Jurnal Kejuruteraan (Journal of Engineering)
http://www.ukm.my/jkukm

ICT Virtual Organization of ASEAN Institutes and NICT

(ASEAN IVO)

Abstract Submission Form: ASEAN IVO Forum 2024

I. Title of presentation

ICT-Driven Water Quality Monitoring Systems: Enhancing precision and connectivity in environmental assessment

II. Name and Institution

Dr. Kok Hwa Yu
Universiti Sains Malaysia

III. Abstract

Background

Water is an essential resource that sustains all forms of life and plays a pivotal role in agriculture, industry, and ecosystem balance. As global water demand continues to rise, ensuring access to clean and safe water is a critical challenge, especially in the face of pollution, climate change, and resource depletion. Effective water quality monitoring systems are indispensable for safeguarding public health, supporting sustainable water management, and protecting aquatic ecosystems. Modern water monitoring technologies, particularly those utilizing Information and Communication Technology (ICT), offer real-time data collection and analysis, enabling timely interventions to address contamination and degradation.

Water quality measurement extracts water quality parameter from the water to determine its water quality. Some example for these water quality parameters are turbidity, pH, total dissolved solid (TDS), dissolved oxygen (DO), electrical conductivity (EC), etc. For instance, turbidity plays a significant role in water quality assessment, environmental monitoring, and aquatic ecosystem management. First, turbidity serves as an essential indicator of water quality. High turbidity levels are often associated with increased levels of suspended solids, including sediment, organic matter, and pollutants. Monitoring turbidity provides valuable information about the presence of particulate matter and the potential for contaminants in water bodies. It helps identify sources of pollution, assess the efficiency of water treatment processes, and guide management strategies for maintaining water quality. In addition, turbidity has significant implications for aquatic ecosystems. High turbidity can limit the penetration of sunlight into the water, affecting the photosynthesis process of aquatic plants and reducing primary productivity. Reduced light availability can also disrupt the

growth and survival of submerged vegetation, which serves as a vital habitat for many aquatic organisms. Changes in turbidity levels can impact the distribution and abundance of fish, invertebrates, and other aquatic species, potentially altering the ecological balance of aquatic ecosystems. More importantly, Excessive turbidity in water can pose risks to human health. High turbidity levels can interfere with disinfection processes, such as chlorination, by shielding microorganisms from the disinfectant and reducing its effectiveness. Turbidity can also indicate the presence of pathogens, such as bacteria and viruses, which can cause waterborne diseases. Proper monitoring and control of turbidity are crucial for ensuring safe drinking water supplies and effective water treatment.

While the integration of Internet of Things (IoT) sensors has transformed water monitoring systems by enabling real-time data collection, certain limitations in precision and efficiency hinder their full potential. IoT sensors are susceptible to environmental factors such as temperature fluctuations, sedimentation, and biofouling, which can compromise their accuracy in detecting water quality parameters like pH, turbidity, dissolved oxygen, and contamination levels. These inaccuracies can result in false readings or delayed detection of critical water quality issues. In addition to the lack of precision of the IoT-based system, employment of the water monitoring system in remote area often face system connectivity issue, impacting the performance, reliability, and scalability of the system.

Objectives

The project objectives are stated as follows

1. To enhance and improve the precision and performance of the IoT-based system through machine learning calibration.
2. To improve data connectivity in the system in remote area environment using D2D technology.

Panned for connected projects

The outcome of this project would be beneficial for several research and application fields which can be funded by several international and national grants.

Application of UK Research and Innovation grant: Towards Sustainable and Resilient Aquaculture in Malaysia and Vietnam: A Holistic Approach Incorporating Digital Innovations – AQSURENCE. This project focuses on the application on the usage of ICT in aquaculture industries in Malaysia and Vietnam,

pertaining to the mud crab breeding. The improved water quality monitoring system would help to ease the decision making on mud crab breeding and reduce the mortality rate of mud crab.

Application of Royal Academy of Engineering grant: The application of this grant will focus running program that support technical training for aquaculture workers and other stakeholder in adopting the usage of ICT.

Application of Public-Private Research Network 2.0 grant: This project will focus on more precise monitoring, control, and automation of critical parameters that impact fish health and breeding success.

Outlook

[ICSPCS 2024] #1571044598 has been uploaded

From EDAS Conference Manager <help@edas.info>
on behalf of
twysocki2=unl.edu@edas.info <twysocki2=unl.edu@edas.info>

Date Tue 8/10/2024 11:01 AM

To Huan-Bang nict <lee@nict.go.jp>; Takeshi Matsumura <matsumura@nict.go.jp>; Leo Choe Peng <chcpleo@usm.my>; Yu Kok Hwa <yukokhwa@usm.my>; Yen Kin Sam <meyks@usm.my>

Dear Dr. Huan-Bang Li:

Thank you for uploading your final manuscript for paper 1571044598 (*Development and Deployment of a Distributed D2D System for Supporting Water Quality Monitoring*) to **2024 17th International Conference on Signal Processing and Communication System (ICSPCS)**. The paper is of type application/pdf and has a length of 516958 bytes.

You can modify your paper at 1571044598 and see all your submissions at https://edas.info/index.php?c=31833 using the EDAS identifier lee@nict.go.jp

Regards,
Dr Tadeusz A Wysocki
TPC Chair, ICSPCS'2024

Choe Peng Leo

Applications

Application	Opportunity	Lead organisation	Your role	Deadline	Status
APP40610: Towards Sustainable and Resilient Aquaculture in Malaysia and Vietnam: A Holistic Approach Incorporating Digital Innovations - AQSURENCE (/applications/APP40610)	OPP445: Sustainable and Resilient Aquaculture Systems in Southeast Asia	University of West London	Project co-lead (international)	**9 May 2024** Deadline passed	**RESPONSE SUBMITTED**
APP32669: Towards Sustainable and Resilient Aquaculture in Malaysia and Vietnam: A Holistic Approach Incorporating Digital Innovations (AQSURENCE) Project lead: Luiza Campos	OPP445: Sustainable and Resilient Aquaculture Systems in Southeast Asia	University College London	Project co-lead (international)	**9 May 2024** Deadline passed	**MISSED DEADLINE**

Outlook

PATENT SEARCH REPORT : TREATMENT OF LIGNIN-COATED MEMBRANE USING PHOTOCATALYSTS FOR REUSE

From hartini alias <hartinialias@gmail.com>
Date Thu 8/8/2024 10:21 AM
To Leo Choe Peng <chcpleo@usm.my>
Cc Muaz Mohd Zaini Makhtar <muazzaini@usm.my>; Khairul Syahmi Brahim <ksyahmi@usm.my>; Hartini Alias <hartini_alias@usm.my>; innovations_ip <innovations_ip@usm.my>; Muhammad Hanif Hisham <hanifhisham@usm.my>

3 attachments (6 MB)
08.2024_8894 usm nsr.pdf; 08.2024_8894 usm nsr cover letter.pdf; Prior art.zip;

Assalamualaikum Dr.,

Patent Search Report: "TREATMENT OF LIGNIN-COATED MEMBRANE USING PHOTOCATALYSTS FOR REUSE"

Please find attached the patent search report for your invention.
Based on the search results, the present invention comprises elements of **novelty, inventive step and industrial applicability.**
Therefore, we will invite you to present to our IP Committee for approval later.

Alo, kindly take into consideration the agent's suggestion to further support the inventiveness of your invention.

Thank you.

Kindly acknowledge receipt of this email.

"MALAYSIA MADANI"
"BERKHIDMAT UNTUK NEGARA"

Saya yang menjalankan amanah,

--
HARTINI ALIAS
Pusat Inovasi & Perundingan
(*Centre for Innovation & Consultation*)
Universiti Sains Malaysia
Tel. : 04-653 6530
Email : hartinialias@gmail.com / hartini_alias@usm.my

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Innovations & Commercialization Office
Division of Research and Innovation,
Chancellery II, Block E42,
Universiti Sains Malaysia,
11800 USM, Penang,
Malaysia.

Attn: **Ms. Hartini / Assoc. Prof. Ir. Dr. Leo Choe Peng** By Email and Post

Dear Sir/Madam,

PATENT NOVELTY SEARCH REPORT
INVENTOR : ASSOC. PROF. IR. DR. LEO CHOE PENG
APPLICANT : UNIVERSITI SAINS MALAYSIA
INVENTION : TREATMENT OF LIGNIN-COATED MEMBRANE USING PHOTOCATALYSTS FOR REUSE

1. We refer to the above matter. We are pleased to inform you that the novelty search report pertaining to the aforesaid title has been completed.

2. We enclose herewith the novelty search report along with the remarks concluding the 3 criteria for patentability of the invention, as follows:

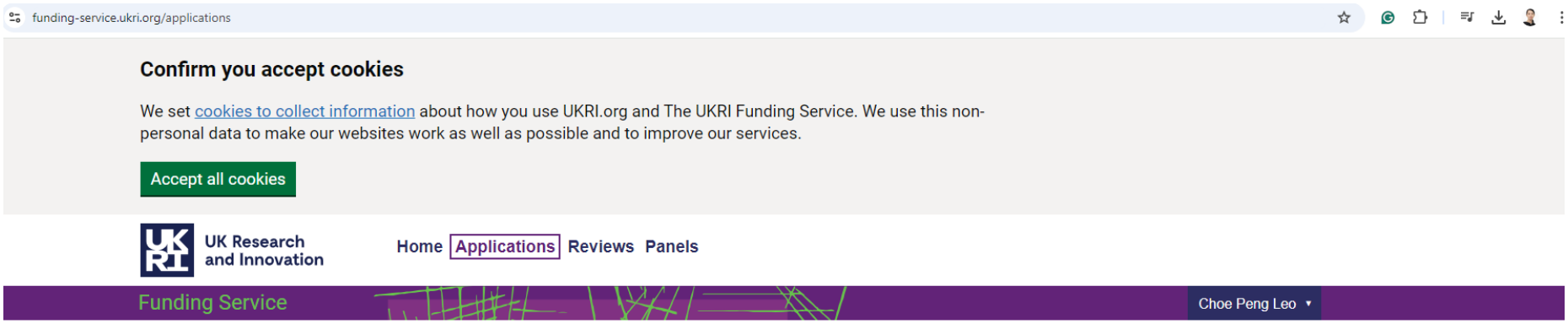
   a) The IP essentiality of the proposed invention relates to a method for treating or removing lignin-coated membranes by utilizing a photocatalyst in combination with light to enhance the properties of lignin-coated membrane, and thereafter, removing the lignin coating through the photocatalytic treatment for reuse purposes. This method involves immersing the lignin-coated membrane into a photocatalyst suspension, exposing it to a light source to activate the photocatalyst, and optionally applying an external electric field to further enhance the treatment process. Furthermore, for reuse purposes, the photocatalytic treatment is extended to remove the lignin coating from the membrane and replace with new lignin coating. By using the photocatalytic treatment, it will effectively degrade the lignin coating and improve the membrane properties such as hydrophilicity, permeability, and resistance to fouling.
   b) The propose invention may be deemed novel in view that none of the found prior art discloses an identical method.
   c) The proposed invention teaches treating a lignin-coated PVDF membrane using photocatalyst comprising: providing a PVDF membrane coated with lignin; immersing the lignin-coated membrane into a photocatalyst suspension in which the photocatalyst suspension comprises a photocatalyst dispersed in a solvent. After immersing the lignin-coated membrane into a photocatalyst suspension, the immerses lignin-coated membrane is further exposed to a light source to activate the photocatalyst and optionally, applied an external electric field to enhance the photocatalytic treatment. Moreover, the photocatalytic treatment is extended to remove the lignin coating from the membrane and replace with new lignin coating. This represents as a technical advantage of the proposed invention. Furthermore, the proposed invention is not obvious in light of the found prior art. Therefore, the proposed invention may be deemed inventive,
   d) The proposed invention meets the industrial applicability requirement as it can be employed in poultry industry.

3. The inventor may provide the followings to <u>further enhance the inventiveness</u>:
   a) Please provide separate step-by-step process for treating the lignin-coated membrane and separating the lignin-coated membrane.
   b) Please provide comparison of experimental results in between the proposed invention with the conventional method that does not use photocatalytic reaction for treating and removing the lignin-coated membrane (in terms of membrane properties such as hydrophilicity, permeability, and resistance to fouling).
   c) Please explain how does one control the treatment of lignin-based coating without causing removal (e.g. working parameters to achieve a certain permeability and working parameters to remove the membrane)

4. Should you wish to proceed for drafting of the afore-mentioned invention, please reply with an email instruction.

Yours faithfully,
PINTAS CONSULTING GROUP SDN BHD

LOK CHOON HONG
Director



Choe Peng Leo

Applications

Application	Opportunity	Lead organisation	Your role	Deadline	Status
APP40610: Towards Sustainable and Resilient Aquaculture in Malaysia and Vietnam: A Holistic Approach Incorporating Digital Innovations - AQSURENCE	OPP445: Sustainable and Resilient Aquaculture Systems in Southeast Asia	University of West London	Project co-lead (international)	**9 May 2024** Deadline passed	RESPONSE SUBMITTED