

#### **EDITOR-IN-CHIEF**

Professor Dr. Wanida Jinsart Department of Environmental Science Faculty of Science, Chulalongkorn University Phayatai Rd. Bangkok, Thailand environmentasiaj@gmail.com

### HONORABLE CONSULTING EDITORS

Professor Dr. Rob Mars, *University of Liverpool, UK* Professor Dr. Chongrak Polprasert, *Thammasart University, Thailand* 

#### ASSOCIATE EDITORS

Associate Professor Dr. Jaroon Jakmunee, Chiang Mai University, Thailand Associate Professor Dr. Racha Chaichana, Kasetsart University, Thailand Assistant Professor Dr. Panwadee Suwattiga, King Mongkut's University of Technology North Bangkok, Thailand Lt. col. Assistant Professor Dr. Kittiphop Promdee, Chulachomklao Royal Military Academy, Thailand Assistant Professor Dr. Peerapong Pornwongthong, King Mongkut's University of Technology North Bangkok, Thailand Dr. Sumeth Wongkiew, Chulalongkorn University, Thailand

#### **EDITORIAL BOARD**

Professor Dr. Steven W. Edwards, University of Liverpool, UK Dr. Sarah Clement, University of Liverpool, UK Professor Dr. Mark Morgan, Missouri University, USA Professor Dr. Tan Shan Hwai, University of Science Malaysia, Malaysia Professor Dr. Chitsan Lin, National Kaohsiung Marine University, Taiwan Associate Professor Dr. Akihiko Terada, Tokyo University of Agriculture and Technology Japan Professor Dr. Akira Kondo, Osaka University, Japan Professor Dr. Okamoto Shin'ichi, Tokyo University of Information Sciences, Japan Professor Dr. Eiji Yano, Teikyo University, Japan Professor Dr. Masami Furuuchi, Kanazawa University, Japan Dr. Wei-Qin Zhang, University of Auckland, New Zealand Professor Dr. Sompong Doolgindachabaporn, Khon Kaen University, Thailand Assistant Professor Dr. Thapat Silalertruksa, King Mongkut's University of Technology Thonburi, Thailand Assistant Professor Dr. Sittipong Dilokwanich, Mahidol University, Thailand Dr. Worradorn Phairung, Chiang Mai University, Thailand Dr. Hatairattana Gariyavech, Environmental Research and Training Center, Thailand



# TABLE OF CONTENT

<b>Evaluation of Cadmium Accumulation of Pak Choi</b> ( <i>Brassica rapa</i> sub. <i>Chinesis</i> ) <b>at Different Cadmium Concentrations and pH Levels and Health Risk Analysis</b> <i>Piyachet Jinsart, and Sumeth Wongkiew</i> 1
<b>The Effect of LDPE Microplastics on Soil Metabolic Activities</b> <b>and Microbial Community Profile</b> <i>Kwang Mo Yang, Toemthip Poolpak, and Prayad Pokethitiyook</i> 10
<b>Contribution of Primary and Secondary PM</b> <sub>2.5</sub> at a Near Road Monitoring Station in Bangkok during the 2020 COVID-19 Lockdown Preecha Panmoon, and Nares Chuersuwan
<b>2019 Emission Inventory Development in the Northern Part of Thailand</b> <i>Thanapat Jansakoo, Vanisa Surapipith, and Ronald Macatangay</i> 26
Health Risk Assessment of Workers Exposed to Particulate Matter and Heavy Metal in Industrial Waste Treatment Prayad Kenyota, and Wanida Jinsart
<b>Comparative Human-Ecotoxicological Impacts and Willingness to Pay:</b> A Case of <b>Pesticide Transition from Paraquat to Atrazine in Sweet Corn Cultivation in Thailand</b> <i>Patharanun Toolkiattiwong, Pasicha Chaikaew, and Chidsanuphong Chart-asa</i> 50
<b>Occupational Health Hazard Identification and Risk Mitigation at Engineering</b> <b>Procurement and Construction Projects: Sultanate of Oman</b> <i>Hareesh kallingal Ramakrishnan, Pallavi N., and Turenjai Doolgindachbaporn</i> 56
<b>Recycling of Piggery Effluent for</b> <i>Azolla microphylla</i> <b>Production and Application in</b> <b>Vermiculture for Enhancing Nutrients Quality and Driving BCG Economy Model</b> <i>Phearun Lay, and Chuleemas Boonthai Iwai</i>
<b>Enhancement of Titanium Dioxide by Bagasse Silica for Photocatalytic Degradation of Dyes</b> Wina Rongchapo, Krittanun Deekamwong, Narong Chanlek, Sanchai Prayoonpokarach, and Jatuporn Wittayakun
Preliminary Study of Alternative Environmentally Friendly X-ray Shielding Materials Based on Nano-bismuth (III) Oxide Coated Fabric Natcha Suriwong, Jaroon Janjaroen, Khaisang Chousangsuntorn, Supranee Kaewpirom, and Siridech Boonsang
<b>Comparison of Seedling Detection and Height Measurement Using 3D Point Cloud</b> <b>Models from Three Software Tools: Applications in Forest Restoration</b> <i>Punnat Changsalak, and Pimonrat Tiansawat</i>
Distribution of <i>Castanopsis calathiformis</i> (Skan) Rehder & E.H.Wilson Seedlings Beneath Maternal Tree Crowns in Forest Restoration Plots Sakonwan Kaewsomboon, and Sutthathorn Chairuangsri

# JOURNAL POLICY

**EnvironmentAsia** is the international journal published *triannually* by the Thai Society of Higher Education Institutes on Environment (TSHE). The Journal publishes original research and review papers preferably in English covering all areas of Environmental studies. Preference, however, is given to the papers of the following areas:

Environmental Pollution & Safety Assessment Environmental Management, Protection and Conservation Environmental Economics Environmental Engineering Public Health and Sanitation Impact assessment of Pollution and Pollutants Environmental Biology and Molecular Biology, Toxicant induced alterations in organisms General Toxicology (chronic, subchronic and acute), response to toxic agents at community, species, tissue, cellular & sub cellular levels All areas of Environmental Sciences

This Journal is an open access journal. The users have the right to read, download, copy, distribute, print, search, or link to the full texts of these articles.

Paper should submitted in English. The journal will not accept articles, which have been published or are being considered for publication by another journal, nor should papers published here be submitted to other journals. Authors need not be members of the TSHE. Manuscripts must conform to the guidelines given below.

All the papers published in the Journal, are reviewed by a group of referees for their scientific merit. Manuscript decisions are solely based on the results of peer reviews, and to eliminate bias reviewers receive manuscript with blind title page. The journal, published both as hard-copies, available by subscription and freely available on the web at http://www.tshe.org/EA Views expressed by contributors are not necessarily those of the TSHE.

# **INSTRUCTIONS FOR AUTHOR**

The Journal publishes Research Papers (not exceeding 4000 words,) and Reviews (not exceeding 5000 words). The manuscript should not exceed 16 B5 pages (with top and bottom margin of 1 cm, left margin of 2.5 cm, right margin of 2 cm, and spacing between column of 0.5 cm).

## 1. Manuscript Preparation

Manuscript should be prepared strictly as per guidelines given below.

**Manuscript** should contain the Title followed by Author name(s), Author(s) affiliations, Abstract (about 200 words), 4-5 Keywords and Text proper.

Title should be concised and typed in single column Times New Roman 14 Bold

Author Name(s) Times New Roman 12

Affiliation(s) Times New Roman 12 Italic

Abstract should be in single column and indicate the significant findings with data / data-range and conclusions of the paper. Times New Roman 12

**Keywords** should be in single column and adequately index the subject matter. Times New Roman 12, separate each word with semicolon **Text proper** should be typed in *single column and subdivided into sections*: Introduction, Materials and Methods, Results and Discussion, Acknowledgements and References/Bibliographies. The title of each section Times New Roman 12 Bold. Subtitle Times New Roman 12 Italic.

- **Introduction** (Times New Roman 12) should include precisely the aims of the study. It should be as concise as possible with no sub headings. Exhaustive reviewing of literature should be avoided, only necessary and latest ones which are required to indicate the reason for the research undertaken and the essential background should be given.
- Materials and Methods (Times New Roman 12) should be sufficiently detailed to enable the experiments to be reproduced. The techniques and methodology adopted should be supported with standard references.
- **Results and Discussion** (Times New Roman 12) should be either combined or separated. Results may be split into sub headings. Data emerging out from the study should be included, arranged in the unified and coherent sequence and should be statistically analyzed. The same data should not be presented both in Tabular and Graphic forms. Only necessary tables and figures should be given. Long confused and irrelevant discussion should be scrupulously avoided. It should deal with interpretations and the conclusions drawn, based on results and supported by relevant references. Repetition of data, statements and expressions should be curtailed.
- Acknowledgement (Times New Roman 12) should include the names of those who contributed substantially to the work described in the manuscript but do not fulfill the requirements for the authorship. It should also include sponsors/funding agency of the project of which the work described is a part.
- **References/Bibliographies** (Times New Roman 10) should be cited in the Text by the surname of the author(s), and the year. In case of more than two authors, surname of the first author followed by et al., and the year should be cited in the text. References in languages other than English must be referred to by an English translation.

In the list of references/bibliographies, full and complete references/bibliographies should be arranged alphabetically by first author's surname by author or title (where no author is given) in the Vancouver style. See examples below:

# Paper in a Journal

Bradford MM. (1976). A rapid and sensitive method for the quantitation of microgram quantities of protein using the principle of protein-dye binding. Analytical Biochemistry; 72:248-54.

Burch BH, Siegel LA. (1971). Improved method for measurement of delta-aminolevulenic acid dehydratase activity of human erythrocytes. Clinical Chemistry;17:1038-41.

Fleming DE, Chettle D, Wetmur JG, Desnick RJ, Robin JP, Boulay D, Richard NS, Gordon CL, Webber CE. (1998). Effect of the delta-aminolevulinate dehydratase polymorphism on the accumulation of lead in bone and blood in lead smelter workers. Environmental Research; 77: 49-61.

# Book

APHA. (1998). Standards Methods for examination of water and wastewater. 20th ed. APHA, AWWA, WPCF, Washington DC, USA; 135-41.

Henry JB. (1979). Clinical diagnosis and management by laboratory method. 16th ed. PA:WB Saunders Co., Philadelphia, USA; 513-15.

## Chapter in a Book

Wilkinson CF. (1990). Introduction and overview. In: The effects of pesticides on human health (Eds: Bakers SR, Wilkinson CF). Princeton Scientific Publishing Co. Inc., New Jersey, USA.; 15-20.

**Unpublished research** including online and personal communication should not be given in the Text and Reference sections. Footnotes should be avoided as far as possible.

The figures and tables must be placed at the end of the paper. Table and figure titles should be clearly demonstrated.

## 2. Manuscript Submission

**Manuscript** should be submitted by email to Editor in chief Professor Dr.Wanida Jinsart at *environmentasiaj@gmail.com*.

**Panel** nominated of two or more potential reviewers for reviewing the manuscript along with their complete contact postal addresses and email address is preferred.

Submission of manuscript to this Journal implies that it is not under consideration for publication elsewhere, its submission for publication has been approved by all the authors and the institution where the research was carried out. This journal does not charge submission, processing and publication fee.

**Publication Fee:** The publication fee is 250 USD for member and 300 USD for non-member. Once the manuscript is accepted for publication, the payment can be transferred via Paypal account "tshe2005@gmail.com".

**Plagiarism Policy:** The Journal is equipped by plagiarism detection system. Any manuscript submitted for publication in *EnvironmentAsia* is checked for plagiarism before editorial and peer reviewing processes.

# 3. Copyright

Copyright of the paper published in *EnvironmentAsia* belongs to the Thai Society of Higher Education Institutes on Environment (TSHE).

Paper and all correspondence should be addressed/submitted to: **Professor Dr.Wanida Jinsart**  *Editor in Chief, EnvironmentAsia* **Email Address: environmentasiaj@gmail.com**