

#### **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*  
Assistant Professor Dr. Turenjai Doolgindachbaporn, *Khon Kaen University, Thailand*  
Lt. col. Assistant Professor Dr. Kittiphop Promdee, *Chulachomklao Royal Military Academy, Thailand*  
Assistant Professor Dr. Ronbanchob Apiratikul, *Suan Sunandha Rajabhat University, 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, *Prince Songkhla University, Thailand*  
Dr. Hatairattana Gariyavech, *Environmental Research and Training Center, Thailand*

## TABLE OF CONTENT

<b>Driving Sustainability in Poultry Production: Technical and Economic Evaluation of Wastewater Recycling in a Commercial Poultry Hatchery</b> <i>Fachmi Azhar Aji, Dwi Nowo Martono, and Kosuke Mizuno</i> .....	1
<b>Reducing the Ecological Footprint in a University Farm Through Environmental Education Process</b> <i>Tanyalak Kerdsap, Prasong Tanpichai, and Nirun Yingyuad</i> .....	15
<b>Sustainability of Urban Watershed Management in Kendari City, Southeast Sulawesi, Indonesia</b> <i>Kahirun, La Baco Sudia, Laode Sabaruddin, and Nasaruddin</i> .....	26
<b>Greenhouse Gases Emission and Environmental Costs of Fast- Food Restaurants: A Case Study in Bangkok, Thailand</b> <i>Pongpapat Wongrattanatham, and Nittaya Pasukphun</i> .....	43
<b>Activity Recommendations Based on an Environmental Approach in Zoning of Marine Protected Areas (MAPS) Pariaman City - Indonesia</b> <i>Aprizon Putra I, Indang Dewata, Dedi Hermon, Eri Barlian, Genius Umar, Teguh Widodo, and Harfiandri Damanhuri</i> .....	57
<b>Assessment of Solar Rooftop Potential Using a Digital Surface Model Based on a Photogrammetric Survey by an Unmanned Aerial Vehicle</b> <i>Warin Wongwan, Narong Plerux, Nattapan Thanomsat, and Sitthisak Moukomla</i> .....	68
<b>Prevalence of Long Covid Condition and its Associated PM<sub>2.5</sub> Exposure</b> <i>Rajitra Nawawonganun, and Pornpun Sakunkoo</i> .....	82
<b>Indoor Carbon Dioxide Air Quality and Thermal Comfort in Primary School Classrooms of Maisan Province, Iraq</b> <i>Hasanain Shihab Ahmed, and Nayyef M. Azeez</i> .....	94
<b>Application of Modelling Tools for Air Quality Management in Giao Long Industrial Zone, Ben Tre Province, Vietnam</b> <i>Ho Minh Dung, Nguyen Quoc Bao, and Nguyen Thai Son</i> .....	104
<b>Identification of Soil Erosion Using the SWAT Model for Prioritizing Conservation Measures of Si Satchanalai Sub-Watershed in Thailand</b> <i>Banchongsak Faksomboon, Nopparat Chaivino, and Apichaya Phadpin</i> .....	117
<b>Evaluation of Surface Water Pollution from an Operation at Controlled Dumpsite: A Case Study in Samutprakarn Province, Thailand</b> <i>Nittaya Pasukphun, Tanika Tingsa, and Yanasinee Suma</i> .....	133
<b>Antimicrobial Resistance of <i>Escherichia coli</i> in Urban Gardens and Wet Markets in Two Selected Cities in Metro Manila, Philippines</b> <i>Marco Cristopher D.P. Lopez, and Pierangeli G. Vital</i> .....	146

## TABLE OF CONTENT (Cont.)

### **Microplastics Contamination in Water Supply Sources of Ping River, Chiang Mai Province, Thailand**

*Pimpawat Teeratitayangkul, Surasak Nummisri, Chan Yodle, Amnuay Wattanakornsiri, and  
Pongthipun Phuengphai*.....161

### **Efficacy of Green Papaya (*Carica papaya*) Fruit Juice Against Intestinal Parasites of Newly Weaned Male Calves**

*Sandy Sean Sidney Salazar, and Claire B. Salvedia*.....171

### **Toxic Effects of Cyclophosphamide on Male Mice Fertility Development and Body Indicators**

*Heba Thakeb Yser*.....178

## 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 be 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 concise 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 given in the following style and punctuation, arranged alphabetically by first author's surname.

### **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-aminolevulinic 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-aminolevulinic acid 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](mailto:environmentasiaj@gmail.com)**