

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 Silalerttruksa,
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

Developing Climate-Smart Agriculture Indicators for SDG 1 and Environmental Implications in Northern Thailand <i>Thatchakorn Khamkhunmuang, Kittiyut Punchay, Panomsak Promburom, and Prasit Wangpakapattanawong</i>	1
Variation and Change of Hydro-Climatological Parameters in Iraq for the Period 1980-2019 <i>Husam T. Majeed, Dalia A. Mahmood, and Zahraa S. Mahdi</i>	14
Accumulation of Microplastics in the Freshwater Shrimp, <i>Macrobrachium lanchesteri</i>, from Khwae Noi Watershed in Western Thailand <i>Sampan Tongnunui, Treerat Sooksawat, Ramil Kohkaew, Jiraporn Teampanpong, and Amnuay Wattanakornsiri</i>	25
Occurrence of Microdebris in Muscle of Round Scad (<i>Decapterus maruadsi</i>) Collected from Central Vietnam <i>Tran Thi Ai My, Nguyen Duy Dat, Hoang Thai Long, and Tran Thuc Binh</i>	38
Assessment of Saltwater Intrusion Using Geochemical Chloride Bicarbonate Ratio Method in Cagayan de Oro City, Philippines <i>Geran John T. Flores, and Gina C. Lacang</i>	48
Geochemical Assessment and Spatial Distributions of Trace Elements in the Surface Sediments of the Strait of Malacca <i>Mohamad Arif Che Abd Rahim, Shengfa Liu, Xuefa Shi, and Che Abd Rahim Mohamed</i>	58
Heavy Metal Contamination and Allicin in Shallots and Garlic in Srisaket Province, Thailand <i>Pongthipun Phuengphai, Suphapan Satchawan, Sampan Tongnunui, Tongchai Jamnongkan, and Amnuay Wattanakornsiri</i>	70
Translocation Mechanism of Lanceleaf Arrowhead (<i>Sagittaria lancifolia</i>) on Copper (Cu) and Phytoremediation Ability <i>Alfin Fatwa M Afifudin, and Rony Irawanto</i>	84
Formulation and Antioxidant Activity of Lip Balm Preparete Enriched by Bidara Leaf Extract (<i>Ziziphus spina-christi</i> L.) <i>Hendrawati, Siti Aidina, Maulidia, Nurhasni, and Yulyani Nur Azizah</i>	95
Toxicity of Indigo Dye-Contaminated Water on Silver Barbs (<i>Barbonymus gonionotus</i>) and Pathology in the Gills <i>Naiyana Senasri, Patcharawalai Sriyasak, Supanee Suwanpakdee, Nattiya Chumnanka, Pongsathorn tongkasee, and Kosit Sriputhorn</i>	106
Effect of Pesticide Exposure on the Incidence of Spontaneous Abortion in Female Farmers <i>Febri Apwanti Kusumaningtyas, Suhartono, and Onny Setiani</i>	116

Aberrant Expression of DNA Repair Genes in Lead-Exposed Human Renal Proximal Tubular Epithelial Cells

Sirirak Hemmaphan, and Narisa K. Bordeerat123

Isolation, Characterization, and Antimicrobial Resistance of *Enterococcus* sp. from Irrigation Waters in Metro Manila, Philippines

Alona Veronica B. Oliveros, and Pierangeli G. Vital.....133

Treatment of Lignin Wastewater Using Peroxydisulfate Combined with Manganese Oxide-Loaded Biochar

Glinsukol Suwannarat, Kemason Sontabam, Soraya Sawangying, and Chompoonut Chaiyaraksa.....143

Comparison of Non-acid Wash and Acid Wash Preparation Methods for Zeolite A Synthesis from Coal Fly Ash

Sirirat Jangkorn, and Pornsawai Praipipat.....152

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 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-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