

ISSN: 2152-2197      Volume 11, Number 5, May 2020



# Journal of Environmental Protection



ISSN: 2152-2197



<https://www.scirp.org/journal/jep>

# Journal Editorial Board

ISSN: 2152-2197 (Print), 2152-2219 (Online)

<https://www.scirp.org/journal/jep>

---

## Editors-in-Chief

**Prof. Thangarasu Pandiyan**  
**Prof. Qingren Wang**

National Autonomous University of Mexico (UNAM), Mexico  
University of Florida, USA

## Editorial Board

<b>Prof. Josh T. Ackerman</b>	US Geological Survey, USA
<b>Dr. Nanjappa Ashwath</b>	Central Queensland University, Australia
<b>Prof. Shuguang Deng</b>	New Mexico State University, USA
<b>Prof. Larry Eugene Erickson</b>	Kansas State University, USA
<b>Prof. Ludmila A. Golovleva</b>	Russian Academy of Sciences, Russia
<b>Prof. Chin-Pao Huang</b>	University of Delaware, USA
<b>Prof. Madan Kumar Jha</b>	Indian Institute of Technology Kharagpur, India
<b>Prof. Ganesh Raj Joshi</b>	United Nations Center for Regional Development (UNCRD), Japan
<b>Prof. Rameshwar S. Kanwar</b>	Iowa State University, USA
<b>Prof. Hyun-Joong Kim</b>	Seoul National University, South Korea
<b>Prof. Raghava R. Kommalapati</b>	Prairie View A&M University, USA
<b>Prof. Ashok Kumar</b>	University of Toledo, USA
<b>Prof. Robert Li</b>	United States Department of Agriculture-Agricultural Research Service, USA
<b>Prof. Roberto Manfredi</b>	University of Bologna, Italy
<b>Prof. Krishna Mazumdar</b>	Indian Statistical Institute, India
<b>Prof. Jiangming Mo</b>	Chinese Academy of Sciences, China
<b>Prof. Subhash C. Mojumdar</b>	University of Guelph, Canada
<b>Prof. Saied Mostaghimi</b>	Virginia Polytechnic Institute and State University, USA
<b>Dr. Shaibal Mukerjee</b>	US Environmental Protection Agency, USA
<b>Prof. Pucheng Pei</b>	Tsinghua University, China
<b>Prof. Alexey V. Polonikov</b>	Kursk State Medical University, Russia
<b>Dr. Muneer Aziz Mohammed Saleh</b>	University Teknologi Malaysia (UTM), Malaysia
<b>Dr. Mohammad Nahid Siddiqui</b>	King Fahd University of Petroleum & Minerals, Saudi Arabia
<b>Prof. Gilbert Sigua</b>	United States Department of Agriculture-Subtropical Agricultural Research Station, USA
<b>Prof. Hongwen Sun</b>	Nankai University, China
<b>Prof. Xiangjun Tian</b>	Chinese Academy of Sciences, China
<b>Prof. Cornelia Vasile</b>	Laval University, Canada
<b>Prof. Qingwei Yang</b>	Chongqing Jiaotong University, China
<b>Dr. Ierotheos Zacharias</b>	University of Patras, Greece
<b>Prof. Jinheng Zhang</b>	America-China Culture & Education Foundation, USA

# Table of Contents

**Volume 11    Number 5**

**May 2020**

**Effects of New and Aged Polyethylenterephthalat and Polylactic Acid on *Gammarus fossarum* (Crustacea: Amphipoda) during Long-Term Exposures**

A. Gerhardt.....359

**Exploring Enablers and Barriers to Municipal Solid Waste (MSW) Management Technologies Adoption in the Kingdom of Bahrain**

S. Y. Abbas, K. Kirwan, D. Lu.....377

**Profile of Polycyclic Aromatic Hydrocarbons in Soil Environment around Selected Auto-Technicians' Workshop in ObioAkor, Rivers State Nigeria**

U. I. Daniel, I. A. Utuh, E. O. Nwaichi.....399

**The Effect of Sodium Chloride on Hybrid Taxodium Selections**

A. Koonce, E. Bush, D. Creech.....408

**Rare Earth Elements in the Water Column of Sungai Balok, Pahang, Malaysia as Monsoon Event Proxies**

Z. Daud, C. A. R. Mohamed.....421

# Journal of Environmental Protection (JEP)

## Journal Information

### SUBSCRIPTIONS

The *Journal of Environmental Protection* (Online at Scientific Research Publishing, <https://www.scirp.org/>) is published monthly by Scientific Research Publishing, Inc., USA.

#### **Subscription rates:**

Print: \$79 per issue.

To subscribe, please contact Journals Subscriptions Department, E-mail: [sub@scirp.org](mailto:sub@scirp.org)

### SERVICES

#### **Advertisements**

Advertisement Sales Department, E-mail: [service@scirp.org](mailto:service@scirp.org)

#### **Reprints (minimum quantity 100 copies)**

Reprints Co-ordinator, Scientific Research Publishing, Inc., USA.

E-mail: [sub@scirp.org](mailto:sub@scirp.org)

### COPYRIGHT

#### **Copyright and reuse rights for the front matter of the journal:**

Copyright © 2020 by Scientific Research Publishing Inc.

This work is licensed under the Creative Commons Attribution International License (CC BY).

<http://creativecommons.org/licenses/by/4.0/>

#### **Copyright for individual papers of the journal:**

Copyright © 2020 by author(s) and Scientific Research Publishing Inc.

#### **Reuse rights for individual papers:**

Note: At SCIRP authors can choose between CC BY and CC BY-NC. Please consult each paper for its reuse rights.

#### **Disclaimer of liability**

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

### PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact:

E-mail: [jep@scirp.org](mailto:jep@scirp.org)



## Journal of Environmental Protection (JEP)

ISSN: 2152-2197 (Print) ISSN: 2152-2219 (Online)

<https://www.scirp.org/journal/jep>

JEP is an international refereed journal dedicated to the latest advancement of Environmental Protection. The goal of this journal is to keep a record of the state-of-the-art research and promote the research work in these fast moving areas.

### Editors-in-Chief

**Prof. Thangarasu Pandiyan**

National Autonomous University of Mexico (UNAM), Mexico

**Prof. Qingren Wang**

University of Florida, USA

### Subject Coverage

This journal invites original research and review papers that address the following issues in Environmental Protection. Topics of interest include, but are not limited to:

- **Air pollution and air quality**
  - Air pollution monitoring and modeling
  - Air pollution prevention and control
  - Air quality measurement and management
  - Sources of air pollution
  - Urban/indoor air pollution and control
- **Environmental pollution and public health**
  - Chemical pollutants and its effects on health
  - Effects of air pollution on public health
  - Food and drug safety control
  - Global climate changes and human health
  - Land pollution and its effects on health
- **Ecosystem restoration, toxicology and sustainability**
  - Ecosystem restoration
  - Environmental toxicology
  - Greenhouse gas emission monitoring and solutions
  - Hazardous materials management
  - Radiation safety in atomic industry
  - Solid waste management
  - Sustainable development of environment and ecosystem
- **Hydrology and water quality**
  - Ground water pollution control
  - Hydrobiology and water pollution
  - Methods of monitoring water quality
  - Modeling and measuring of water pollution
- **Environment assessment and policy**
  - Environmental impact assessment
  - Environmental policy
  - Risk assessment of contaminated environments
  - Water resources and quality assessment
  - Water resource protection and sustainable use
- **Wastewater treatment and utilization**
  - New wastewater treatment technologies
  - New water purification technologies
  - Purification of drinking-water supplies
  - Treatment, disposal and discharge of wastewater

We are also interested in short papers (letters) that clearly address a specific problem, and short survey or position papers that sketch the results or problems on a specific topic. Authors of selected short papers would be invited to write a regular paper on the same topic for future issues of the **JEP**.

### Notes for Intending Authors

Submitted papers should not have been previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. All papers are refereed through a peer review process. For more details about the submissions, please access the website.

### Website and E-Mail

<https://www.scirp.org/journal/jep>

E-mail: [jep@scirp.org](mailto:jep@scirp.org)