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EDITORIAL NOTE

We are pleased to present International Journal on "Technical and Physical Problems of Engineering" (IJTPE) in English and electronic print published seasonal periodically by the partners of International Organization on "Technical and Physical Problems of Engineering" (IOTPE).

The partners of IOTPE organization are universities and institute from Azerbaijan, Iran, Turkey, Romania, Spain, Northern Cyprus and Norway.

The IOTPE organization is a scientific association, founder and holder of International Conferences on "Technical and Physical Problems of *Power Engineering*" (ICTPE) have been held from 2002 to 2012. The ICTPE Conferences name and topics are improved to International Conference on "Technical and Physical Problems of *Electrical Engineering*" (ICTPE) have been held from 2013 to 2019.

Finally, the ICTPE Conferences name and topics are improved to International Conference on "Technical and Physical Problems of *Engineering*" (ICTPE) in 2020 Conference to cover subjects in all fields and topics of Electrical Engineering and have been held till now. The ICTPE Conferences were held biannually till ICTPE-2008 and annually after ICTPE-2009 in the partner universities and institutes.

The IOTPE organization is generally managing and performing a set of scientific-executive affairs to holding International Conference of ICTPE, publishing International Journal of IJTPE and directing International Enterprise of IETPE.

Successful organizing and holding ICTPE conference and publishing IJTPE journal indicates close friendship and scientific collaboration of the scientists and researchers of member countries in engineering field development between the countries. The importance of holding ICTPE conference and publishing IJTPE journal are mutual understanding and recognition between the organizer countries through scientific, social and cultural development where yields increasing international cooperation in scientific areas.

Furthermore, the importance subjects of ICTPE conference and IJTPE journal are related to the opportunity for researches and scientists from different

countries to clarify and discuss the latest and mutual research achievements and improvements as well as generalization of the internationally obtained results in the area of engineering and new technologies.

The conducting of ICTPE conference and IJTPE journal are based on important principle of the cooperative relationship between science and industry. This relationship is a basis for the activity of contemporary engineering companies. It is well known that important technical advance is possible only due to achievements of fundamental science.

Publishing IJTPE journal is getting increasing importance for cooperation of researchers and scientific centers of different countries. We strongly believe the journal provides the establishing scientific relationships and also increase the cooperation of east and west countries on the subject of engineering fields and applying the new technologies on solving technical and physical problems.

By the mean of IJTPE journal publication, the cooperation with the partners from the involved countries and also all of the worlds will be fostered. It is the main objective to enhance the level of multilateral exchanges, the involvement of authors in developing and improving the scientific research.

The issues of IJTPE journal are registered, cited and indexed in some scientific organization and databases such as Elsevier-Scopus.

We will do our best to disseminate the journal's results and forward to the possible technological transfer of the accumulated knowledge of the scientific contributions of the authors.

Finally, we wish to express our gratefulness to all the authors and scientists from all over the world who have scientific reports in preparing the transactions published in the journal.

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■ **Norwegian Directorate for Higher Education and Skills (NDHES)** and **Norwegian Center for Research Data (NSD)**, <https://www.nsd.no/en/>, are under **Norwegian Ministry of Education and Research** since 2013. Indexing address:

https://kanalregister.hkdir.no/publiseringsskanaler/KanalTidsskriftInfo.action?id=480511&request_locale=en



■ **Google Scholar**, <http://scholar.google.com/>, for searching, exploring, locating, keeping, checking and citing the publications and authors through the libraries and on the web since 2013.

Search for: IJTPE

<https://scholar.google.com/citations?hl=da&user=gfWxEhEAAAAJ>



■ **Index Copernicus International (ICI)**, <https://indexcopernicus.com/index.php/en/>, since 2013.

Indexing address:

<https://journals.indexcopernicus.com/search/details?id=32511>



■ **Research Bible Academic Research Index**, <http://journalseeker.researchbib.com/>, since 2016.

Indexing address:

<http://journalseeker.researchbib.com/view/issn/2077-3528>



■ **Scientific Indexing Services (SIS)**, <http://www.sindexs.org/>, since 2016.

Indexing address:

<http://www.sindexs.org/JournalList.aspx?ID=3176>

■ **Eurasian Scientific Journal Index (ESJI)**, <http://esjindex.org/>, since 2018.



Indexing address:

<http://esjindex.org/search.php?id=438>

SJR

■ **Sciago Journal & Country Rank (SJR)**, <https://www.scimagojr.com/>, since 2018.

Indexing address:

<https://www.scimagojr.com/journalsearch.php?q=2077-3528>



■ **Resurchify**, <https://www.resurchify.com/>

Indexing address:

<https://www.resurchify.com/impact/details/21100913338>



■ **Canadian Institute for Knowledge Development (CIKD)**, <https://cikd.ca/>

Indexing address:

<https://ieconferences.cikd.ca/call-for-papers-3rd-ie-conference/>