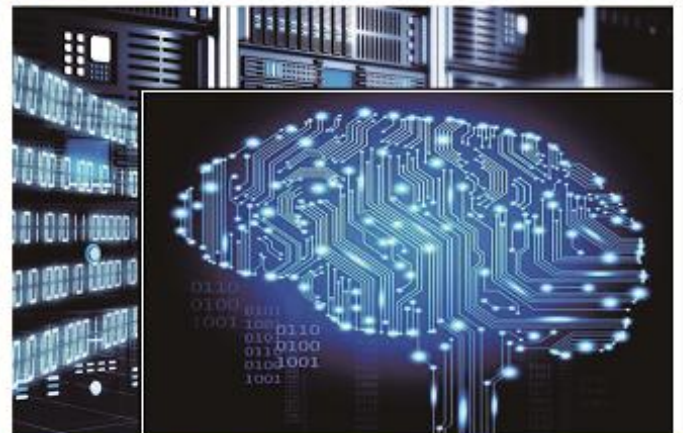
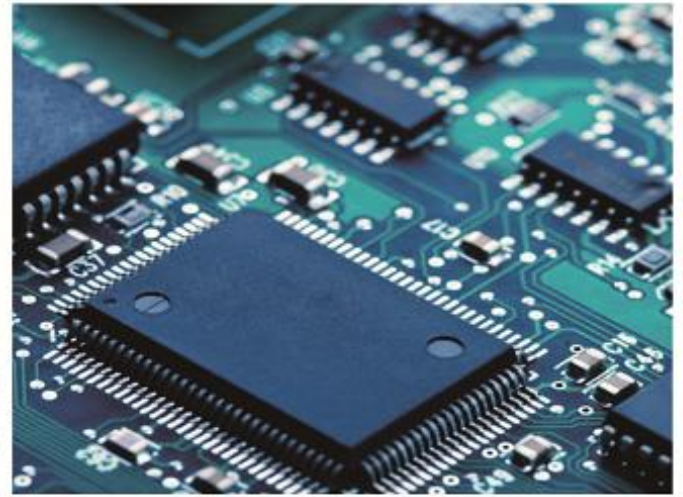


JURNAL INFOTEL

INFORMATICS TELECOMMUNICATION ELECTRONICS

Volume 10, Number 4 November 2018



Lembaga Penelitian dan Pengabdian Masyarakat
Institut Teknologi Telkom Purwokerto



JURNAL INFOTEL**Informatics, Telecommunication, and Electronics**

Volume 10, Number 4 November 2018

DESCRIPTION AND POLICY**About Jurnal INFOTEL**

Jurnal INFOTEL is a scientific journal published by Lembaga Penelitian dan Pengabdian Masyarakat (LPPM) of Institut Teknologi Telkom Purwokerto, Indonesia. It was firstly published in 2009 for a printed version and for online version in 2012. The aims of Jurnal INFOTEL are to disseminate research results and to improve the productivity of scientific publications. Jurnal INFOTEL is published quarterly in February, May, August, and November. **Starting in 2018, Jurnal INFOTEL uses English as the primary language.**

Focus and Scope

Jurnal INFOTEL covers the field of informatics, telecommunications, and electronics. We receive **original research articles and any review papers**. Jurnal INFOTEL is published quarterly in **February, May, August and November** with the scopes and focus of the research areas that are:

Informatics: including Software Engineering, Information Technology, Information System, Data Mining, Multimedia, Mobile Programming, Artificial Intelligence, Computer Graphic, Computer Vision, Augmented/Virtual Reality, Games Programming.

Telecommunications: including Modulation and Signal Processing, Information Theory and Coding, Antenna and Wave Propagation, Wireless and Mobile Communication, Radio Communication, Satellite Communication, Fiber Optic, Network, and System.

Electronic: including Microelectronic System, VLSI Design, Biomedical Instrument, Embedded System, Robotic, Communication Electronic, Optoelectronic, Internet of Things, Analogue and Digital Control, Intelligent Control, Adaptive System, System Identification.

Peer Review Policy

Each article that goes to the editor will be selected in advance on the scope and feasibility by the editorial board. Then, the articles will be sent to peer reviewer and will go to the next selection by **Blind Preview Process**. Reviewers do not know the identity of the authors, and authors do not know the identity of reviewers either. Each submitted paper will be reviewed by at least two peer-reviewers. After that, the articles will be returned to the authors to revise. The reviewing process will consider novelty, objectives, method, scientific impact, conclusion, and references.

Open Access Policy

This journal is an open access journal which provides free access to the full text of all published articles without charging readers or their institutions for access. Readers have the right to read, download, copy, distribute, print, search, or link to the full texts of all articles in Jurnal INFOTEL. This journal provides immediate open access to its content on the principle that makes the research freely available to the public supports a greater global exchange of knowledge.

Registration Process

Due to security issues, the registration process in Jurnal INFOTEL is conducted by sending author's data such as full name and academic degree, email, and institutional affiliation to email **infotel@st3telkom.ac.id**. Author's account will be created by Admin. Account details, namely username and password, will be sent to Authors. The Authors, then are welcomed to submit their paper(s) afterward.

Online Submission

If you have already got the Username/Password for Jurnal INFOTEL, go to log in at:

<http://ejournal.st3telkom.ac.id/index.php/infotel/login>

Copyediting and Proofreading

All accepted papers will be checked with Copyediting and Proofreading process. We also use Grammarly application to improve the grammar quality of the articles.

Accreditation

Jurnal INFOTEL has been accredited by Ministry of Research, Technology and Higher Education as an online Scientific journal in Indonesia with accreditation number: 21/E/KPT/2018, July 9, 2018.

Indexing

Jurnal INFOTEL has been listed and indexed by Google Scholar, Open academic journals index, Crossref, ResearchBib, Bielefeld Academic

Search Engine (BASE), ROAD: The Directory of Open Access Scholarly Resources, Directory of Open Access Journal (DOAJ), Neliti, Indonesia One Search, Garba Rujukan Digital (Garuda), Science and Technology Index (SINTA) and ASEAN Citation Index (ACI).

Mailing Address

Jurnal INFOTEL office:

Lembaga Penelitian dan Pengabdian Masyarakat (LPPM) Institut Teknologi Telkom Purwokerto (IT Telkom Purwokerto)

D.I Panjaitan Street No.128 Purwokerto, Indonesia

Telp. 0281-641629

Email: infotel@st3telkom.ac.id

Website:

<http://ejournal.st3telkom.ac.id/index.php/infotel>

JURNAL INFOTEL

Informatics, Telecommunication, and Electronics

Volume 10, Number 4 November 2018

Publisher

Lembaga Penelitian dan Pengabdian Masyarakat (LPPM)
Institut Teknologi Telkom Purwokerto

Editor-in-Chief

Danny Kurnianto (Indonesia)

Advisory Board

Adiwijaya (Indonesia)

Khoirul Anwar (Indonesia)

Associate Editor

Kurnianingsih (Indonesia)

Syifaul Fuada (Indonesia)

Hendriyawan Achmad (Indonesia)

Ilham Ari Elbaith Zaeni (Indonesia)

Editorial Board

Huynh Thi Thanh Binh (Vietnam)

Janner Simarmata (Indonesia)

Anggun Fitriani Isnawati (Indonesia)

Ari Fadli (Indonesia)

Andri Pranolo (Indonesia)

Tenia Wahyuningrum (Indonesia)

Yessi Jusman (Indonesia)

Wahyu Pamungkas (Indonesia)

Alfin Hikmaturokhman (Indonesia)

Heri Nurdiyanto (Indonesia)

Copyeditor

Eko Fajar Cahyadi

Elisa Usada

Jans Hendry

Novanda Alim Setya Nugraha

Layout Editor

Ade Wahyudin

Muntaqo Alfin Amanaf

IT Support

Syariful Ikhwan

Gunawan Wibisono

JURNAL INFOTEL
Informatics, Telecommunication, and Electronics

Volume 10, Number 4 November 2018

PREFACE FROM EDITOR-IN-CHIEF

Jurnal INFOTEL is a scientific journal published by Lembaga Penelitian dan Pengabdian Masyarakat (LPPM) of Institut Teknologi Telkom Purwokerto, Indonesia. It covers the field of Informatics, Telecommunications, and Electronics. The aims of Jurnal INFOTEL are to disseminate research results and to improve the productivity of scientific publications. Starting in Volume 10 Number 1, 2018, Jurnal INFOTEL uses English as the primary language.

Jurnal INFOTEL is indexed by national and international indexer such as Neliti, Indonesia One Search, Garba Rujukan Digital (Garuda), Science and Technology Index (SINTA), Google Scholar, Open academic journals index, Crossref, ResearchBib, Bielefeld Academic Search Engine (BASE), ROAD: The Directory of Open Access Scholarly Resources, Directory of Open Access Journal (DOAJ) and ASEAN Citation Index (ACI).

In this issue, six papers are published by 21 authors from 5 institutions in Indonesia. Four papers related to telecommunications topics. One paper related to Informatics topic. One paper are about Electronics topic.

We would like to thank our Associate Editors, Editorial Boards, Reviewers, and Authors. We hope that Jurnal INFOTEL can contribute to the progress of scientific publications in Indonesia and in the world.

Purwokerto, November 2018

Editor-in-Chief

JURNAL INFOTEL
Informatics, Telecommunication, and Electronics
 Volume 10, Number 4 November 2018

TABLE OF CONTENT

Description and Policy	i
Editorial Board	iii
Preface from Editor-in-Chief.....	iv
Table of Content.....	v
Performance Analysis of the Differences Restricted Access Window (RAW) on IEEE 802.11ah Standard with Enhanced Distributed Channel Access (EDCA) (Mulki Nurullah Perbawa, Doan Perdana, Yoseph Gustommy Bisono).....	163
Energy Consumption Analysis of DBR and VBF Protocols in Underwater Sensor Networks Using Aqua-Sim at Network Simulator 2 (Ahmad Tsaqib Hakim, Arrum Prima Dewi, Doan Perdana, Cyril Nugrahutama Kurnaman)	170
Fuzzy PID Algorithm-Based External Carbon Controller for Denitrification Process Enhancement in Wastewater Treatment Plant (Gutama Indra Gandha, Dedi Nurciptio)	178
Designing an Optimization System Toward Moving Object Projection in 3-Dimensional Space Using Genetic Algorithm (Feishal Reza, Panca Mudjirahardjo, Erni Yudaningtyas).....	186
Open Loop and Closed Loop Power Control Analysis on LTE (Norma Amalia, Eka Setia Nugraha, Muntaqo Alfin Amanaf).....	195
Prototype of Long-Range Radio Communication for e-Nelayan Devices using LoRaWAN (Syifaul Fuada, Sinantya Feranti Anindya, Febri Dawani, Aditia Rifai, Erick Adinugraha, Irfan Gani Purwanda, Trio Adiono).....	202
Peer Review Acknowledgement.....	vi
Guidelines for Author	ix