

Journal of ICT Research and Applications

Journal of ICT Research and Applications welcomes full research articles in the area of Information and Communication Technology from the following subject areas: Theory, Signal Processing, Electronics, Computer Network, Telecommunication, Wireless & Mobile Computing, Internet Technology, Multimedia, Software Engineering, Computer Science, Information System, and Knowledge Management. Authors are invited to submit articles that have not been published previously and are not under consideration elsewhere.

Abstracts and articles published on *Journal of ICT Research and Applications* are available online at <http://journals.itb.ac.id/index.php/jictra> and indexed by Scopus, Google Scholar, DOAJ, EBSCO Open Science Directory, Electronic Library University of Regensburg, Open J-Gate, New Jour, International Association for Media and Communication Research (IAMCR), Cabell's Directories, Zurich Open Repository and Archive Journal Database, and ISJD-Indonesian Institute of Sciences.

Publication History

Formerly known as:

- ITB Journal of Information and Communication Technology (2007 – 2012)

Editorial board of Journal of ICT Research and Applications

Chief Editor Achmad Munir School of Electrical Engineering and Informatics ITB, Indonesia	Adit Kurniawan School of Electrical Engineering and Informatics ITB, Indonesia	Rila Mandala School of Electrical Engineering and Informatics ITB, Indonesia	Bambang Riyanto Trilaksono School of Electrical Engineering and Informatics ITB, Indonesia
Editorial Board Hans Dulimarta Grand Valley State University, USA	Yoanes Bandung School of Electrical Engineering and Informatics ITB, Indonesia	Dugki Min School of Computer Science and Engineering, Konkuk University, Korea	Anak Agung Julius Dept. Electrical, Computer and Systems Engineering, Rensselaer Polytechnic Institute Jonsson Engineering Center, New York, USA
Ken Ferens University of Manitoba, Canada	M. Amin Sulthoni School of Electrical Engineering and Informatics ITB, Indonesia	Ayu Purwarianti School of Electrical Engineering and Informatics ITB, Indonesia	Dwi H. Widyantoro School of Electrical Engineering and Informatics ITB, Indonesia
Leo P. Ligthart International Research Center on Telecommunication and Radar, TU Delft, Netherlands	Budi Rahardjo School of Electrical Engineering and Informatics ITB, Indonesia	David Taniar Clayton School of Information Technology Monash University, Australia	Rinaldi Munir School of Electrical Engineering and Informatics ITB, Indonesia

Publication assistant: Dini Sofiani Permatasari & Yuliah Qotimah. Address: *ITB Journal Publisher*, LPPM ITB, Center for Research and Community Services (CRCS) Building 6th & 7th Floor, Jl. Ganesha No. 10 Bandung 40132, Indonesia, Tel. +62-(022)-86010080, Fax.: +62-(022)-86010051; e-mail: jictra@lppm.itb.ac.id.

Distribution: Distributed to other universities and research institutions for exchange publications and to regular subscribers.

Subscription per issue: Rp 100.000,- (domestic) and \$50 (overseas). Order form for subscription should be sent to the editorial office.

Reg. No. 691-SIC-UPPGT-SIT-1963, Accreditation No. 30/E/KPT/2018

Published by *ITB Journal Publisher*, the Institute for Research and Community Services, Institut Teknologi Bandung, in collaboration with Indonesian Engineering Association (Persatuan Insinyur Indonesia - PII).

Cover Design by Chandra Tresnadi.

Table of Contents

1. A Global Two-Stage Histogram Equalization Method for Gray-Level Images Matrix Khaled Almotairi	95
2. Decision Routing Problems in A Wireless Sensor Network Based on A Neural Mechanism Aybek Fayzullaevich Khaytbaev	115
3. Enhanced Image Encryption Using Two Chaotic Maps Fatimah Abdulnabi Salman & Khitam Abdulnabi Salman	134
4. A Novel Boost-Buck Converter Architecture for Improving Transient Response and Output-Voltage Ripple Freddy Kurniawan, Lasmadi Lasmadi, Okto Dinaryanto, Bambang Sudibya & Mohammad Ridlo Erdata Nasution	149
5. Real Power Loss Reduction and Voltage Stability Enhancement by Stock Exchange, Product Demand-Availability, Affluent and Penurious Algorithms Kanagasabai Lenin	165
6. Research on Quality of Service Based Routing Protocols for Mobile Ad Hoc Networks Selman Hizal & Ahmet Zengin	185