

**Volume 1 No. 1 October 2023**

# **ELRINA : Journal of Electrical, Marine and Its Application**

**E-ISSN :**

## **PUBLICATION BOARD OF DIRECTORS**

Prof. Norman Mariun (Universitas Putra Malaysia)

Prof. Ken Takagi (The University of Tokyo)

Noorman Rinanto, S.T. M.T., Ph.D. (Politeknik Perkapalan Negeri Surabaya)

## **EDITOR IN CHIEF**

Dr. Yuning Widiarti, S.T., M.T. (Politeknik Perkapalan Negeri Surabaya)

## **TIM EDITORIAL**

Alief Nur Aisyi Maulidhia, S.T., M.T. (Politeknik Perkapalan Negeri Surabaya)

R. Oktav Yama Hendra, S.ST., M.Tr.T. (Politeknik Negeri Madiun)

Kadek Reda Setiawan Suda, S.Pd., M.Tr.T (Politeknik Nasional)

Anggara Trisna Nugraha, S.T., M.T. (Politeknik Perkapalan Negeri Surabaya)

Sholahuddin Muhammad Irsyad, S.Tr.T., M.Tr.T. (Politeknik Perkapalan Negeri Surabaya)

Prof. Dani Harmanto (University of Derby)

Dr. Taufiq Asyhari (Cranfield University)

Riko Satrya Fajar Jaelani Putra, S.T. M.T. (Politeknik Perkapalan Negeri Surabaya)

Prof. Norman Mariun (University Putra Malaysia)

Baity Nuris Syifa, S.T., M.T. (Queensland University)

Abdillah Aziz Muntashir, S.Tr.T.. M.Tr.T. (Politeknik Astra)

Dr. Wahyu Pamungkas (Telkom University Purwokerto)

Anggarjuna Puncak Pujiputra, S.T.. M.T. (Politeknik Perkapalan Negeri Surabaya)

## **TIM REVIEWER**

Prof. Jinglu Hu, (Waseda University)

Rona Riantini (Politeknik Perkapalan Negeri Surabaya)

N. Yuvaraj, (St. Peter's Institute of Higher Education and Research)

Norman Riananto (Politeknik Perkapalan Negeri Surabaya)

M. Syai'in, (Politeknik Perkapalan Negeri Surabaya)

Gabriela W. Favieiro, (Federal University of Rio Grande do Sul)

mam Sutrisno, (Politeknik Perkapalan Negeri Surabaya)

Catur Rachmat Handoko, (Politeknik Perkapalan Negeri Surabaya)

Ryan Yudha, (Politeknik Perkapalan Negeri Surabaya)

Dr. Michael Ardita, (National Institute of Technology Malang)

Prof. Mike Yuliana, (Politeknik Elektronika Negeri Surabaya)  
Abdillah Fashiha Ilman, S.T., M.T., (Politeknik Madura)  
Ir. Muhammad Rizani Rusli, S.ST., M.Tr.T., (Politeknik Elektronika Negeri Surabaya)  
Ass. Prof. Mahmoud Elsis, (Kaohsiung University of Science and Technology)  
Prof. Rudzidatul Akmam Dziyauddin, (University Teknologi Malaysia)  
Dr. Riska Nurtantyo Sarbini, (Universitas Islam Kadiri)

**GRAPHIC DESIGNER**

**PHOTOGRAPER**

**SECRETARIAT & ADMINISTRATIVE**

# **ELRINA : Journal of Electrical, Marine and Its Application**

## **TABLE OF CONTENTS**

**Volume 1 No. 1 October 2023**

- 1. Optimizing the Output System of PG36M555 DC Carbon-Brush Motors Using LQR and LQT Methods in MATLAB Simulink**  
Mukhammad Jamaludin, Anggara Trisna Nugraha
- 2. Design and Development of a Prototype System for Temperature and Water Level Control in an Extruder Machine**  
Akhmad Azhar Firdaus, Anggara Trisna Nugraha, Rama Arya Sobhita
- 3. Design of LQR Control for Regulating Relative Air Temperature in Beef Cooling Room Systems**  
Muhammad Fikri Fathurrohman
- 4. Comparison of Performance of PID and LQR Methods in Improving the Stability of DC Motor Control Systems**  
Ahmad Efendi Adi Pratama
- 5. BN12 DC Motor Control Using Linear Quadratic Regulator (LQR) and Linear Quadratic Tracking (LQT) Circuits**  
Mohamad Fakhri Ali Mufidz
- 6. Design and Implementation of a Single-Phase AC Voltage Controller for Engineering Applications**  
John Vernando Purba
- 7. Analysis of a 3-Phase Uncontrolled Full-Wave Rectifier Using a 3-Phase AC Generator**  
Rama Arya Sobhita
- 8. Analysis of Output Voltage Characteristics in a Single-Phase Half-Wave Controlled Rectifier Circuit for DC Motor**  
Lutfi Bimantara