

# Prof. Ir. Yulianta Siregar, S.T., M.T., Ph.D.Eng., IPM

Dosen Program Studi S2 Teknik Elektro  
Fakultas Teknik  
Universitas Sumatera Utara

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🏢 Fakultas Teknik

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*Yulianta Siregar lahir pada tanggal 09 Juli 1978 di Medan, Sumatera Utara, Indonesia. Beliau menempuh pendidikan sarjana di Universitas Sumatera Utara di Medan, Sumatera Utara, Indonesia. Beliau menerima gelar Sarjana Teknik pada tahun 2004. Setelah beberapa saat, beliau bekerja di perusahaan swasta. Beliau melanjutkan mengambil program magister di bidang Teknik Elektro di Institut Teknologi Sepuluh Nopember, Surabaya, Jawa Timur, Indonesia, dari tahun 2007 - 2009. Beliau mengikuti program doctoral di Universitas Kanazawa, Jepang, dari tahun 2016 - 2019. Hingga saat ini, beliau mengajar di Universitas Sumatera Utara.*

## Publications

2026

Prosiding seminar internasional

### **Design of a Wind Power Generation Turbine for Low-to-Medium Wind Speeds in Medan**

YULIANTA SIREGAR , MAKSUM PINEM , MUHAMMAD RIZKI SYAHPUTRA

2026

Prosiding seminar internasional

### **Monitoring and Control System for Solar Trackers Based on the Internet of Things**

YULIANTA SIREGAR , MAKSUM PINEM , OFEBER TAFONAO

2026

Prosiding seminar internasional

### **Comparative Analysis of The Effect of Epoxy Silicone Rubber Resin with Silica Sand/TiO<sub>2</sub> and Silica Sand/MgO Fillers on The Mechanical and Electrical Characteristics of Insulators**

YULIANTA SIREGAR , RUT DANIELA GINTING , Issarachai Ngamroo

2025

Jurnal internasional bereputasi

### **Analysis of voltage drop using transformer tap changer and placement of capacitor bank with genetic algorithm**

YULIANTA SIREGAR , AGUS KIVANDER SARAGI , Issarachai Ngamroo

2025

Jurnal internasional bereputasi

### **Design and analysis of hybrid filters for harmonic reduction in three-phase nonlinear rectifier loads**

YULIANTA SIREGAR , DEDET CANDRA RIAWAN , MULDI YUHENDRI , Daniel Julian Sinaga , Nur Nabila Mohamed

2025

Prosiding seminar internasional

### **Analysis of the Utilization of Gypsum Powder Composition and Fly Ash for Improving Grounding Resistance at Variations in Electrode Depth**

YULIANTA SIREGAR , TOGA PRAJA MANURUNG , Hans Siregar , Rikardo Simanjuntak , Flesensius Agam Fradiska , Muhammad Iqbal

2025  
Jurnal internasional bereputasi

**Vector Control of Three Phase Squirrel Cage Induction Motor based on Internet of Things**

YULIANTA SIREGAR , MULDI YUHENDRI , DEDET CANDRA RIAWAN , Nur Nabila Mohamed

2025  
Jurnal internasional bereputasi

**Comparative analysis of active filters, inductor-capacitor and inductor-capacitor-inductor passive filters in reducing harmonics**

YULIANTA SIREGAR , NAOMI AZHARI , Nur Nabila Mohamed

2025  
Jurnal internasional bereputasi

**Vector Control of Three Phase Squirrel Cage Induction Motor based on Internet of Things**

DEDET CANDRA RIAWAN , MULDI YUHENDRI , TA ALI , YULIANTA SIREGAR , Nur Nabila Mohamed

2025  
Jurnal internasional bereputasi

**Design of micro-scale wind power plant with vertical axis wind turbine darrieus type-H**

YULIANTA SIREGAR , ARY PRAYOGO , Nur Nabila Mohamed , Issarachai Ngamroo

2025  
Prosiding seminar internasional

**Monitoring System for Pico Hydropower Plants on Pelton Turbines Based on the Internet of Things**

YULIANTA SIREGAR , Edy Saputra Marbun , Nur Nabila Mohamed

2025  
Prosiding seminar internasional

**Performance Comparison of Ant Colony Optimization and Symbiotic Organism Search In Smart Home Energy Management Systems**

MAKSUM PINEM , YULIANTA SIREGAR , SANDY ARMANDO SAPUTRA

2025  
Prosiding seminar internasional

**Design and Construction of a Pico Hydro Power Plant Using a Turgo Turbine on the Bah-Biak Waterfall Flow**

YULIANTA SIREGAR , DANIEL ORTEGA MANIK

2025  
Jurnal internasional bereputasi

**Design of starting a three phase induction motor using direct on-line, variable frequency drive, soft starting, and auto transformer methods**

DEDET CANDRA RIAWAN , Nur Nabila Mohamed , YULIANTA SIREGAR , MULDI YUHENDRI

2025  
Jurnal internasional bereputasi

**Generator analysis and comparison of working fluids in the organic Rankine cycle for biomass power plants using Aspen Plus software**

YULIANTA SIREGAR , Wahyu Franciscus Sihotang , Nur Nabila Mohamed

2024  
Jurnal internasional bereputasi

**Modelling the Hybrid Security Approach for Secure Data Exchange: A Proof of Concept**

YULIANTA SIREGAR , Nur Nabila Mohamed , Nur Arzilawati MD YUNUS , Fazlina MOHD ALI

2024  
Prosiding seminar internasional

**Atmospheric Pressure Plasma Jet (APPJ) Generation using Industrial Frequency Alternative Power Source**

Van Nhan Truong , Hoa Thi Truong , Trinh Le Pham , Cong Trinh Pham , YULIANTA SIREGAR

2024  
Jurnal internasional bereputasi

## **Comparative design of harmonic current reduction in variable speed drive using space vector pulse width modulation and hybrid pulse width modulation**

Nur Nabila Mohamed , FAREL SITUMEANG , YULIANTA SIREGAR

2024  
Prosiding seminar internasional

## **Recloser Optimization To Increase Network Reliability Using The Particle Swarm Optimization Algorithm**

YULIANTA SIREGAR

2024  
Prosiding seminar internasional

## **Analysis Of Feeder Switch Relocation To Minimize Saidi And Saifi In The 20 Kv Distribution Network Of Rengat City**

EDITHA YULY MARIA SIHALOHO , YULIANTA SIREGAR

2024  
Jurnal internasional bereputasi

## **Distribution network reconfiguration utilizing the particle swarm optimization algorithm and exhaustive search methods**

YULIANTA SIREGAR , SIHAR P PANJAITAN , KASMIR TANDJUNG , SYISKA YANA , TOMI SAPUTRA JAYA TAMBUN

2024  
Prosiding seminar internasional

## **Design of DC Voltage, Humidity, Temperature, and Dust Density Monitoring Tools on Solar Panels Based on the Thinger IO Platform in Real Time**

Edinanta Efrata Limbong , YULIANTA SIREGAR

2024  
Prosiding seminar internasional

## **Smart Energy Meter Design with Notifications and Over-Electric Energy Consumption Cut-off with ESP32 MCU Node Using the Blynk IOT Application**

Yohanes Rinaldy Putra Manurung , YULIANTA SIREGAR

2024  
Prosiding seminar internasional

## **Monitoring System Design And Controlling Smart Home Features With The Blynk App**

ELHANSDRO TANDRY , YULIANTA SIREGAR

2023  
Prosiding seminar internasional

## **The effect of grading ring electrodes and stub positions on the voltage distribution of glass chain insulators in polluted conditions**

HENDRA ZULKARNAIN , MARIANI PURBA , YULIANTA SIREGAR

2023  
Prosiding seminar internasional

## **Effect Variation of Grading Electrode and Stub Position on Polluted Chain Isolator**

DRESS BOBYAN GINTING , YULIANTA SIREGAR , HENDRA ZULKARNAIN

2023  
Jurnal nasional terakreditasi

## **PERBANDINGAN METODA DIFFERENTIAL EVOLUTIONARY ALGORITHM DENGAN LAGRANGE MULTIPLIER PADA OPTIMISASI ECONOMIC DISPATCH**

YULIANTA SIREGAR , RISWAN DINZI , MELINDA ZUBARA SIREGAR

2023  
Jurnal internasional bereputasi

## **Analysis of interference methods on transformers based on the results of dissolved gas analysis tests**

YULIANTA SIREGAR

2023  
Jurnal internasional bereputasi

## **Numerical analysis in Ar-H<sub>2</sub> coupled-coil inductively coupled thermal plasma with Si feedstock for stable operation**

YULIANTA SIREGAR

2023  
Prosiding seminar internasional

## **The Effect of Installation Angle and Rain Intensity on Partial Discharge Arising on The Cap Insulator Polluted and Wet Porcelain Plate**

DANIEL ADRIANTO HUTAGALUNG , YULIANTA SIREGAR , HENDRA ZULKARNAIN

2023  
Prosiding seminar internasional

## **Air cleaner design using multiplier voltage application**

DANU ALIF TARA , HENDRA ZULKARNAIN , YULIANTA SIREGAR

2023  
Prosiding seminar internasional

## **Effect of Changes in Resistive, Inductive, and Excitation Capacitance on Voltage and Frequency of Induction Generators**

YULIANTA SIREGAR

2023  
Prosiding seminar internasional

## **Optimizing the Design of the Solar Cell Roof at Universitas Sumatra Utara by PVsyst**

YULIANTA SIREGAR

2022  
Prosiding seminar internasional

## **Person Segmentation in Human Height Measurement Using Bodypix**

YULIANTA SIREGAR , FAHMI

2022  
Jurnal internasional bereputasi

## **Study of Hybrid Transmission HVAC/HVDC by Particle Swarm Optimization (PSO)**

YULIANTA SIREGAR

2022  
Jurnal nasional terakreditasi

## **Optimization Placement and Sizing of Static Synchronous Compensator**

ZULKARNAEN PANE , YULIANTA SIREGAR

2022  
Prosiding seminar internasional

## **Optimization of Location, Capacity, and Number of UPFC in the 150 kV SUMBAGUT Transmission System by Using Particle Swarm Optimization**

YULIANTA SIREGAR

2022  
Prosiding seminar internasional

## **Dielectric Strength of SF<sub>6</sub>-N<sub>2</sub> and SF<sub>6</sub>-CO<sub>2</sub> due to Temperature and Pollutants**

YULIANTA SIREGAR , HENDRA ZULKARNAIN

2022  
Jurnal internasional bereputasi

## **Design of solar cell using mirror, cooling, double axis, and solar tracking**

YULIANTA SIREGAR , SUHERMAN , SOEHARWINTO

2022  
Prosiding seminar internasional

## **The Dielectric Power of Mixed Gas Insulation of SF<sub>6</sub>-CO<sub>2</sub> and SF<sub>6</sub>-N<sub>2</sub>**

HENDRA ZULKARNAIN , YULIANTA SIREGAR

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2022

Prosiding seminar internasional

## **Effect Temperature on Dielectric Strength of Transformer Oil With Nanoparticle SiO<sub>2</sub> and CCl<sub>4</sub>**

HENDRA ZULKARNAIN , YULIANTA SIREGAR

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2022

Jurnal internasional bereputasi

## **Study of harmonic distortion from variable speed drive and energy saving lamps**

ZULKARNAEN PANE , SUHERMAN , YULIANTA SIREGAR

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2022

Prosiding seminar internasional

## **Design of Transformer Oil Purification Equipment**

HENDRA ZULKARNAIN , YULIANTA SIREGAR

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2022

Prosiding seminar internasional

## **Analysis of Resistivity, Dielectric Strength and Tensibility of Insulator Materials of A Mixture of Epoxy Resin, Silicone Rubber, and Coal Ash**

YULIANTA SIREGAR , HENDRA ZULKARNAIN

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2022

Prosiding seminar internasional

## **Optimization Placement of SVC and TCSC in Power Transmission Network 150 kV SUMBAGUT using Artificial Bee Colony Algorithm**

ZULKARNAEN PANE , YULIANTA SIREGAR

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2021

Prosiding seminar internasional

## **Network Reconfiguration of Distributed Generation for Reduced Power Loss and Increasing Voltage Profile by Using Artificial Bee Colony**

YULIANTA SIREGAR , FERRY RAHMAT ASTIANTA BUKIT , ZULKARNAEN PANE

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2021

Prosiding seminar internasional

## **Design of Detectors on Automatic Trolley Using Ultrasonic Distance Sensors at Airports**

YULIANTA SIREGAR

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2021

Prosiding seminar internasional

## **Analysis Reliability of Distribution Network Interconnected with Distributed Generation**

YULIANTA SIREGAR , ZULKARNAEN PANE

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2021

Prosiding seminar internasional

## **Coordination Optimization of Directive Current Release Due To Added Electricity in The Distribution Network Using ANFIS**

ZULKARNAEN PANE , YULIANTA SIREGAR

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2021

Prosiding seminar internasional

## **Optimization of Overcurrent Relay Coordination using Artificial Bee Colony**

ZULKARNAEN PANE , YULIANTA SIREGAR

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2021

Prosiding seminar internasional

## **Optimization of Hydro Turbine Governor in a Stand-Alone Hydro Plant using PID Control**

SHEYLIN WIMORA LUMBAN TOBING , ZULKARNAEN PANE , YULIANTA SIREGAR

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2021

Prosiding seminar internasional

# Optimization of Distributed Generating Power Placement And Capacity On The Distribution Network For Voltage Stability Improvemen

YULIANTA SIREGAR , ZULKARNAEN PANE

2021

Prosiding seminar internasional

## Design of Geothermal and Solar Hybrid Renewable Energy in Sipoholon Village, North Tapanuli Regency, North Sumatera

EMERSON PASCAWIRA SINULINGGA , SUHERMAN , YULIANTA SIREGAR

2021

Prosiding seminar internasional

## Grounding Systems in High Voltage Substation by Analysis Optimization Design (Case Study : 150kV Tapak Tuan Substation)

SUHERMAN , YULIANTA SIREGAR , EMERSON PASCAWIRA SINULINGGA

2021

Prosiding seminar internasional

## Analysis of Electrical Protection Coordination at Biogas Power Generation Plant from Palm Oil Mill Effluent

YULIANTA SIREGAR , FAHMI

2021

Prosiding seminar internasional

## Delay distributions on encrypted real-time traffics

YULIANTA SIREGAR , SUHERMAN

2021

Prosiding seminar internasional

## Event Based Surveillance using WiMAX

SUHERMAN , YULIANTA SIREGAR

2021

Prosiding seminar internasional

## Intermittent versus continuous social media exposure for energy consumption and human eye health

SUHERMAN , YULIANTA SIREGAR

2020

Prosiding seminar internasional

## Location misplacement analysis on global positioning system

MAKSUM PINEM , YULIANTA SIREGAR , SUHERMAN

2020

Prosiding seminar internasional

## Study of Hybrid System Between Solar Cell and State Electric Company (PT.PLN) in Indonesia with Arduino System

YULIANTA SIREGAR , SUHERMAN

2020

Prosiding seminar internasional

## Study of Comparison between Covered Lagoon Method and Anaerobic Digester for POME Processing in Biogas Renewable Energy: A Review

SUHERMAN , YULIANTA SIREGAR

2020

Prosiding seminar internasional

## Analysis of biobriquette from rice husk for biomass power plants: A review

YULIANTA SIREGAR , SUHERMAN

2020

Prosiding seminar internasional

## Study of comparison between covered lagoon method and anaerobic digester for POME processing in biogas renewable energy: A review

SUHERMAN , YULIANTA SIREGAR

2020  
Prosiding seminar internasional

## **Study of hybrid system between solar cell and state electric company (PT.PLN) in Indonesia with arduino system**

YULIANTA SIREGAR , SUHERMAN

2020  
Prosiding seminar internasional

## **Optimization design and simulating solar PV system using PVSyst software**

SUHERMAN , YULIANTA SIREGAR

2020  
Prosiding seminar internasional

## **Optimization Design and Simulating Solar PV System Using PVSyst Software**

YULIANTA SIREGAR , SUHERMAN

2020  
Prosiding seminar internasional

## **Analysis of Biobriquette from Rice Husk for Biomass Power Plants: A Review**

YULIANTA SIREGAR , SUHERMAN

2020  
Prosiding seminar internasional

## **Load current, dropped voltage and size considerations in LDR based light control system**

SUHERMAN , YULIANTA SIREGAR

2020  
Prosiding seminar internasional

## **Video streaming application with post-decoding concealment technique**

SUHERMAN , YULIANTA SIREGAR

2020  
Prosiding seminar internasional

## **The LCL filter design for three phase DC-AC voltage converter**

YULIANTA SIREGAR , SUHERMAN

2016  
Jurnal nasional

## **PENENTUAN LOKASI SWING BUS DI JARINGAN LISTRIK SUMATERA bagian UTARA 150 KV**

YULIANTA SIREGAR

2015  
Jurnal nasional

## **Daya Output Optimal pada Jenis Solar Cell Monocrystalline dan Polycrystalline**

YULIANTA SIREGAR , HASDARI HELMI RANGKUTI

2015  
Jurnal nasional

## **Daya Output Optimal Pada Jenis Sollar Cell Monocrystalline dan Polycrystalline**

YULIANTA SIREGAR

2011  
Prosiding seminar nasional

## **Newthom-Raphson Paralel Load Flow di Sistem Jaringan Jawa Timur 150 KV**

YULIANTA SIREGAR

# **Researches**

2025  
Penelitian Kerjasama Antar Perguruan Tinggi

## **Desain Optimasi Dynamic Voltage Restorer (DVR) dan Manajemen Energi pada**

# Kontrol Daya Maksimum Pembangkit Hybrid Wind Photovoltaic dan Battery Energy Storage System (BESS) di Smart Grid dengan Menggunakan Artificial Neural Network

YULIANTA SIREGAR , HAFIZH PRIHTIADI , MULDI YUHENDRI , Mohd Najib bin Mohd Hussain

2024

## Impact Starting, Smart control, dan Integrating wireless sensor network pada Pengasutan Motor Induksi 3 Fasa dengan Metode Direct On-Line, Variable Frequency Drive, Soft Starting, dan Auto Transformer dengan ada weak grid dan berbasis IoT

YULIANTA SIREGAR , DEDET CANDRA RIAWAN , MULDI YUHENDRI , Nur Nabila binti Mohamed

2020

Penelitian Fundamental

## Minimalisasi Rugi Daya Pada Jaringan Distribusi Dengan Melakukan Rekonfigurasi Jaringan Distribusi Yang Terhubung Distributed Generation Menggunakan Metode Ant Colony Optimization (ACO)

FERRY RAHMAT ASTIANTA BUKIT , YULIANTA SIREGAR , ZULKARNAEN PANE

2015

Penelitian Hibah Bersaing

## PENENTUAN LOKASI SWING BUS DI JARINGAN LISTRIK SUMATERA BAGIAN UTARA 150 KV

RAJA HARAHAAP , YULIANTA SIREGAR

2014

Penelitian Hibah Bersaing

## Simulasi Sitem Smart Grid di Jaringan Sumatera Utara Bagian Utara 150 kV

YULIANTA SIREGAR , SURYA TURMUZI KASIM

## Community Services

2025

## Sosialisasi Peluang Beasiswa Studi di Jepang Kepada Siswa/I SMA Negeri 1 Medan

HAMZON SITUMORANG , YULIANTA SIREGAR , ALIMANSYAR , RIKY STEPANUS SITUMORANG , DIMAS FRANANTA

2024

## MATA GARUDA LEMBAGA PENGELOLA DANA PENDIDIKAN PROVINSI SUMATERA UTARA

YULIANTA SIREGAR , NURMAN HASIBUAN

2023

Ipteks Bagi Masyarakat

## Pelatihan Smart Energi Di Lingkungan Sekolah

RISWAN DINZI , NISMAH PANJAITAN , RAJA HARAHAAP , YULIANTA SIREGAR , SUHERMAN

2022

Ipteks

## Pelatihan Pembuatan Radar Pendeteksi Objek Untuk Pintu Otomatis Dengan Menggunakan Arduino

FAKHRUDDIN RIZAL BATUBARA , RAJA HARAHAAP , FERRY RAHMAT ASTIANTA BUKIT , SHEYLIN WIMORA LUMBAN TOBING , YULIANTA SIREGAR , SOEHARWINTO , MUHAMMAD ZULFIN , TIGOR HAMONANGAN NASUTION , MUHAMMAD SAFRIL , HENDRA ZULKARNAIN

2013

## Panitia Pengawasan Penyelenggaraan Ujian Nasional

YULIANTA SIREGAR

2013

## Survey Integritas Layanan Publik di PT.PLN (persero) Wilayah Sumatera Utara, PT.PLN (persero) Wilayah aceh dan PT.PLN (persero) Wilayah Riau dan

## Intellectual Property Rights

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2025

Paten nasional

### **Panel surya pelacak sinar matahari**

RISWAN DINZI , FERRY RAHMAT ASTIANTA BUKIT , YULIANTA SIREGAR , SAHRUDDIN RAMBE

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2023

Paten nasional

### **RANCANG BANGUN PERANGKAT PENETAS TELUR DENGAN PEMANAS RESISTOR BERBASIS KONTROLER PID**

YULIANTA SIREGAR

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2022

Paten nasional

### **Alat Purifikasi Minyak Trafo**

YULIANTA SIREGAR , HENDRA ZULKARNAIN

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2022

Paten nasional

### **Alat Ukur Karbon Monoksida Untuk Kebocoran Kabin Mobil**

YULIANTA SIREGAR

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2021

Hak cipta nasional

### **Simulasi Artificial Bee Colony (ABC) Untuk Optimasi Penempatan Dan Kapasitas Static Synchronous Compensator (Statcom)**

YULIANTA SIREGAR

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2021

Hak cipta nasional

### **Simulasi Optimasi Static Var Compensator Dan Thyristor Controlled Series Capacitor Dengan Artificial Bee Colony**

YULIANTA SIREGAR

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2020

Hak cipta nasional

### **Aplikasi Simulasi Rekonfigurasi Jaringan Sistem Distribusi Dengan Artificial Bee Colony (ABC)**

ZULKARNAEN PANE , YULIANTA SIREGAR

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