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Prof. Dr. Drs. Syahrul Humaidi, M.Sc was born in Rantau Prapat on May 17, 1965, and is a physics lecturer. He also holds the position of Head of the Master's Program in Physics and the Doctoral Program in Physical Science at Universitas Sumatera Utara. He completed his final degree, a doctoral degree in physics, at USU in 2017.

Publications

2026
Jurnal internasional bereputasi

Investigation of Mn-Modified Bimetallic ZIF-67 Structures as Supercapacitors

ERNA FRIDA , ADY FRENLY SIMANULLANG , SYAHRUL HUMAIDI , TULUS NA DUMA , Ni Luh Wulan Septiani

2026
Jurnal internasional bereputasi

Sm2O3-induced superconductivity enhancements in bulk Y-123 ceramics synthesized via a novel modified thermal decomposition method

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Jurnal internasional bereputasi

Design and Development of a Water Flow Monitoring Device using Mitsubishi FX3U-14MT PLC

DOLI BONARDO , Dr. KERISTA TARIGAN, M.Eng.Sc. , HERRI TRISNA FRIANTO , SYAHRUL HUMAIDI , DADAN RAMDAN , FAUZAN AMRI

2026
Buku referensi

Robotika dan Otomasi Pintar (Sistem Kontrol Berbasis AI)

DOLI BONARDO , HERRI TRISNA FRIANTO , SYAHRUL HUMAIDI

2026
Prosiding seminar internasional

Optimization synthesis and characterization of silica nanoparticles (SNPs) from rice husk ash for sustainable environmental material

TIMBANGEN SEMBIRING , SUSILAWATI , PERDINAN SINUHAJI , ERNA FRIDA , SYAHRUL HUMAIDI , HARIYATI LUBIS , ISMAIL AB

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Frequency response-based optimization of PID controllers for enhanced fluid control system performance

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The Influence of Yttrium Doping on The Microstructure and Magnetic Properties of Barium Hexaferrite

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Exploring the impact of ambient annealing on the superconducting properties of Y-123 with marine waste-derived chitosan additives

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Preparation and characterization of barium hexaferrite via the solid-state reaction method

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Recent advances in silver oxide-based superconductors: characterization, challenges and theoretical progress

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Polyethylene glycol-magnetite composite encapsulated concrete as a thermal energy storage

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Thermal Characterization on Asphalt Modification with Polyethylene and Polyethylene Grafted Maleic Anhydride

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Thermal Characterization on Asphalt Modification with Polyethylene and Polyethylene Grafted Maleic Anhydride

WINSYAH PUTRA RITONGA , SYAHRUL HUMAIDI , MOTLAN , EDDIYANTO

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Comparing study of electrical transport properties of bulk Y-123 synthesized by modified wet and dry synthesis methods

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Overcurrent effects on copper insulated PVC cables and fire resistance via thermal imaging and macrostructure analysis

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Jurnal internasional bereputasi

Comparison of the Effectiveness of the Coprecipitation Method for SiO_2 Extraction from Natural Pahae Zeolite and Palm Oil Boiler Ash

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Jurnal internasional bereputasi

ENCAPSULATION OF PHASE CHANGE MATERIAL–MAGNETITE (Fe_3O_4) COMPOSITE IN NOVEL COPPER TUBE CONFIGURATION (VERTICAL AND HORIZONTAL) FOR THERMAL STORAGE APPLICATION

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Paraffin and magnetite composite for thermal management applications

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Characteristics of Rainfall Influence Indian Ocean Dipole (IOD) and Madden Julian Oscillation (MJO) Phenomena Based on Machine Learning in Deli Serdang Region

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Convective clouds classification based on weather forecast for air traffic flow management in Kualanamu Airport

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Convective clouds classification based on weather forecast for air traffic flow management in Kualanamu Airport

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Jurnal internasional bereputasi

Phase formation, microstructural and superconducting properties of YBCO added Ca-compounds extraction eggshells

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Jurnal internasional bereputasi

Study of Crystal Structure, Lattice Strain, and Elemental Content of Natural Iron Sand Nanoparticles Synthesized by the Coprecipitation Method

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Tulisan ilmiah

Karakteristik dan Klasifikasi Awan Konvektif Menggunakan Satelit Himawari dengan Pendekatan Model Convolution Neural Network untuk Mitigasi Keselamatan Penerbangan di WilayahÂ ...

MARZUKI SINAMBELA , SYAHRUL HUMAIDI , SUNARDI

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Enhancing superconducting properties of YBa2Cu3O7- δ through Nd2O3 addition prepared using modified thermal decomposition method

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Application of Convolutional Neural Networks (CNN) for Optimizing Route Changes Based on Dynamic Weather Conditions and Travel Time

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Aplication of Convolutional Neural Networks for optimizing route changes bast on Dynamic weather conditions and travel time

SUNARDI , MARZUKI SINAMBELA , SYAHRUL HUMAIDI , MARHAPOSAN SITUMORANG

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Adsorption Mechanism of Heavy Metals Using Activated Carbon Derived from

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Adsorption Mechanism of Heavy Metals Using Activated Carbon Derived from Hydrilla Verticillata.

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DEVELOPMENT OF A MATHEMATICAL MODEL FOR MANAGING SCHEDULE DELAYS IN AIR TRAFFIC OPERATIONS

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Development of a mathematical model for managing schedule delays in air traffic operations

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Spatial evaluation rainfall estimation on weather radar using Marshall–Palmer reflectivity–rainfall rate in Banten

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Effect of Sintering Temperature on AC Susceptibility and Superconducting Properties of (Bi1.6Pb0.4)Sr2CaCu2O8 Superconductor

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UV Exposure Time Optimization for Enhanced Conversion, Hardness, and Flexural Strength in UDMA/TEG-DMA Composite Resins

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Enhanced Cancer Biomarker Detection using Fe3O4 Magnetic Nanoparticles: Synthesis, Surface Modifications and Diagnostic Applications: A Review

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Fluctuation induces conductivity and microstructural studies in Y-123: Effect

of CaO inclusion

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Study and characterization of BaFe<inf>12</inf>O<inf>19</inf>/PVDF composites as electrode materials for supercapacitors

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Effect of graphite as filler on conductive polymer composites based on corn starch and liquid natural rubber on its electric conductivity properties

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Thermoelectric material based on ti doped CuCrO2 by sol-gel method

NONI SURTIANA SILALAHI , SYAHRUL HUMAIDI

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Microstructural and excess conductivity properties of Y-123: effect of organic polymer chitosan inclusion

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Effect of BaCO3 addition on critical temperature of Bi-Pb-Sr- Ca-Cu-O superconductor

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Preparation of Hydrilla Verticillata activated carbon adsorbent for remediation of wastewater containing the active metal chromium

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Preparation of hydrilla verticillata activated carbon adsorbent for remediation of wastewater containing the active metal chromium

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Electrochemical Performance of Na2Mn3O7 as a Cathode Material in Sodium-Ion Batteries Using the Precipitation Method with Ethylene Glycol Chelating Agent

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Effect of Co doping on the synthesis of CuCrO<inf>2</inf>materials using

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Investigating the Impact of Polyvinyl Alcohol Addition on the Thermal Behavior and Chemical Structure of Electrospun Cellulose Nanofibers

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The effectiveness of activated carbon from nutmeg shell in reducing ammonia (NH3) levels in fish pond water

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Palm Oil Fuel Ash and Fly Ash for a Partial Replacement of Cement in High-Quality,Environmentally Friendly Mortar as a Solution to Industrial Wast

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Spatial evaluation rainfall estimation on weather radar using Marshallâ Palmer reflectivityâ rainfall rate in Banten

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Experimental Study on Capillarity and Thermal of Metal Foam as the Wick Structure in Heat Pipe Application

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Experimental study on capillarity and thermal of metal foam as the wick structure in heat pipe application

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Response of Geologic Units to The Ground Parameters of Tarutung Earthquake 2022 Mw 5.8 : A Preliminary Study

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Effect of calcination frequency on the thermoelectric properties of Ti doped CuCrO2by solid state method

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ANALYSIS OF MINERAL CONTENT AND MAGNETIC PROPERTIES OF IRON SAND OF BAH BOLON SIMALUNGUN RIVER, NORTH SUMETERA

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Annealing temperature effects on the size and band gap of ZnS quantum dots fabricated by co-precipitation technique without capping agent

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INDENTIFICATION OF CHICKEN IN CHICKEN, BEEF AND LAMB EXPERIMENTS USING CONDUCTING POLYMER SENSOR SERIES AND KOHONEN ALGORITHM METHOD

MARHAPOSAN SITUMORANG , BENRAD EDWIN SIMANJUNTAK , Marzuki Sinambela , SYAHRUL HUMAIDI

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Jurnal nasional terakreditasi

Characterization of Meteorological Drought Using Standardized Precipitation Index and Standardized Precipitation Evapotranspiration Index Methods in North Sumatera

FANLY PARHIMPUNAN MANULLANG , SYAHRUL HUMAIDI , DEASSY EIRENE DIANA DOLOKSARIBU , Dr. KERISTA TARIGAN, M.Eng.Sc. , MARHAPOSAN SITUMORANG , YAHYA DARMAWAN

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CHARACTERIZATION OF ASPHALT MODIFICATION USING GROUND RUBBER AND REACTIVE RUBBER NR-g-MA AS COMPATIBILIZER

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Synthesis and Electrochemical Characterization of Sodium-Ion Battery Anode Carbon Biomassa Based on Sunflower Seed Husk (Helianthus annuus)

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2023

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Synthesis and characterization of nanocomposites Fe3O4-ZnO

JULIANDI SIREGAR , SYAHRUL HUMAIDI , KERISTA SEBAYANG , ZURIAH SITORUS , BRIAN YULIARTO

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Preparation and characterization of liquid natural rubber modified asphalt by using wet mixing method

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1-Dimensional Model of Seismic Velocity after Tarutung Earthquake 1 October 2022 Mw 5.8

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Faulting Mechanism of Tarutung Earthquake 2022 Mw 5.8Using Moment Tensor Inversion:A Preliminary Study

SYAHRUL HUMAIDI , ENDAH PUSPITA SARI

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Annealing temperature efects on the size and band gap of ZnS quantum dots fabricated by coâ€‘precipitation technique without capping agent

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Synthesis and characterization of WO3 sensitive layers for NO2 gas sensor application

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Manufacture of Lithium Lanthanum Titanate Active Material as a Lithium-Ion Capacitor Anode Using Solid-State Reaction Methods

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Synthesis And Characterization Of Nanocomposites Fe3O4- ZnO

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Rainfall Characteristics In Medan City With Pearson Correlation Analysis (Case Study Of February 27, 2022)

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EFFECT OF SURFACE COATING ON CHANGES IN MASS AND HEAT RATE ON HYDROPHOBIC LAYER COATED METAL FOAM

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Enhanced superconducting transition temperature for Cr-substituted Tl2Ba2CaCu2O8-Î´

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Cyclic Oxidation Resistance of MoSi2 Added FeCrAlTiY Coatings on ST41 Steel at 700oC Prepared by a Flame Spraying Technique

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AC Susceptibility and Electrical Properties of Ta-Substituted (TlTa)SrCaCuO Superconductor

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Physical and Chemical Properties of Modified Asphalt with Post Consumer Polyethylene in the Presence of Reactive Polymer

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Surface treatment on metal foam wick of a ferrofluid heat pipe

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Manufacture of Solid Polymer Electrolyte (SPE) Based on PVDF HFP-LiBOB

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Researches

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Kerjasama Luar Negeri dan Publikasi Internasional

Analysis of Current Density and Critical Temperature Fluctuation on High Temperature Superconductor Based Tl-2212

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Penelitian Tim Pasca Sarjana

Pengaruh Penambahan MnO2 terhadap Peningkatan Temperatur Kritis Superkonduktor Suhu Tinggi CuCrO2

SYAHRUL HUMAIDI , NURUL MAULIDA RAHMAHYANI NST

2022
Penelitian Disertasi Doktor

Modifikasi Aspal Dengan Karet Ban Bekas Menggunakan Bahan Penyerasi Karet Alam Fungsional Maleat Anhidrat NR-g-MA.

SYAHRUL HUMAIDI , WINSYAHPUTRA RITONGA

2022
Kerjasama Luar Negeri dan Publikasi Internasional

WCU Modiifikasi Proses Sintering Terhadap Peningkatan Temperatur Kritis Superkonduktor Suhu Tinggi Bi1.6Pb0,4 Sr2Ca1-x Mx Cu2O8 (M=Ce,Na,Mg)

SYAHRUL HUMAIDI

2022
Penelitian Tim Pasca Sarjana

Pembuatan Nanopartikel Magnesium Ferrite Sebagai Penyerap Limbah Ion Logam Berat Timbal dan Tembaga dengan Metode Co-Presipitasi

SYAHRUL HUMAIDI , SHIAMNY NUR KHAIR TARIGAN

2022
Penelitian Disertasi Doktor

Pendekatan Model Artificial Neural Network Menggunakan Satelit Himawari 8 untuk Meningkatkan Keamanan Jalur Penerbangan di Sumatera Utara

SYAHRUL HUMAIDI , SUNARDI

2021
Penelitian Disertasi Doktor

PREPARASI DAN KARAKTERISASI KAIN DENGAN SIFAT SELFCLEANING DAN ANTIBAKTERI MENGGUNAKAN NANOKOMPOSIT ABU BOILER KELAPA SAWIT DAN TITANIUM DIOKSIDA SERTA KITOSAN

SYAHRUL HUMAIDI , ERNA FRIDA , PERDINAN SINUHAJI

2020
Penelitian Tim Pasca Sarjana

Pengaruh Waktu Milling (Milling Time) dan Penambahan FeMn terhadap Kekerasan dan Sifat Magnet Barium Heksaferit

SYAHRUL HUMAIDI , LIDIA PUSPITA SARI SAGALA

2020
Penelitian Tim Pasca Sarjana

Pembuatan Sensor Gas Beracun (Toxid) Berbahan Dasar Timah Oksida (SnO2)

SYAHRUL HUMAIDI , DOLI BONARDO

2020
Penelitian Tim Pasca Sarjana

Pembuatan Sensor Gas Beracun (Toxid) Berbahan Dasar Timah Oksida (SnO2)

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2020
Penelitian Fundamental

Penggunaan Penstabil Tegangan Sebagai Penghemat Energi pada Proses Sterilisasi Susu Sapi dengan Metode Ignition Coil

Dr. KERISTA TARIGAN, M.Eng.Sc. , SYAHRUL HUMAIDI

2019
Penelitian Tim Pasca Sarjana

Pengaruh Penggantian Atom (Be, Mg, Ra dan Li) dan Modifikasi Pembuatan Sampel terhadap Peningkatan Temperatur kritis Bahan Superkonduktor BPSCCO-2223

Dr. KERISTA TARIGAN, M.Eng.Sc. , SYAHRUL HUMAIDI

2014
Penelitian Disertasi Doktor

Pengaruh Penambahan Cr2O3 terhadap Peningkatan Temperatur Kritis dan Kestabilan

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Intellectual Property Rights

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Robotika dan Otomasi Pintar (Sistem Kontrol Berbasis AI)

DOLI BONARDO , HERRI TRISNA FRIANTO , SYAHRUL HUMAIDI

2025
Paten nasional

Metode Pembuatan Nano Adsorben untuk Remediasi Air Tercemar Logam Berat

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Proses Pembuatan Bio Baterai Berbasis Hasil Fermentasi Limbah Jeruk Manis (sitrus sinensis)dan Baterai Bekas Yang Ditambahkan Gel PVA (Poly Vinyl Alcohol)

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Metode Untuk Meningkatkan Temperatur Kritis Pada Bahan Superkonduktor Suhu Tinggi (TlBa2CaCu2O8-d) Dengan Penambahan Cr2O3

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