Prof. Dr. Dra Erna Frida, M.Si

Lecturer of Program Studi S3 Fisika Study Program
Fakultas Matematika Dan Ilmu Pengetahuan Alam
Universitas Sumatera Utara

ernafridatarigan@usu.ac.id

USU Faculty of Mathematics and Natural Sciences

fmipa.usu.ac.id/en/lecturer/erna-frida

Prof. Dr. Erna Frida, M.Si was born in Juhar on January 23, 1964. Currently, she is a Physics lecturer at Universitas Sumatera Utara. She completed her last education at the doctoral level.

Publications

2025
Jurnal internasional bereputasi

Review of fire-retardant nanocomposite coating based on TiO2 (titanium dioxide)-MMT (montmorillonite)-CNF (cellulose nanofibers)

ETY JUMIATI, S.PD, M.SI , ERNA FRIDA

2025
Jurnal internasional bereputasi

Comparison of the Effectiveness of the Coprecipitation Method for SiO2 Extraction from Natural Pahae and Palm Oil Boiler Ash

FYNNISA. Z , ERNA FRIDA , SUSILAWATI , SYAHRUL HUMAIDI , ING JOHANNES TARIGAN , EVA MARLINA GINTING

2025
Jurnal internasional bereputasi

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

ERNA FRIDA , ING JOHANNES TARIGAN , FYNNISA. Z , SYAHRUL HUMAIDI , SUSILAWATI , EVA MARLINA GINTING

2025
Jurnal internasional bereputasi

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

FYNNISA. Z , ERNA FRIDA , SUSILAWATI , EVA MARLINA GINTING , SYAHRUL HUMAIDI , ING JOHANNES TARIGAN

2025
Jurnal internasional bereputasi

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

ERNA FRIDA , FYNNISA. Z , SUSILAWATI , EVA MARLINA GINTING , SYAHRUL HUMAIDI , ING JOHANNES TARIGAN , FYNNISA Z

2025
Jurnal internasional bereputasi

Synthesis of Fe3O4–Zingiber officinale extract/ZnO/OA/DMSO ferrofluid as antimicrobial agent

ERNA FRIDA , ARIF HIDAYAT , NASIKHUDIN , RATNAWULAN , AHMAD TAUFIQ , DEA BERLIANA RAMADHANI , MUNASIR

2025
Jurnal internasional bereputasi

FabricationandCharacterizationofPectin-ChitosanEdibleCoatings withaCosmoscaudatusLeafExtractforTomatoPreservation

ERNA FRIDA , ZURIAH SITORUS , EMITA BR SEMBIRING , TIMBANGEN SEMBIRING

2025
Jurnal internasional bereputasi

Eco-friendly alginate/PCL-TiO hybrid biocomposites: Preparation, properties, and methylene blue photodegradation

ISTIQOMAH RAHMAWATI , ERNA FRIDA , EMMA ROCHIMA , BUNGA FISIKANTA BUKIT

2024
Jurnal internasional bereputasi

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

ERNA FRIDA , SYAHRUL HUMAIDI , SUSILAWATI

2024
Jurnal internasional bereputasi

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

ENDA RASILTA BR. TARIGAN , ERNA FRIDA , SYAHRUL HUMAIDI , SUSILAWATI

2024
Jurnal nasional terakreditasi

Characterization of Low-Density Polyethylene (LDPE) Thermoplastics with Rice Husk Ash Nanosilica Filler Synthesized Using the Coprecipitation Method

SAHRINAH , ERNA FRIDA

2024
Jurnal nasional terakreditasi

Proccessing Solid Waste from Cabbage Vegatables and Cow Rumen Contents into Liquid Organic Fertilizer (LOF) in Semangat Village, Merdeka District, Karo Regency

ERNA FRIDA

2024
Prosiding seminar internasional

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

ENDA RASILTA BR. TARIGAN , ERNA FRIDA , SYAHRUL HUMAIDI , SUSILAWATI

2024
Prosiding seminar internasional

Examination of the Effectiveness of Orange Peel Pectin and Chitosan as Edible Coating Materials for Tomato Fruit (Lycopersicum esculentum Mill.)

ERNA FRIDA , ZURIAH SITORUS , TIMBANGEN SEMBIRING

2024
Prosiding seminar internasional

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

ERNA FRIDA , SYAHRUL HUMAIDI , SUSILAWATI

2024
Jurnal internasional bereputasi

Hydrophobic and antibacterial properties of textiles using nanocomposite chitosan and SiO2 from rice husk ash as-coating

AHMAD TAUFIQ , RATNAWULAN , ERNA FRIDA

2024
Jurnal internasional bereputasi

South African Journal of Chemical Engineering

RATNAWULAN , ERNA FRIDA , AHMAD TAUFIQ , Zulkifli , Kurnia Dwi Yuliani , DETTY RAHMADHANI

2024
Jurnal nasional terakreditasi

Manufacturing and Characterization of Composite Boards from Corn Husk Fiber, Water Hyacinth Fibers, and Sawdust Using Epoxy Resin

ERNA FRIDA

2023
Prosiding seminar internasional

The effect of pressure strength of porous concrete on the addition of natural pahae zeolite as a partial replacement of cement

FYNNISA. Z , ERNA FRIDA , NURDIN BUKIT , SUSILAWATI

2023
Prosiding seminar internasional

The effect of pressure strength of porous concrete on the addition of natural pahae zeolite as a partial replacement of cement

ERNA FRIDA , FYNNISA. Z , SUSILAWATI

2023
Prosiding seminar internasional

The effect of pressure strength of porous concrete on the addition of natural pahae zeolite as a partial replacement of cement

FYNNISA. Z , ERNA FRIDA , SUSILAWATI , FYNNISA Z , HATTA MAULANA ZEBUA

2023
Jurnal nasional terakreditasi

ANALYSIS OF ATMOSPHERIC DYNAMICS DURING TAILWIND PHENOMENA ON THE RUNWAY OF KUALANAMU AIRPORT

ERNA FRIDA , NENSY NINDY TAMBUNAN , YAHYA DARMAWAN

2023
Jurnal internasional bereputasi

THERMAL ANALYSIS AND MICROSTRUCTURE OF CARBON BLACK NANOPARTICLES FROM COCONUT SHELLS

ERNA FRIDA

2023
Jurnal nasional terakreditasi

Projection of Tourist Climate Comfort Level Period 2031-2050 in Caldera Toba Geopark

YAHYA DARMAWAN , ERNA FRIDA , MARHAPOSAN SITUMORANG , SYAHRUL HUMAIDI , ALFONSIUS CHRISANDY P. SIREGAR , MARZUKI SINAMBELA

2023
Jurnal nasional terakreditasi

Projection of Climate Change on the Probability of Dengue Hemorrhagic Fever in North Sumatra Province

SYAHRUL HUMAIDI , MARHAPOSAN SITUMORANG , THERESIA GREFYOLIN SIMBOLON , MARZUKI SINAMBELA , ERNA FRIDA , YAHYA DARMAWAN

2023
Jurnal internasional bereputasi

Analysis of Coal Boiler Ash Content and Palm Shell Boiler Ash as a Cementitious Material in ECC Mortar

ERNA FRIDA , SYAHRUL HUMAIDI

2023
Jurnal internasional bereputasi

New Material Nanocomposite Thermoplastic Elastomer with Low Cost Hybrid Filler Oil Palm Boiler Ash/Carbon Black

ERNA FRIDA , BUNGA FISIKANTA BUKIT , NURDIN BUKIT

2023
Jurnal internasional bereputasi

Effect of Hybrid Filler Oil Palm Boiler Ash â Bentonite on Thermal Characteristics of Natural Rubber Compounds

ERNA FRIDA

2022
Jurnal internasional bereputasi

Preparation of Environmentally Friendly Adsorbent using Oil Palm Boiler Ash, Bentonite and Titanium Dioxide Nanocomposite Materials

2022
Jurnal internasional bereputasi

Preparation of Environmentally Friendly Adsorbent using Oil Palm Boiler Ash, Bentonite and Titanium Dioxide Nanocomposite Materials

ERNA FRIDA

2022
Jurnal internasional bereputasi

The development of a novel FM nanoadsorbent for heavy metal remediation in polluted water

ERNA FRIDA

2021
Jurnal internasional bereputasi

Data on characterization, model, and adsorption rate of banana peel activated carbon (Musa Acuminata) for adsorbents of various heavy metals (Mn, Pb, Zn, Fe)

ERNA FRIDA

2020
Jurnal internasional bereputasi

Microstructure and thermal properties of natural rubber compound with palm oil boilers ash for nanop

ERNA FRIDA

2019
Jurnal internasional bereputasi

The effect of carbon black composition in natural rubber compound

ERNA FRIDA

2019
Jurnal internasional

Preparation And Characterization Of Oil Palm Empty Bunches Powder As A Filler Of Polypropylene/Natural Rubber

ERNA FRIDA

2019
Jurnal internasional bereputasi

Preparation and characterization of oil palm ash from boiler to nanoparticle

ERNA FRIDA

2018
Prosiding seminar internasional

Mechanical properties of composite thermoplastic hdpe / natural rubber and palm oil boiler ash as a

ERNA FRIDA

2018
Prosiding seminar nasional

SIFAT MEKANIS TERMOPLASTIK POLIPROPILENA/KARET SIR 20 DENGAN FILLER NANOPARTIKEL ABU TANDAN KOSONG KELAPA SAWIT

ERNA FRIDA

2018
Jurnal nasional terakreditasi

Analisis kekuatan asphalt concrete wearing course (AC-WC) dengan serbuk ban bekas sebagai zat aditif

ERNA FRIDA

2017
Prosiding seminar internasional

Mechanical properties and mophology natural rubber blend with bentonit and carbon black

ERNA FRIDA

2016
Jurnal nasional terakreditasi

ANALYSIS THERMAL OF THERMOPLASTIC ELASTOMER WITH FILLER POWDER WASTE TIRE

ERNA FRIDA

2014
Jurnal nasional terakreditasi

The effect zeolite addition in natural rubber polypropylene composite on mechanical, structure, and thermal characteristics

ERNA FRIDA

2013
Jurnal nasional terakreditasi

Pengolahan ban bekas berwawasan lingkungan menjadi bahan bamper pada outomotif

ERNA FRIDA

2010
Jurnal nasional

Proses Pengolahan Ban Bekas Menjadi Serbuk Ban Bekas (Crumb Rubber) Yang Digunakan Sebagai Pengisi (Filler)

ERNA FRIDA

2008
Jurnal nasional

Pengaruh Arah Serat Bambu Sebagai Bahan Komposit Laminat Pada Pengujian Impak

ERNA FRIDA

Researches

2023
Kerjasama Luar Negeri dan Publikasi Internasional

Modification of Sintering Temperature to the increase of Critical Temperature Bi1.6Pb0,4 Sr2Ca1-x Mx Cu2O8 High Temperature Superconductor

MUHAMMADIN HAMID , SYAHRUL HUMAIDI , ERNA FRIDA

2023

PENGEMBANGAN TEKSTIL SUPERHIDROFOBIK DAN ANTI MIKROBA DARI NANOPARTIKEL LIMBAH PERTANIAN

RATNAWULAN , ERNA FRIDA , AHMAD TAUFIQ

2021
Penelitian Unggulan Perguruan Tinggi

Pengolahan tempurung kelapa menjadi nano partikel karbon hitam sebagai bahan pengisi nano komposit termoplastik elastomer

ERNA FRIDA

2021
Penelitian Unggulan Perguruan Tinggi

Pembuatan adsorben limbah cair dari nanokomposit Abu boiler kelapa sawit dan bentonit serta TiO2

ERNA FRIDA

2019
Penelitian Unggulan Perguruan Tinggi

Pembuatan Nano Partikel Dari Abu Boiler Kelapa Sawit Sebagai Bahan Pengisi Nano Komposit Termoplastik HDPE Dengan Karet Alam

ERNA FRIDA

Community Services

2022
Ipteks Bagi Masyarakat

PENGOLAHAN LIMBAH PADAT SAYURAN KUBIS DAN ISI RUMEN SAPI MENJADI PUPUK ORGANIK CAIR (POC) DI DESA SEMANGAT KECAMATAN MERDEKA KABUPATEN KARO

ERNA FRIDA

2020
Ipteks Bagi Wilayah

PENERAPAN MESIN PENGUPAS BUAH KOPI BASAH DI DESA BARUJULU KECAMATAN BARUSJAHE KABUPATEN KARO

ERNA FRIDA

2019

Pembuatan Krim/Balsem Dengan Bahan Dasar Serai

NURBETI , ERNA FRIDA

2014

Kegiatan Pembekalan Pengungsi Erupsi Gunung Sinabung di Posko Eks Universitas Karo dan Gereja GBKP Simpang Enam Kabanjahe

KRISTA SURBAKTI , ERNA FRIDA

Intellectual Property Rights

2024
Paten nasional

PROSES PEMBUATAN NANO PARTIKEL ABU BOILER KELAPA SAWIT (ABKS) DENGAN PROSES KOPRESIPITASI DAN SINTESIS DENGAN POLYETHYLENE GLYCOL (PEG) 6000

ABD HAKIM S , ERNA FRIDA , BUNGA FISIKANTA BUKIT , KARYA SINULINGGA

2022
Paten nasional

Proses Pembuatan Nano Partikel Abu Boiler Kelapa Sawit

ERNA FRIDA

2022
Paten nasional

PROSES DAN KOMPOSISI PARTIKEL TERMOPLASTIK HIGH DENSITY POLIETHYLENE (HDPE) NANO Fe3O4 SEBAHGAI BAHAN PENGISI

ERNA FRIDA

2020
Hak cipta nasional

TERMOPLASTIK ELASTOMER DENGAN BAHAN PENGISI NANO PARTIKEL ABU TANDAN KOSONG KELAPA SAWIT

ERNA FRIDA

2020
Paten nasional

Proses Pembuatan Material Nano Komposit Termoplastik High Density Poliethylen(HDPE) dengan Bahan Pengisi Abu Sekam Padi Berukuran Nano

ERNA FRIDA

2020
Paten nasional

Proses pembuatan Isolator Listrik Berbasis Polimer Berbahan Resin Epoksi , Karet Silikon dan Abu Sabut Kelapa

ERNA FRIDA

2019
Hak cipta nasional

KARAKTERISTIK NANO KOMPOSIT TERMOPLASTIK HDPE

ERNA FRIDA

2019
Paten nasional

PENGOLAHAN PASIR BESI MENJADI NANO PARTIKEL Fe3O4 SEBAGAI BAHAN PENGISI NANO KOMPOSIT TERMOPLASTIK HDPE

ERNA FRIDA