

Prof. Riswanti Sigalingging, STP., M.Si., Ph.D

Lecturer of Undergraduate Program in Agricultural and Biosystem Engineering Study Program
Faculty of Agriculture
Universitas Sumatera Utara

✉ riswanti@usu.ac.id

🏢 Department of Agricultural and Biosystems Engineering, Faculty of Agriculture, USU

🌐 fp.usu.ac.id/en/lecturer/riswanti-sigalingging

Riswanti is a professor at the Department of Agricultural and Biosystems Engineering, Universitas Sumatera Utara, Indonesia. She obtained a Ph.D. degree from Engineering of Agricultural Technological Systems, Department of Mechanical Engineering, Czech University of Life Sciences, Prague (CULS), and her master degree from Bogor Agricultural University, Indonesia, focusing on Energy and Electricity (Renewable Energy), Analysis Energy and Exergy Biodiesel Production from CPO (Crude Palm Oil). She got an internship from INSA Rennes, France in the Department of Mechanical and Control Systems Engineering. Riswanti has been focusing her research on bioenergy, biogases for instance, biodiesel, bio ethanol, pyrolysis, gasification and Life Assessment Analysis of Crops and manufacturing.

Her expertise lies in Renewable Energy Engineering and Agricultural Electrification, with a strong research focus on the development and application of sustainable energy technologies in the agricultural sector. She has conducted extensive studies on bioenergy production, non-catalytic biodiesel processes, and the design of innovative reactor systems to improve energy efficiency and environmental sustainability.

Her work also explores the integration of renewable energy with agricultural systems, including energy demand prediction using deep learning methods, the utilization of biomass and agricultural waste for energy production, and the application of bio-based materials for energy storage and bio-battery development. Through her research, she aims to advance cleaner energy solutions that not only enhance agricultural productivity but also contribute to global efforts in achieving sustainability and reducing reliance on fossil

Publications

2026

Buku referensi

Dasar Termodinamika untuk Teknik Pertanian dan Biosistem

RISWANTI SIGALINGGING , CANDRA SIGALINGGING

2025

Jurnal nasional terakreditasi

PENERAPAN MESIN TEKNOLOGI PASTEURISASI SUSU KAMBING PADA UMKM TANAH JAWA DI SIMALUNGUN

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Community service to increase red chilli economic value with post-harvest technology at Poktan Berkah Tani, Pulau Gambar Village, Serbajadi District, Serdang Bedagai District

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Jurnal internasional bereputasi

Modelling of energy demand prediction system in potato using deep learning method. Res

RISWANTI SIGALINGGING , NOVERITA SPRINSE VINOLINA , LUKMAN ADLIN HARAHAHAP , NASHA PUTRI SEBAYANG

2024

Prosiding seminar internasional

Study of Variations in Light Intensity and Length of Light Emitting Diode on the Growth and Productivity of Pak Choi Plants

RAGIL ARDIANI RITONGA , RISWANTI SIGALINGGING

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Palm oil mill effluent variation stage treatment methods to reduce organic matter in biogas production

RISWANTI SIGALINGGING , EKA GEOVANI TAMPUBOLON

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Jurnal nasional terakreditasi

Penerapan Teknologi Pengemasan Menggunakan Mesin Vacum Sealer Dan Countinuous Band Sealer Pada Produk UMKM Ladang Bambu

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Prosiding seminar internasional

Photovoltaics Efficiency on Automatic Fish Feeding Distributors Device Using Internet of Things

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Jurnal internasional

Study of Fruit Waste as Bio-battery Materials for Alternative Electricity

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Prosiding seminar internasional

Potato cultivation energy ratio in Food Estate, Hutajulu, North Sumatra, Indonesia

LUKMAN ADLIN HARAHAHAP , RISWANTI SIGALINGGING , CANDRA SIGALINGGING

2024

Prosiding seminar internasional

The effect of NPK fertiliser on oil palm coefficient as a baseline water management during the nursery phase

SUMONO , RISWANTI SIGALINGGING

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Prosiding seminar internasional

Corn stem fiber fractionation by acid hydrolysis

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Prosiding seminar internasional

Analysis of energy used on shallot farming in Food Estate, Hutajulu, North Sumatra

RISWANTI SIGALINGGING , NOVERITA SPRINSE VINOLINA , CANDRA SIGALINGGING

2023

Jurnal nasional

Thermodynamic Analysis of Biodiesel Production with Catalyst and Non-Catalyst Process: Incase Energy Analysis

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Prosiding seminar internasional

Modelling of energy productivity prediction systems of shallots classification growth phase system using convolutional neural network

LUKMAN ADLIN HARAHAHAP , RISWANTI SIGALINGGING , NOVERITA SPRINSE VINOLINA

2023

Jurnal internasional bereputasi

Life cycle assessment of shallot farming in Food Estate Hutajulu, North Sumatra, Indonesia

LUKMAN ADLIN HARAHAHAP , RISWANTI SIGALINGGING , NOVERITA SPRINSE VINOLINA

2023

Buku lainnya

The Composition Effect of Arabica and Robusta Powder Coffee with Mixing Cocoa and Red Ginger Powder on Hedonic Values

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2023

Prosiding seminar internasional

The composition effect of arabica and robusta powder coffee with mixing cocoa and red ginger powder on hedonic values

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Purification of glycerol from biodiesel by-product by using kitchen vinegar

RISWANTI SIGALINGGING , RAJU , SULASTRI PANGGABEAN

2022

Jurnal nasional terakreditasi

Training of Banana Dodol Production at Ladang Bambu Village, Medan Tuntungan

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The effect of fermentation time on fruits as a producer electrical energy

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Jurnal internasional bereputasi

Growth and Secondary Metabolites Production of Centella asiatica (L.) Urb. Cultivated at Different Phosphate Application Rates in Acid Soil

NOVERITA SPRINSE VINOLINA , RISWANTI SIGALINGGING

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Jurnal nasional terakreditasi

Analyses of Bioactive Compounds of Pegagan (Centella Asiatica (L.) Urb) from Samosir-Indonesia Accession

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Jurnal internasional

Analyses of Bioactive Compounds of Pegagan (Centella Asiatica (L.) Urb) from Samosir – Indonesia Accession

NOVERITA SPRINSE VINOLINA , RISWANTI SIGALINGGING

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Jurnal nasional

Penyediaan Air Bersih untuk Masyarakat Desa Semangat Kecamatan Merdeka Kabupaten Karo

SAIPUL BAHRI DAULAY , HASANUDDIN , NAZIF ICHWAN , RISWANTI SIGALINGGING

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Prosiding seminar internasional

The characteristics of oil from plastic cups using various rice husk mass as fuel on integration prototype device of organic-inorganic waste

RISWANTI SIGALINGGING , EDI SUSANTO

2021
Prosiding seminar internasional

Centella asiatica tendril growth of Samosir Indonesia accession

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Prosiding seminar internasional

Centella asiatica tendril growth of Samosir Indonesia accession

NOVERITA SPRINSE VINOLINA , RISWANTI SIGALINGGING

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Prosiding seminar internasional

The effect of airflow distribution on temperature, liquid smoke, rice husk ash and plastic oil yield using prototype systems of pyrolysis equipment organic-inorganic waste

EDI SUSANTO , SULASTRI PANGGABEAN , RISWANTI SIGALINGGING

2020
Jurnal nasional terakreditasi

Organic’s living pharmacy plants cultivating in Dorema Nusantara orphanage as a repressive step in inhibiting the expansion of Coronavirus transmission in North Sumatera Province

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2020
Jurnal nasional

Organic’s living pharmacy plants cultivating in Dorema Nusantara orphanage as a repressive step in inhibiting the expansion of Coronavirus transmission in North Sumatera Province

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2019
Jurnal internasional bereputasi

Influence of porosity, permeability and expression force on oil yield of jatropha seeds.

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Jurnal internasional bereputasi

Influence of Porosity, Permeability and Expression Force on Oil Yield of Jatropha Seeds

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2018

Prosiding seminar internasional

Utilization of solar power as DC water pump movement in hydroponic plants

POPPY HONORA , RISWANTI SIGALINGGING

2017

Jurnal internasional bereputasi

Compression behaviour of bulk rapeseed: Effects of heat treatment, force, and speed

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2017

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Compression behaviour of bulk rapeseed: Effects of heat treatment, force and speed

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2017

Jurnal internasional bereputasi

Oil point and mechanical behaviour of oil palm kernels in linear compression

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2016

Monograf

Mathematical Description of Non-linear Mechanical Behaviour of Materials Under Compression Loading, Case Study: Spruce Bulk Wood Chips

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2015

Jurnal internasional bereputasi

Application of a tangent curve mathematical model for analysis of the mechanical behaviour of sunflo

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2015

Jurnal internasional bereputasi

Effect of compression speed on energy requirement and oil yield of *Jatropha curcas* L. bulk seeds und

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2015

Jurnal internasional bereputasi

Application of a tangent curve mathematical model for analysis of the mechanical behaviour of sunflower bulk seeds

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2015

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Mathematical models describing the relaxation behaviour of *Jatropha curcas* L. bulk seeds under axial compression

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2015

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Effect of compression speed on energy requirement and oil yield of *Jatropha curcas* L. bulk seeds under linear compression

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2014

Jurnal internasional bereputasi

Deformation curve characteristics of rapeseeds and sunflower seeds under compression loading

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2014

Jurnal internasional bereputasi

Tangent curve function description of mechanical behaviour of bulk oilseeds: A review

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2014

Jurnal internasional bereputasi

Deformation energy of Jatropha curcas L. seeds under compression loading

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2013

Jurnal internasional bereputasi

Mechanical behaviour of oil palm Kernels (Elaeis Guineensis)

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2013

Jurnal nasional

Testing The Number of Sprocket Groove on Coconut Fiber Mechanical Peeler

RISWANTI SIGALINGGING

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Sistem Informasi Komoditas Tanaman Pangan (Padi dan Palawija) di Kabupaten Karo

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Jurnal nasional terakreditasi

Pengabdian Masyarakat Mendukung Pengemasan Produk Olahan KWT Purnamasari, Kelurahan Jati Utomo, Binjai Utara

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Corn stem fiber fractionation by acid hydrolysis

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Jurnal nasional

PEMETAAN POTENSI ENERGI ANGIN DI SUMATERA UTARA (Mapping of Wind Energy Potential in North Sumatera Province)

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Researches

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Penelitian Unggulan Perguruan Tinggi

PENINGKATAN LISTRIK YANG DIHASILKAN GENERATOR DARI BIOGAS

SULASTRI PANGGABEAN , RISWANTI SIGALINGGING , RAJU , SARAH N.A. SIMANULLANG , SURYA ARI WIBOWO , JEREMY
TAMBUNAN

2022

DEGRADASI SERAT DARI TANAMAN JAGUNG MENJADI BIOETANOL

SULASTRI PANGGABEAN , RISWANTI SIGALINGGING , RAJU , MUHAMMAD AJIE SUKMA , YESI ALVIA , RUTH MUTIARA SITOMPUL , EPRIDA SINTA BR SEBAYANG , ROLAS ALFREDO SIMARMATA

2022

Penelitian Fundamental

Life Cycle Assessment Untuk Analisis Energi pada Sistem Digital Farming Food Estate di Desa Hutajulu, Kabupaten Tapanuli Utara, Sumatera Utara

LUKMAN ADLIN HARAHAHAP , RISWANTI SIGALINGGING , NOVERITA SPRINSE VINOLINA

2021

Penelitian Fundamental

Teknologi Peningkatan Kualitas Pegagan (*Centella asiatica*) Sebagai Tanaman Obat dan Pangan

RISWANTI SIGALINGGING , NOVERITA SPRINSE VINOLINA

2020

Penelitian Unggulan Perguruan Tinggi

Kajian Ruang Bakar Alat Pirolisis Sekam Padi dan Limbah Plastik pada Pengolahan Bahan Bakar Berbasis Limbah Anorganik

EDI SUSANTO , SULASTRI PANGGABEAN , RISWANTI SIGALINGGING

2020

Penelitian Dosen Pemula

PEMURNIAN GLISEROL HASIL SAMPING PRODUKSI BIODIESEL DENGAN ASAM ORGANIK DAN ASAM ANORGANIK

SULASTRI PANGGABEAN , RISWANTI SIGALINGGING , RAJU

2019

Penelitian Dosen Pemula

MODIFIKASI ALAT PRODUKSI BIODIESEL SECARA KATALITIK DENGAN MENGGUNAKAN STATIC MIXING REACTOR

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2019

Penelitian Unggulan Perguruan Tinggi

Kajian Ruang Bakar Alat Pirolisis Sekam Padi dan Limbah Plastik pada Pengolahan Bahan Bakar Berbasis Limbah Anorganik

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2018

Penelitian Dosen Pemula

PEMANFAATAN POTENSI PANAS BUANG KONDENSOR KULKAS MINI KOMERSIL UNTUK PENGERINGAN CHIPS TEMULAWAK

SULASTRI PANGGABEAN , RISWANTI SIGALINGGING , ADIAN RINDANG

2017

Penelitian Fundamental

Kajian Nilai Koefisien Tanaman Bibit Kelapa Sawit Varietas Tenera (*Elaeis guineensis* Jacq.) Usia Tujuh Bulan Sebelum Pindah Tanam

SUMONO , RISWANTI SIGALINGGING

Community Services

2025

Ipteks

Peningkatan Kualitas dan Daya Saing Produk Usaha Kelompok Wanita Tani

Purnama Sari, Kel. Jati Utomo Binjai Utara Melalui Pemberian Mesin Pengemas

PUTRI CHANDRA AYU , SULASTRI PANGGABEAN , RISWANTI SIGALINGGING , AINUN ROHANAH

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Ipteks Bagi Masyarakat

Pemanfaatan Teknologi Pascapanen Mendukung Usaha Hilirisasi Produk Pertanian Oleh Kelompok Wanita Tani Purnama Sari di Kel. Jati Utomo, Binjai

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Ipteks Bagi Masyarakat

PEMANFAATAN TEKNOLOGI PASCAPANEN UNTUK MENINGKATKAN NILAI EKONOMIS CABAI MERAH DI POKTAN BERKAH TANI, DESA PULAU GAMBAR, KEC. SERBAJADI

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Pengabdian Kepada Masyarakat Kelompok Ibu Rumah Tangga Kampung Ladang Bambu, Medan Tuntungan

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2019
Ipteks Bagi Masyarakat

PENGABDIAN KEPADA MASYARAKAT KELOMPOK IBU RUMAH TANGGA KAMPUNG LADANG BAMBU, MEDAN TUNTUNGAN

PUTRI CHANDRA AYU , SULASTRI PANGGABEAN , RISWANTI SIGALINGGING , ADIAN RINDANG , REVORNIATI HULU , MADINATUL ZAHRONA , MELVA LIANUR RITONGA , ELVIANA AGUSTIN , JUMADIL AKHIR HRP , MUHAMMAD RIFAI

2010
Ipteks Bagi Masyarakat

IbM Kelompok Tani Padi di Kecamatan Rawang Panca Arga

ROSITA SIPAYUNG , MARIATI , RISWANTI SIGALINGGING , ERA YUSRAINI

Intellectual Property Rights

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Hak cipta nasional

DASAR TERMODINAMIKA UNTUK TEKNIK PERTANIAN DAN BIOSISTEM

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Paten nasional

Alat Pirolisis Limbah Plastik dan Sekam Padi

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