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Universitas Sumatera Utara

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🏢 USU Faculty of Mathematics and Natural Sciences

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*Dr. Indra Masmur, S.Si., M.Si was born in Sikeben on November 05, 1976. He is a Chemistry lecturer at the Universitas Sumatera Utara. He completed his doctoral degree in Chemistry at the Universitas Sumatera Utara in 2017.*

## Publications

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2022

Jurnal internasional bereputasi

### **Effect of Different Composition of Polyethylene Oxide Polypyrrole (PEO-PPy) Nanofiber Mats on Antibacterial and Biocompatibility Properties**

INDRA MASMUR DR SSI MSI , SABARMIN PERANGINANGIN , HELMINA BR SEMBIRING

2019

Jurnal nasional

### **Empowerment of Haranggaol Subdistrict community, Haranggaol Horison District, Simalungun Regency, North Sumatra in efforts to improve local wisdom**

INDRA MASMUR DR SSI MSI , FAJAR UTAMA RITONGA

2021

Jurnal nasional terakreditasi

### **POLIURETAN MINYAK AMPAS KOPI ARABIKA ( Coffea arabica L.)**

INDRA MASMUR DR SSI MSI , MIMPIN GINTING

2022

Jurnal internasional bereputasi

### **Direct Z-scheme of n-type CuS/p-type ZnS@ electrospun PVP nanofiber for the highly efficient catalytic reduction of 4-nitrophenol and mixed dyes**

ELVRI MELLIATY SITINJAK , NEW VITA MEY DESTTY MARBUN , POLTAK EVENCUS HUTAJULU , YENNY SITANGGANG ,  
INDRA MASMUR DR SSI MSI , GOLFRID GULTOM

2019

Prosiding seminar internasional

### **Synthesis 2-(3-Phenylallylidenamino) Pentanedioic Acid by Condensation of Cinnamaldehyde with Glutamic Acid and the Activity Test as Antibacterial**

INDRA MASMUR DR SSI MSI , ANDY CANDRA , MIMPIN GINTING

2000

Hasil penelitian/pemikiran yang tidak dipublikasikan

### **Sintesis 1,9-Digliseril Nonanadioat dari Asam 1,9-Nonanadioat**

INDRA MASMUR DR SSI MSI

2009

Jurnal nasional

### **Sintesis senyawa 2-metil-2-fenil-4-metil kloro-1,3-dioksolan melalui katalisasi gliserol dengan asetofenon dan diikuti klorinasi**

INDRA MASMUR DR SSI MSI

2025

## **SUSTAINABLE ANTIBACTERIAL NANOFIBRES: ELECTROSPUN CELLULOSE ACETATE FROM OIL PALMWASTE REINFORCED WITH SILVER NANOPARTICLES**

DRA.HESTINA, m.sI , INDRA MASMUR DR SSI MSI , DANIEL

2013

Prosiding seminar nasional

## **EKSTRAKSI, UJI FITOKIMIA KOMPONEN METABOLIT SEKUNDER KULIT BATANG MBACANG BERGANG (Genus mangifera)**

SERI BIMA SEMBIRING , TONEL BARUS , INDRA MASMUR DR SSI MSI

2019

Hasil kerjasama industri yang tidak dipublikasikan

## **Analisa Kadar Asam Lemak Bebas (ALB) dari Crude Palm Oil (CPO) di Laboratorium PT. Perkebunan Nusantara IV Medan**

INDRA MASMUR DR SSI MSI

2002

Hasil penelitian/pemikiran yang tidak dipublikasikan

## **Sintesis 1, 9-Digliseril Nonanadamina Melalui Reaksi Klorinasi Terhadap Gliserol Diikuti Reaksi Aminasi Dengan 1, 9-Nonanadamina Yang Diturunkan Dari Asam Oleat**

INDRA MASMUR DR SSI MSI

2020

Jurnal internasional bereputasi

## **Self-healing composite hydrogel with antibacterial and reversible restorability conductive properties**

INDRA MASMUR DR SSI MSI , JAMARAN KABAN , MIMPIN GINTING

2022

Jurnal internasional bereputasi

## **Direct Z-scheme of n-type CuS/p-type ZnS@electrospun PVP nanofiber for the highly efficient catalytic reduction of 4-nitrophenol and mixed dyes**

YENNY SITANGGANG , INDRA MASMUR DR SSI MSI , NEW VITA MEY DESTTY MARBUN , POLTAK EVENCUS HUTAJULU , ELVRI MELLIATY SITINJAK , GOLFRID GULTOM

2025

Jurnal internasional bereputasi

## **The Utilization of Chitosan from Maggot (Hermetia illucens) Exuvia as Edible Coating for Tomatoes (Lycopersicon esculentum) and Edible Film with the Addition of Honey as an Antibacterial Agent**

EVA MARLIANA , DANIEL , SAIBUN SITORUS , SUBUR P. PASARIBU , RITA HAIRANI , RITBEY RUGA , CHAIRUL SALEH , DJIHAN RYN PRATIWI , AGUSTINA RAHAYU MAGDALENI , INDRA MASMUR DR SSI MSI , DRA.HESTINA, m.sI

2025

Jurnal nasional terakreditasi

## **Community Empowerment Through Improving Weaving Skills to Support the Achievement of Sustainable Development Goals (SDGs)**

GUSTANTO , INDRA MASMUR DR SSI MSI , TUA RAJA SIMBOLON , DIANA ALEMIN BARUS

2017

Hasil penelitian/pemikiran yang tidak dipublikasikan

## **Garam-Garam Logam Alkali Tanah Silikat Nano Pori Sebagai Adsorben Asam Lemak Bebas dari Minyak Kelapa Sawit Kasar**

INDRA MASMUR DR SSI MSI

2025

Jurnal internasional bereputasi

## **SUSTAINABLE ANTIBACTERIAL NANOFIBRES: ELECTROSPUN CELLULOSE ACETATE FROM OIL PALM WASTE REINFORCED WITH SILVER NANOPARTICLES**

INDRA MASMUR DR SSI MSI , DRA.HESTINA, m.sI , DANIEL

2023

Jurnal internasional bereputasi

## **A STUDY ON CELLULOSE FROM OIL PALM BIOMASS AS A SOURCE OF BIOETHANOL PRODUCTION**

ELVRI MELLIATY SITINJAK , INDRA MASMUR DR SSI MSI , YENNY SITANGGANG , NEW VITA MEY DESTTY MARBUN , POLTAK EVENCUS HUTAJULU

2023

Jurnal nasional terakreditasi

## **Effect of Chain Length on Fatty Alcohol Sulfation using SO<sub>3</sub>-DMF**

INDRA MASMUR DR SSI MSI

2019

Prosiding seminar internasional

## **Corrosion Inhibitors Activity of Schiff Base from Condensation of Ethylenediamine with Furfural from Sugarcane Bagasse**

MIMPIN GINTING , HERLINC SIHOTANG , INDRA MASMUR DR SSI MSI

2025

Jurnal internasional bereputasi

## **Boosting photocatalytic hydrogen generation and Photo-Destruction of Tetracycline by In-Situ oxygen vacancies ZnIn<sub>2</sub>S<sub>4</sub>**

SUBUR P. PASARIBU , HARDY SHUWANTO , JENNI LIE , HAIRUS ABDULLAH , INDRA MASMUR DR SSI MSI

2010

Jurnal nasional

## **SINTESIS SENYAWA 3-KLORO-1,2-PROPANADIOL DENGAN CARA DEKETALISASI 2-METIL-2-FENIL-4-METIL KLORO-1,3-DIOKSOLAN DALAM PELARUT TETRAHIDROFURAN**

INDRA MASMUR DR SSI MSI

2025

Jurnal internasional bereputasi

## **The Utilization of Chitosan from Maggot (*Hermetia illucens*) Exuvia as Edible Coating for Tomatoes (*Lycopersicon esculentum*) and Edible Film with the Addition of Honey as an Antibacterial Agent**

CHAIRUL SALEH , DANIEL , SAIBUN SITORUS , SUBUR P. PASARIBU , RITBEY RUGA , RITSON PURBA , AGUSTINA RAHAYU MAGDALENI , DRA.HESTINA, m.si , EVA MARLIANA , RITA HAIRANI , INDRA MASMUR DR SSI MSI , DJIHAN RYN PRATIWI

2023

Jurnal internasional bereputasi

## **Material Design of Bimetallic Catalysts on Nanofibers for Highly Efficient Catalytic Reduction of 4-Nitrophenol.**

DANIEL , INDRA MASMUR DR SSI MSI , AGUSTINA RAHAYU MAGDALENI

2025

Jurnal internasional bereputasi

## **Seaweed-Like Structure of a NiCo<sub>2</sub>O<sub>4</sub>/NiFe<sub>2</sub>O<sub>4</sub>/C Nanoelectrocatalyst: An Effective Strategy for Boosting Overall Water Splitting**

HARDY SHUWANTO , JENNI LIE , HAIRUS ABDULLAH , INDRA MASMUR DR SSI MSI , TIFFANY , Nana Septiana Nur , KAS TA RIO , SUBUR P. PASARIBU

2014

Jurnal nasional

## **Pemanfaatan dan Pengolahan Pupuk Organik Dari Limbah Tanaman Jagung Dan Kulit Coklat**

INDRA MASMUR DR SSI MSI , USWATUN HASANAH

2021

Artikel ilmiah

## **Empowerment of Food Traders Regarding Hazardous Additives for Food Towards Healthy Natural Food Products in Tanjung Morawa District**

ADIL GINTING , LINA TARIGAN , MIMPIN GINTING , SABARMIN PERANGINANGIN , INDRA MASMUR DR SSI MSI

2023

Jurnal nasional terakreditasi

## **Synthesis of Sodium Myristyl Sulfate with Myristyl Alcohol Sulfation using SO<sub>3</sub>-DMF**

INDRA MASMUR DR SSI MSI

2022

Jurnal nasional terakreditasi

## **Bioethanol Manufacturing from $\hat{I}\pm$ -Cellulose Waste of Empty Palm Oil Frugs (Elaeis guineensis jack) with Hydrolysis Concentration Variations HCl and Cellulase Enzyme**

INDRA MASMUR DR SSI MSI

2023

Jurnal internasional bereputasi

## **Facile synthesis of self-healing poly-acrylic acid/TiO<sub>2</sub> hybrid hydrogel for photocatalytic hydrogenation of 4-nitrophenol to 4-aminophenol**

INDRA MASMUR DR SSI MSI

2025

Jurnal nasional terakreditasi

## **Optimasi dan Sintesis Selulosa Dialdehid Berbasis Limbah Tandan Kosong Kelapa Sawit**

IMMANUEL SIAHAAN , FADHILA NATANIA DAMANIK , RAHEL ARGANA DOLOKSARIBU , HARDY SHUWANTO , INDRA MASMUR DR SSI MSI , ELVRI MELLIATY SITINJAK , SARI FARAH DINA , GIMELLIYA SARAGIH , POLTAK EVENCUS HUTAJULU

2025

Jurnal internasional bereputasi

## **SUSTAINABLE ANTIBACTERIAL NANOFIBRES:ELECTROSPUN CELLULOSE ACETATE FROM OIL PALMWASTE REINFORCED WITH SILVER NANOPARTICLES**

DRA.HESTINA, m.sI , INDRA MASMUR DR SSI MSI , DANIEL

2022

Jurnal nasional terakreditasi

## **Ethanol Production Comparison from Agricultural Waste of Cellulose Source Within Hydrolysis Hcl and Cellulose Enzyme**

INDRA MASMUR DR SSI MSI

2007

Jurnal nasional

## **Pembuatan Senyawa Alkanolamida Tetrahidroksi Oktadekanoat Dari Minyak Kemiri Yang Berfungsi Sebagai Surfaktan**

INDRA MASMUR DR SSI MSI

2022

Jurnal internasional bereputasi

## **Preparation of Mg, Ca, Sr and Ba-based silicate as adsorbent of free fatty acid from crude palm oil**

INDRA MASMUR DR SSI MSI

2023

Jurnal internasional bereputasi

## **Medical waste utilization as a carbon source assisting nanothorn ZnIn<sub>2</sub>S<sub>4</sub> for photocatalytic hydrogen evolution and hydrogenation reaction**

SUBUR P. PASARIBU , KAS TA RIO , INDRA MASMUR DR SSI MSI , HARDY SHUWANTO , JENNI LIE , HAIRUS ABDULLAH

2020

Jurnal internasional bereputasi

## **Silver chloride nanoparticles embedded in self-healing hydrogels with biocompatible and antibacterial properties**

MIMPIN GINTING , SUBUR P. PASARIBU , DRA.HESTINA, m.sI , INDRA MASMUR DR SSI MSI

2012

Prosiding seminar nasional

## **SINTESIS 2-FENIL-5-LAUROSIL-1,3-DIOKSAN MELALUI ASETILASI GLISEROL**

2022

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## **Effect of Different Composition of Polyethylene Oxide Polypyrrole (PEO-PPy) Nanofiber Mats on Antibacterial and Biocompatibility Properties**

SABARMIN PERANGINANGIN , INDRA MASMUR DR SSI MSI , DIANA ALEMIN BARUS , JUNEDI GINTING , HELMINA BR SEMBIRING

2019

Jurnal internasional bereputasi

## **A simple one-pot fabrication of silver loaded semiinterpenetrating polymer network (IPN) hydrogels with self-healing and bactericidal abilities**

INDRA MASMUR DR SSI MSI , SUBUR P. PASARIBU , DRA.HESTINA, m.sI , MIMPIN GINTING

2017

Prosiding seminar internasional

## **Nano porous alkaline earth metal silicates as free fatty acid adsorbents from Crude Palm Oil (CPO)**

NIMPAN BANGUN , SERI BIMA SEMBIRING , JAMARAN KABAN , INDRA MASMUR DR SSI MSI

2025

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2025

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2023

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2022

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2022

Jurnal internasional bereputasi

## **Preparation of Mg, Ca, Sr and Ba-based silicate as adsorbent of free fatty acid from crude palm oil**

GOLFRID GULTOM , ELVRI MELLIATY SITINJAK , YENNY SITANGGANG , MUSTAKIM , NEW VITA MEY DESTTY MARBUN , INDRA MASMUR DR SSI MSI

2024

Jurnal internasional bereputasi

## **Boosting photocatalytic hydrogen generation and Photo-Destruction of Tetracycline by In-Situ oxygen vacancies ZnIn<sub>2</sub>S<sub>4</sub>**

JENNI LIE , HARDY SHUWANTO , HAIRUS ABDULLAH , SUBUR P. PASARIBU , INDRA MASMUR DR SSI MSI

2023

## **Electrospun Nanofiber Mats with Embedded Zinc Oxysulfide for Photoreduction of Nitrobenzene to Aniline under Mild Condition**

ELVRI MELLIATY SITINJAK , NEW VITA MEY DESTTY MARBUN , GOLFRID GULTOM , INDRA MASMUR DR SSI MSI , POLTAK EVENCUS HUTAJULU

## **Researches**

2024

### **SELULOSA TERMODIFIKASI DARI TANDAN KOSONG KELAPA SAWIT SEBAGAI PENGGANTI WET STRENGTH AGENT SINTETIK**

ELVRI MELLIATY SITINJAK , SARI FARAH DINA , GIMELLIYA SARAGIH , INDRA MASMUR DR SSI MSI , HARDY SHUWANTO , POLTAK EVENCUS HUTAJULU

2024

Penelitian Fundamental

### **Modifikasi Sifat Hidrofobisitas Pati Sukun (*Artocarpus altilis*) Sebagai Pembawa Dalam Pestisida Terkontrol**

CUT FATIMAH ZUHRA , INDRA MASMUR DR SSI MSI , MUHAMMAD ZULHAM EFENDI SINAGA

2023

Penelitian Kerjasama Antar Perguruan Tinggi

### **Studi Karakterisasi Grafena/MXene Hidrogel dan Lignin dari Batang Kelapa Sawit sebagai elektroda Solid-State Supercapacitor**

ERMAN TAER , INDRA MASMUR DR SSI MSI , DIANA ALEMIN BARUS

2023

Penelitian Kompetensi

### **Pembuatan Paperbag dari Tandan Kosong Kelapa Sawit (TKKS) sebagai Biodegradable Polybag untuk Pembibitan**

ELVRI MELLIATY SITINJAK , SARI FARAH DINA , RYCCY SYLVIANA PRATIKHA , INDRA MASMUR , JUSTAMAN ARIFIN KARO KARO , FAUZATU ARABICA YATASYA HASIBUAN , POLTAK EVENCUS HUTAJULU , FERNANDO NAINGGOLAN

2023

Penelitian Kompetensi

### **Pembuatan Paperbag Dari Tandan Kosong Kelapa Sawit (TKKS) Sebagai Biodegradable Polybag Untuk Pembibitan**

ELVRI MELLIATY SITINJAK , SARI FARAH DINA , RYCCY SYLVIANA PRATIKHA , INDRA MASMUR DR SSI MSI , JUSTAMAN ARIFIN KARO KARO , FAUZATU ARABICA YATASYA HASIBUAN , POLTAK EVENCUS HUTAJULU , FERNANDO NAINGGOLAN

2024

### **FROM INDUSTRY TO INDUSTRY: PEMANFAATAN LIMBAH BAHAN BERBAHAYA DAN BERACUN (B3) SEBAGAI MATERIAL KATALIS UNTUK APLIKASI PRODUKSI ENERGI TERBARUKAN DAN PENGOLAHAN LIMBAH INDUSTRI**

HAIRUS ABDULLAH , SUBUR P. PASARIBU , INDRA MASMUR DR SSI MSI , HARDY SHUWANTO , TIFFANY , Nana Septiana Nur , KAS TA RIO

2025

Penelitian Strategis Nasional

### **SELULOSA TERMODIFIKASI DARI TANDAN KOSONG KELAPA SAWIT SEBAGAI PENGGANTI WET STRENGTH AGENT SINTETIK**

ELVRI MELLIATY SITINJAK , SARI FARAH DINA , GIMELLIYA SARAGIH , INDRA MASMUR DR SSI MSI , HARDY SHUWANTO , POLTAK EVENCUS HUTAJULU , Leo Frengki Sihaloho, ST

2023

Penelitian Kompetensi

### **FROM INDUSTRY TO INDUSTRY: PEMANFAATAN LIMBAH BAHAN BERBAHAYA DAN BERACUN (B3) SEBAGAI MATERIAL KATALIS UNTUK APLIKASI PRODUKSI ENERGI TERBARUKAN DAN PENGOLAHAN LIMBAH INDUSTRI**

HAIRUS ABDULLAH , SUBUR P. PASARIBU , INDRA MASMUR DR SSI MSI , HARDY SHUWANTO , KAS TA RIO

2021

Penelitian Dana Lokal Perguruan Tinggi

## **PENGARUH KOMPOSISI DARI POLIETILEN OKSIDA-POLIPIROL (PEO-PPy) NANOFIBER PADA UJI ANTIBAKTERI TERHADAP E.coli DAN BIOKOMPATIBILITAS SEL FIBROBLAS L929**

HELMINA BR SEMBIRING , INDRA MASMUR DR SSI MSI , SABARMIN PERANGINANGIN , AFRI HAGANTA TARIGAN

2025

Penelitian Dana Lokal Perguruan Tinggi

## **UJI BIOAKTIVITAS ANTIDIABETES DAN IDENTIFIKASI SENYAWA FENOLIK DARI BIJI BUAH NAMNAM (Cynometra cauliflora L.)**

JULI NOVITA SARI , HELMINA BR SEMBIRING , INDRA MASMUR DR SSI MSI , EZRA E. NABABAN , CHYNDY MIRNAWATI RIA SIAGIAN , FRAN`S GILBERT SITUMORANG

## **Community Services**

2020

Ipteks Bagi Masyarakat

### **SISTEM KALIBRASI TIMBANGAN BERDASARKAN SNI (STANDAR NASIONAL INDONESIA) MENUJU TERTIB UKUR TIMBANGAN DI DESA KIDUPEN KECAMATAN JUHAR KABUPATEN KARO**

ADITIA WARMAN , INDRA MASMUR DR SSI MSI

2025

Ipteks Bagi Masyarakat

### **Pembelajaran Aktif Melalui Perakitan Alat Peraga Miniatur Tubuh Manusia untuk Meningkatkan Pemahaman IPA Siswa Kelas V SD Negeri 064973**

ANDY CANDRA , HELMINA BR SEMBIRING , INDRA MASMUR DR SSI MSI , SABARMIN PERANGINANGIN

2024

Ipteks

### **PELATIHAN PEMBUATAN PELEMBUT DAN PEWANGI PAKAIAN AROMA TERAPI BAGI MORIA TERPUK PARANG II INPRES GBKP KM 8 MEDAN**

JULIATI BR TARIGAN , HELMINA BR SEMBIRING , INDRA MASMUR DR SSI MSI , SABARMIN PERANGINANGIN , EKO K SITEPU

2012

Ipteks Bagi Masyarakat

### **IbM Kelompok Tani Jagung dan Coklat**

2023

Ipteks Bagi Masyarakat

### **Sosialisasi Persiapan Kuliah di Perguruan Tinggi Dalam rangka memperoleh berbagai beasiswa Pemerintah maupun Luar Negeri**

JUNEDI GINTING , INDRA MASMUR DR SSI MSI , TUA RAJA SIMBOLON , DIANA ALEMIN BARUS , ALBERT PASARIBU

2020

Ipteks

### **Empowerment of Food Traders Regarding Hazardous Additives for Food Towards Healthy Natural Food Products in Tanjung Morawa District**

LINA TARIGAN , INDRA MASMUR DR SSI MSI , SABARMIN PERANGINANGIN , ADIL GINTING

2024

### **Pemberdayaan Masyarakat melalui Peningkatan Keterampilan Menenun untuk Mendukung Pencapaian Sustainable Development Goals (SDGs)**

GUSTANTO , INDRA MASMUR DR SSI MSI , TUA RAJA SIMBOLON , DIANA ALEMIN BARUS , LESTARI OSHINA TAMPUBOLON , EVA PURWANTI , DHEA NATALIA BR GINTING , ADITIA TAMPUBOLON , MUHAMMAD ABDUH AKRAM AGUS

## **Intellectual Property Rights**

2023

Paten nasional

## **PIPA ADSORBER**

INDRA MASMUR DR SSI MSI

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2023

Hak cipta nasional

### **Modifikasi Proses Pemurnian Minyak Kelapa Sawit**

INDRA MASMUR DR SSI MSI , ELVRI MELLIATY SITINJAK

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2023

Paten nasional

### **PRODUK RED PALM OLEIN DAN RED PALM STEARIN HASIL PROSES PEMURNIAN MINYAK KELAPA SAWIT**

INDRA MASMUR DR SSI MSI , ELVRI MELLIATY SITINJAK , NEW VITA MEY DESTTY MARBUN

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2023

Paten nasional

### **PROSES PEMURNIAN MINYAK KELAPA SAWIT UNTUK MENGHASILKAN RED PALM OLEIN DAN RED PALM STEARIN**

INDRA MASMUR DR SSI MSI

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2023

Hak cipta nasional

### **Modifikasi Proses Pemurnian Minyak Kelapa Sawit**

GOLFRID GULTOM , ELVRI MELLIATY SITINJAK , INDRA MASMUR DR SSI MSI , NEW VITA MEY DESTTY MARBUN

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