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🏢 Fakultas Matematika dan Ilmu Pengetahuan Alam

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*Saharman Gea S.Si., M.Si. Ph.D dilahirkan di Nias pada tanggal 10 November 1968. Beliau merupakan seorang dosen Kimia di Universitas Sumatera Utara. Beliau menyelesaikan pendidikan terakhirnya pada jenjang S3, program studi Kimia di London pada tahun 2011.*

## Publications

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2012

Makalah ilmiah

### **Nonporous chitosan/collagen scaffold for skin tissue engineering**

SAHARMAN GEA

2018

Makalah ilmiah

### **All-cellulose composite isolated from oil palm empty fruit bunch**

SAHARMAN GEA

2018

Makalah ilmiah

### **Activity assays of calcinated sarulla natural zeolite (snz-cal) in catalytic hydrocracking rubber seed oil**

SAHARMAN GEA

2025

Jurnal internasional bereputasi

### **Synergy of Intercalation and Stacking Fault Formation to Increase the Optical Properties of N-CQDs/ZnO NCs via Nonmetal-Metal Interface and The Investigation of Its Photocatalytic Activities for Degradation of Rhodamine B**

AVERROES FAZLUR RAHMAN PILIANG , SAHARMAN GEA

2018

Makalah ilmiah

### **The characterization of Sarulla natural zeolite crystal and its morphological structure**

SAHARMAN GEA

2019

Prosiding seminar nasional

### **Analisa XRD Terhadap Perubahan Struktur Dan Kristalinitas Karbonisasi Batubara Sawahlunto - Sijunjung Sumatera Barat**

SAHARMAN GEA , BASUKI , Ir. VIVI PURWANDARI, M.Si

2026

Jurnal internasional

### **Biochar-Based Catalysts in Hydrogen Production: Mechanisms, Activation, and Efficiency**

SAHARMAN GEA , BASUKI , ANDRIAYANI , RICKY ANDI SYAHPUTRA , KARNA WIJAYA , SHIPLU SARKER

2022

Jurnal nasional terakreditasi

# **Enhancement Mechanical Properties of Simalambuo Wood (*Loppophetalum spp*) Delignified using NaOH in the Thermomechanical Densification Method**

SAHARMAN GEA , ANDRIAYANI , FEBRI SINDIKA , NUR AZIZAH

2023

Artikel ilmiah

## **Lignocellulosic analysis from oil palm empty fruit bunches and crystallinity index analysis of cellulose nanofibers isolated via high pressure steam explosion**

TAMRIN , SAHARMAN GEA , JULIATI BR TARIGAN

2014

Jurnal internasional bereputasi

## **Mechanical properties of nanocrystal cellulose reinforced polystyrene with glycerol monostearic as antistatic agent**

SAHARMAN GEA

2023

Jurnal internasional bereputasi

## **Photocatalytic Degradation of Methylene Blue Using Nâ€‘Doped ZnO/ Carbon Dot (N-ZnO/CD) Nanocomposites Derived from Organic Soybean**

ANDRIAYANI , SAHARMAN GEA

2018

Jurnal internasional

## **Preparation of graphene oxide/bacterial cellulose nanocomposite via in situ process in agitated culture**

SAHARMAN GEA

2025

Jurnal nasional terakreditasi

## **Antifungal activities of auto-polymerized silicone soft denture liner material containing *Origanum vulgare* gel against *Candida albicans* over 14-day period: an in vitro study**

ARIYANI DRG , ISMET DANIAL NASUTION , DWI SURYANTO , SAHARMAN GEA

2024

Jurnal internasional

## **The Effect of Concentration Based on Etching Time of Hydrofluoric Acid on Shear-Bond Strength of Porcelain Repair Material on Cohesive Fractures of Porcelain Fused to Metal Restoration**

SYAFRINANI , SAHARMAN GEA , PUTRI WELDA UTAMI RITONGA , ANDRI SINULINGGA

2024

Prosiding seminar internasional

## **Esterification of palm fatty acid distillate to methyl ester using amberlyst catalyst in a semi-continuous reactor**

SAHARMAN GEA , SYUKRI , EDDIYANTO , ALFA AKUSTIA WIDATI

2018

Makalah ilmiah

## **Fabrication and characterization of natural rubber composite (sir 5)/organo-montmorillonite using cetil trimetil ammonium bromide as a surface modifier**

SAHARMAN GEA

2018

Makalah ilmiah

## **Morphological study of fluorescent carbon Nanoparticles (F-CNPs) from ground coffee waste soot oxidation by diluted acid**

SAHARMAN GEA

2018

Makalah ilmiah

## **Preliminary study on the fabrication of cellulose nanocomposite film from oil palm empty fruit bunches partially solved into licl/dmac with the variation of**

## **dissolution time**

SAHARMAN GEA

2025

Prosiding seminar internasional

### **The Utilization of Alumunium Waste as Metal Agent to Improve Electrical Characteristics of Biochar-Based Flexible Film**

AVERROES FAZLUR RAHMAN PILIANG , SANJAYA BAROAR SAKTI NASUTION , ALFIN FAUZI MALIK , OKI SUPRADA OMPUSUNGGU , SAHARMAN GEA

2023

Jurnal internasional bereputasi

### **Nanofiber Cellulose/Lignin from Oil Palm Empty Fruit Bunches and the Potential for Carbon Fiber Precursor Prepared by Wet-spinning**

SAHARMAN GEA

2026

Jurnal internasional bereputasi

### **NaHCO<sub>3</sub>-Assisted Synthesis of Ni-Promoted Sulfated Mesoporous Silica for the Hydrocracking of Used Cooking Oil into Biogasoline**

NIKO PRASETYO , KARNA WIJAYA , SAHARMAN GEA , MARINI FAIRUZ VEBRYANA , Aldino Javier Saviola , Dr. Wahyu Dita Saputri , Dr. Amalia Kurnia Amin, S.Si. , Dr. Latifah Hauli

2022

Jurnal internasional bereputasi

### **Facile synthesis of ZnO@Ag nanocomposite supported by graphene oxide with stabilised band-gap and wider visible-light region for photocatalyst application**

NURHAIDA PASARIBU , SAHARMAN GEA

2023

Jurnal nasional terakreditasi

### **Synthesis of Carbon Dots From Empty Fruit Bunch Biochar an Acid-Free Hydrothermal Method**

MARPONGAHTUN , SAHARMAN GEA

2024

Prosiding seminar internasional

### **The synthesis of macro-initiator using cellulose isolated from OPEFB via atomic transfer radical polymerization method**

SAHARMAN GEA

2018

Makalah ilmiah

### **The analysis of thermal and mechanical properties of biocomposite policaprolactone/cellulose nanofiber from oil palm empty fruit bunches**

SAHARMAN GEA

2015

Jurnal internasional

### **The effect of concentration of structure and optical properties of thin films synthesized by sol-gel methods spin coating**

SAHARMAN GEA

2021

Jurnal internasional bereputasi

### **The effect of plasticizers and chitosan concentration on the structure and properties of Gracilaria sp.-based thin films for food packaging purpose**

EMMA ZAIDAR , MUHAMMAD ZULHAM EFENDI SINAGA , FIRMAN SEBAYANG , YUAN ALFINSYAH SIHOMBING , SAHARMAN GEA , CUT FATIMAH ZUHRA

2020

Jurnal internasional bereputasi

### **Characteristic and Catalytic Performance of Co and Co-Mo Metal Impregnated in Sarulla Natural Zeolite Catalyst for Hydrocracking of MEFA Rubber Seed Oil into Biogasoline Fraction**

2022

Artikel ilmiah

## **Utilization of Silica Nanoparticles from Rice Husks for Improving the Mechanical Properties of Dental Materials: A Literature Review**

SLAMAT TARIGAN , SAHARMAN GEA

2024

Prosiding seminar internasional

## **Graft Copolymerisation of Maleic Anhydride onto Natural Rubber (SIR-20): Melt Processing and Characterisation**

SAHARMAN GEA

2023

Jurnal internasional bereputasi

## **Pyrolysis of Palm Fronds Waste into Bio-Oil and Upgrading Process Via Esterification-Hydrodeoxygenation Using Cu-Zn Metal Oxide Catalyst Loaded on Mordenite Zeolite**

SAHARMAN GEA

2026

Jurnal internasional bereputasi

## **NaHCO<sub>3</sub>-Assisted Synthesis of Ni-Promoted Sulfated Mesoporous Silica for the Hydrocracking of Used Cooking Oil into Biogasoline**

NIKO PRASETYO , KARNA WIJAYA , SAHARMAN GEA , MARINI FAIRUZ VEBRYANA , Aldino Javier Saviola , Dr. Wahyu Dita Saputri , Dr. Amalia Kurnia Amin, S.Si. , Dr. Latifah Hauli

2020

Jurnal internasional bereputasi

## **Isolation and Characterisation of Cellulose Nanofibre and Lignin from Oil Palm Empty Fruit Bunches**

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2020

Jurnal internasional bereputasi

## **The Stabilization of Liquid Smoke through Hydrodeoxygenation Over Nickel Catalyst Loaded on Sarulla Natural Zeolite**

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2018

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## **Characterization of composite boards made of oil palm trunk flour/maleic anhydride grafted polypropylene**

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2020

Jurnal internasional bereputasi

## **Fabrication and In-Vivo Study of Micro-Colloidal Zanthoxylum acanthopodium-Loaded Bacterial Cellulose as a Burn Wound Dressing**

SAHARMAN GEA

2011

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## **Investigation into the structural, morphological, mechanical and thermal behaviour of bacterial cellulose after a two-step purification process**

SAHARMAN GEA

2025

Jurnal internasional

## **Investigation of electrical conductivity of graphite, graphene oxide (GO) and reduce graphene oxide (rGO) as a filler of acetate cellulose-based nanocomposite**

SAHARMAN GEA , ERWAN BENHARD SILITONGA , Gabriella Althea Buntaro , Ronn Goei , Reka Mustika Sari

2022

Jurnal internasional bereputasi

## **Bio-oil hydrodeoxygenation over zeolite-based catalyst: the effect of zeolite activation and nickel loading on product characteristics**

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2025

Book chapter internasional

## **Natural Resources, Environment, and Food and Energy Security Updates in North Sumatra**

SAHARMAN GEA , ANDRIAYANI , TAMRIN

2018

Jurnal internasional bereputasi

## **The Preparation of All-Cellulose Nanocomposite Film from Isolated Cellulose of Corncobs as Food Packaging**

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2013

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## **Mechanical and thermal properties of bacterial-cellulose-fibre-reinforced mater-biÂ® bionanocomposite**

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## **Compression Strength of Metal-Ceramic Fixed Dental Prostheses Reinforced by Nanoparticle Silica from Rice Husks**

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Jurnal internasional bereputasi

## **Evaluation to possibility of cellulose fibers isolated from kapok randu (Ceiba Pentandra) as a precursor growth of carbon micro structures with the assist of metal catalysts**

ANDRIAYANI , SAHARMAN GEA

2018

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## **The Isolation of Nanofibre Cellulose from Oil Palm Empty Fruit Bunch Via Steam Explosion and Hydrolysis with HCl 10%**

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## **Development of chromium-impregnated sulfated silica as a mesoporous catalyst in the production of biogasoline from used cooking oil via a hydrocracking process**

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## **IbM of Small Medium Enterprise of Coconut Milk and Liquid Smoke from Coconut Shells**

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## **Synthesis of nanobentonite as heavy metal adsorbent with various solvents**

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2026

Jurnal internasional bereputasi

## **Hydrogen generation from coconut shell bio-oil via steam reforming incorporating energy- exergy analysis**

KARNA WIJAYA , DENNY HARYANTO SINAGA , SAHARMAN GEA , RICKY ANDI SYAHPUTRA , BASUKI , HENDRA SUSILO

2018  
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## **Acetylation of breadfruit utarch by Using Acetic Anhydride**

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2019  
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## **Preparation of polyvinyl alcohol/cellulose nano fiber nanocomposite isolated from empty oil palm fruit bunches**

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## **Bacterial cellulose based biosensors**

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## **Characterization of Bacterial Cellulose-Based Wound Dressing in Different Order Impregnation of Chitosan and Collagen**

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## **Enhancing the quality of nata de coco starter by channeling the oxygen into the bioreactor through agitation method**

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## **Mechanical properties of oil palm trunk by reactive compregnation methode with dammar resin**

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## **A review: Current trends and future perspectives of bacterial nanocellulose-based wound dressings**

SAHARMAN GEA , NOVIA AMALIA SHOLEHA , I PUTU MAHENDRA , Khatarina Meldawati Pasaribu , Nanang Masruchin , Myrtha Karina , Abhishek Gupta , Brian Johnston , Izabela Radecka

2019  
Jurnal nasional

## **Analisa XRD Terhadap Perubahan Struktur Dan Kristalinitas Karbonisasi Batubara Sawahluntoâ€”Sijunjung Sumatera Barat**

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## **Preparation of Biodegradable and Low-Cost Lignin-Based PVOH Carbon Fibers Prepared by Electrospinning**

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## **Analysis and availability of lignocellulosic wastes: Assessments for Indonesia and Peru**

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## **Briquettes manufacturing: mechanisation of briquette productions at SME santan coco**

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## **Wet-spinning of cellulose acetate reinforced with acetylated nano-crystalline cellulose as carbon fibre precursors**

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### **Extraction silica from rice husk with naoh leaching agent with temperature variation burning rice husk**

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Jurnal nasional

### **Sintesis Nanoserat Selulosa dari Tandan Kosong Sawit (Tks) dengan Menggunakan Metode Tetramethyl Piperidine 1 Oxyl (TEMPO)**

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2023

Jurnal internasional

### **The Effect of Fluoride Acid Ething Times on The Adhesive Behaviours of Porcelain Restorative Materials on The Cohesive Fractures of Porcelain Fused to Metal Restoration**

PUTRI WELDA UTAMI RITONGA , SYAFRINANI , SAHARMAN GEA , FEMY RILINDA, DRG

2021

Jurnal internasional bereputasi

### **The effect of plasticizers and chitosan concentration on the structure and properties of Gracilaria sp.-based thin films for food packaging purpose**

CUT FATIMAH ZUHRA , SAHARMAN GEA , MUHAMMAD ZULHAM EFENDI SINAGA

2024

Jurnal nasional terakreditasi

### **Characterization of Silicon from Rice Husk Doped with Cobalt: Analysis of Structure and Magnetoelectric Properties**

RIZKY KURNIAWAN , HADI KURNIAWAN , ANDRIAYANI , SAHARMAN GEA

2025

Prosiding seminar internasional

### **Characterization and evaluation of a cellulose-based hydrogel prepared from oil palm empty fruit bunches and crosslinked with citric acid**

NAJLA LUBIS , SAHARMAN GEA , TAMRIN , JULIATI BR TARIGAN

2018

Makalah ilmiah

### **The Study of Liquid Smoke as Substitutions in Coagulating Latex to the Quality of Crumb Rubber**

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Jurnal nasional terakreditasi

### **NANOENKAPSULASI ASAM STEARAT DENGAN MODIFIKASI GRAFENA mG/SA WALL-CORE SEBAGAI KOMPOSIT PERUBAHAN FASA**

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Jurnal internasional bereputasi

### **The exfoliation process of sawahlunto coal into graphene through the modified hummer method**

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### **The effectiveness of coconut coir as tar adsorbent in liquid smoke integrated into the pyrolysis reactor**

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Jurnal internasional bereputasi

## **Acetylated lignin from oil palm empty fruit bunches and its electrospun nanofibres with PVA: Potential carbon fibre precursor**

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2024  
Jurnal nasional terakreditasi

## **Pioneering bio-oil extraction: The role of transition metal oxide zeolite catalysts in co-pyrolyzing palm fronds and high-density polyethylene**

DIANA ALEMIN BARUS , SAHARMAN GEA

2020  
Jurnal nasional terakreditasi

## **Mechanical and morphological characteristic investigations of deinked used newsprint paper via ultra-sonochemistry method**

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Jurnal internasional bereputasi

## **Bioactive bacterial cellulose wound dressings for burns with collagen in-situ and chitosan ex-situ impregnation**

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2024  
Jurnal nasional terakreditasi

## **Pelatihan dan Pengembangan Peningkatan Kompetensi Penulisan Karya Ilmiah Bagi Dosen Universitas Prima Kota Medan**

YENI ABSAH , SYAFRIZAL HELMI SITUMORANG , SAHARMAN GEA , BEBY KARINA FAWZEEA

2012  
Jurnal nasional

## **Sifat Mekanik dan Termal Bionanokomposit Pati yang Diperkuat oleh Partikulat Sellulose Bakteri**

SAHARMAN GEA

2017  
Jurnal nasional

## **Peningkatan Kualitas Produksi Santan Kelapa Sebagai Bahan Baku Industri Kuliner Di Kota Medan**

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2023  
Jurnal internasional bereputasi

## **Silica-Based Catalysts for Biodiesel Production: A Brief Review**

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## **The Effect of Chemical Activation Using Base Solution With Various Concentrations Towards Sarulla Natural Zeolite**

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Jurnal internasional bereputasi

## **Enhancing recycled-paper quality using cellulose nanocrystals from pineapple leaf waste**

SAHARMAN GEA , AVERROES FAZLUR RAHMAN PILIANG , SRI RAHAYU, S.SI , Refi Ikhtiari , MUHAMMAD IBADURRAHMAN , Ronn Goei , Zhihao Yen

2020  
Makalah ilmiah

## **Improving quality and yield production of coconut shell charcoal through a modified pyrolysis reactor with tar scrubber to reduce smoke pollution**

SAHARMAN GEA

2025  
Jurnal internasional bereputasi

## **Graphene oxide-bacterial cellulose composites for enhanced adsorption of rhodamine B from aqueous solutions**

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Artikel ilmiah

## **The characterization of agitated bacterial cellulose-based paper synthesized at various rotational speeds**

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Jurnal internasional bereputasi

## **The effect of plasticizers and chitosan concentration on the structure and properties of Gracilaria sp.-based thin films for food packaging purpose**

SAHARMAN GEA

2023  
Jurnal nasional terakreditasi

## **PREPARATION OF KEMUNING LEAF EXTRACT MICROENCAPSULATION BY IONIC GELATION METHOD AS AN ANTIBACTERIAL**

SAHARMAN GEA , ANDRIAYANI , HARIYATI , Khatarina Meldawati Pasaribu

2019  
Jurnal internasional bereputasi

## **Conversion of methyl ester fatty acid from rice bran oil into fuel fraction via hydrocracking reaction over zeolite catalyst supported of Ni, Co and Mo metals**

SAHARMAN GEA

2018  
Makalah ilmiah

## **Synthesis of graphene oxide from the Sawahlunto-Sijunjung coal via modified hummers method**

SAHARMAN GEA

2025  
Jurnal nasional terakreditasi

## **Aktivitas fisik dan psikologis pada pasien chronic kidney disease yang menjalani hemodialisis: A literature review**

RESMI PANGARIBUAN , ALMINA ROSPITARIA TARIGAN , ERMI GIRSANG , ELIS ANGGERIA , SAHARMAN GEA

2024  
Jurnal internasional bereputasi

## **Development of chromium-impregnated sulfated silica as a mesoporous catalyst in the production of biogasoline from used cooking oil via a hydrocracking process**

SAHARMAN GEA , KARNA WIJAYA , NIKO PRASETYO , Zulfaa Lola Ardelia , RISKI ASTIN FITRIA , Aldino Javier Saviola , TYAS SEKAR NINGRUM , Dr. Latifah Hauli , Adi Setiawan , Dr. Wahyu Dita Saputri , Won-Chun Oh , Dr. Amalia Kurnia Amin, S.Si.

2023  
Jurnal internasional bereputasi

## **Characteristics of Simalambuo (Lophopetalum sp.) wood from Nias Island, North Sumatra Province, Indonesia**

ATMAWI DARWIS , SAHARMAN GEA , RUDI HARTONO , TITO SUCIPTO , SYAHIDAH , ARIDA SUSILOWATI , APRI HERI ISWANTO , NIKEN SUBEKTI , WAHYU HIDAYAT , Widya Patriasari , Jajang Sutiawan , Nan Hun Kim , DWIVIA WAHYU AMANDA , Muhammad Adly Rahandi Lubis

2022  
Jurnal internasional bereputasi

## **A Comprehensive Review of Experimental Parameters in Bio-oil Upgrading from Pyrolysis of Biomass to Biofuel Through Catalytic Hydrodeoxygenation**

SAHARMAN GEA

2025  
Prosiding seminar internasional

# Synthesis and physicochemical properties of cationic starch from the etherification of cassava (*Manihot utilissima*)

SAHARMAN GEA , CUT FATIMAH ZUHRA , SRI RAHAYU , REKA MUSTIKA SARI , NOR AZZURA , Ronn Goei , Eva Oktavini

2025

Jurnal internasional bereputasi

## NaHCO<sub>3</sub>-Assisted Synthesis of Ni-Promoted Sulfated Mesoporous Silica for the Hydrocracking of Used Cooking Oil into Biogasoline

SAHARMAN GEA , KARNA WIJAYA , NIKO PRASETYO , MARINI FAIRUZ VEBRYANA , Aldino Javier Saviola , Wahyu Dita Saputri , Amalia Kurnia Amin , Latifah Hauli

2024

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## Esterification of palm fatty acid distillate to methyl ester using amberlyst catalyst in a semi-continuous reactor

SAHARMAN GEA

2023

Jurnal internasional bereputasi

## Production of levulinic acid from glucose using nickel phosphate-silica catalyst

SAHARMAN GEA

2024

Jurnal internasional bereputasi

## Improved mechanical and thermal performance of bacterial cellulose paper through cationic cassava starch addition

SAHARMAN GEA

2024

Prosiding seminar internasional

## Preparation of biochar catalyst from coconut shell impregnated with nickel metal as a heterogeneous catalyst

SAHARMAN GEA , BASUKI , KARNA WIJAYA , RICKY ANDI SYAHPUTRA , ANI SUTIANI , MARLAN , MUHAMMAD IRVAN HASIBUAN , ADELBERT LANA SIMANGUNSONG

2021

Jurnal internasional bereputasi

## THE COMPARISON OF OPAQUE TiO<sub>2</sub> AND TRANSPARENT TiO<sub>2</sub> ON THE PERFORMANCE OF AgSbS<sub>2</sub>“SENSITIZED SOLAR CELL PREPARED BY SOLUTION PROCESSING

SAHARMAN GEA

2018

Makalah ilmiah

## The preparation and characterization of bentonite nanoparticle from Bener Meriah, Indonesia

SAHARMAN GEA

2007

Jurnal internasional bereputasi

## Biocomposites based on bacterial cellulose and apple and radish pulp

SAHARMAN GEA

2023

Jurnal internasional bereputasi

## Evaluation to possibility of cellulose fibers isolated from kapok randu (*Ceiba Pentandra*) as a precursor growth of carbon micro structures with the assist of metal catalysts

SAHARMAN GEA

2020

Jurnal internasional

## The Fabrication of Natural Zeolite Via Co-Precipitation Method as Cu, Pb and Zn Metal Absorbent

SAHARMAN GEA

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2018

Jurnal internasional

**Fabrication of poly (vinyl alcohol)/bentonite nanocomposites using sol-gel method**

SAHARMAN GEA

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2015

Jurnal internasional bereputasi

**The manufacture of palm oil-based polyurethane nanocomposite with organic montmorillonite nanoparticle as paint coatings**

SAHARMAN GEA

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2018

Makalah ilmiah

**Synthesis of Carbon Nanodots from Cellulose Nanocrystals Oil Palm Empty Fruit by Pyrolysis Method**

SAHARMAN GEA

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2020

Jurnal internasional bereputasi

**The Fabrication of Natural Zeolite Via Co-Precipitation Method As Cu, Pb and Zn Metal Absorbent**

SAHARMAN GEA

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2018

Makalah ilmiah

**Study of bacterial cellulose as scaffold on cartilage tissue engineering**

SAHARMAN GEA

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2023

Artikel ilmiah

**Lignocellulosic analysis from oil palm empty fruit bunches and crystallinity index analysis of cellulose nanofibers isolated via high pressure steam explosion**

SAHARMAN GEA

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2023

Artikel ilmiah

**Rice husk is renewable source in synthesis nanosilicon and its application as potential anode lithium-ion batteries**

SAHARMAN GEA

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2020

Jurnal internasional bereputasi

**Preparation and characterisation of electrospun composite nanofibre polyvinyl alcohol/ nanofibrillated cellulose isolated from oil palm empty fruit bunches**

SAHARMAN GEA

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2018

Makalah ilmiah

**The study on physical and mechanical properties of latex/graphene oxide composite film**

SAHARMAN GEA

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2019

Makalah ilmiah

**The use of nanofibrils cellulose of sugarcane bagasse as precursor in synthesizing carbon nanodots by hydrothermal method**

SAHARMAN GEA

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2022

Jurnal internasional bereputasi

**Carbon-Nano Fibers Yield Improvement with Iodinated Electrospun PVA/Silver Nanoparticle as Precursor via One-Step Synthesis at Low Temperature**

SAHARMAN GEA

2020

Makalah ilmiah

## **Preparation and Characterisation of Electrospun Composite Nanofibre Polyvinyl Alcohol/ Nanofibrillated Cellulose Isolated from Oil Palm Empty Fruit Bunches**

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2022

Jurnal internasional bereputasi

## **Cassava starch/bacterial cellulose-based bioplastics with Zanthoxylum acanthopodium**

SAHARMAN GEA

2024

Jurnal internasional bereputasi

## **Efficient conversion of used palm cooking oil into biogasoline over hydrothermally prepared sulfated mesoporous silica loaded with NiMo catalyst**

SAHARMAN GEA , NIKO PRASETYO , KARNA WIJAYA

2018

Jurnal internasional bereputasi

## **Synthesis of Carbon Nanodots from Cellulose Nanocrystals Oil Palm Empty Fruit by Pyrolysis Method**

YUGIA MUIS , SAHARMAN GEA , MARPONGAHTUN , ANDRIAYANI

2025

Jurnal internasional bereputasi

## **Facile synthesis of reduced graphene oxide using natural plant extracts as green reducing agents**

SAHARMAN GEA

2022

Jurnal internasional

## **Lignin Isolation from Oil Palm Empty Fruit Bunches (OPEFB) by Acidic Method**

SAHARMAN GEA , AMIR HAMZAH SIREGAR , MAHYUNI HARAHAP

2021

Makalah ilmiah

## **Effect of variation temperature at burning rice husk to obtain silica**

SAHARMAN GEA

2020

Makalah ilmiah

## **The effect of chelating agents on the formation of manganese oxide (MnO) in the synthesis of sodium manganese oxide ( $\text{Na}_2\text{Mn}_3\text{O}_7$ )**

SAHARMAN GEA

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Jurnal nasional terakreditasi

## **Morphology and thermal properties of polypropylene-montmorillonite nanocomposite using modified bentonite of Bener Meriah Aceh**

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Makalah ilmiah

## **The manufacture nanofiber from sugarcane bagasse lignin with polyvinyl alcohol by electrospinning method**

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## **Isolasi dan Karakterisasi Nanokistral Selulosa dari Tandan Sawit (Elaeis Guineensis Jack)**

2024

Jurnal internasional bereputasi

### **Temperature-dependent etherification of cassava starch with CHPTAC for cationic starch production**

JULIATI BR TARIGAN , BASUKI , SRI RAHAYU , AVERROES FAZLUR RAHMAN PILIANG , NICO SETYAWAN SIHOTANG , Khatarina Meldawati Pasaribu , Evi Oktavia , Ronn Goei , Alfred Ling Yoong Tok , Jonathan Low , SAHARMAN GEA , CUT FATIMAH ZUHRA

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### **Preparation of Biodegradable and Low-Cost Lignin-Based PVOH Carbon Fibers Prepared by Electrospinning**

SAHARMAN GEA

2024

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### **Development of chromium-impregnated sulfated silica as a mesoporous catalyst in the production of biogasoline from used cooking oil via a hydrocracking process**

SAHARMAN GEA , KARNA WIJAYA

2023

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### **Highly Fluorescent Nitrogen-doped Carbon dots derived from Jengkol Peels (Archidendron pauciflorum) by Solvothermal Synthesis for Sensitive Hg<sup>2+</sup> Ions Detection**

ANIZA SALVIANA PRAYUGO , AMRU DAULAY , Ronn Goei , Alfred Ling Yoong Tok , MARPONGAHTUN , SAHARMAN GEA

2025

Makalah ilmiah

### **Physical Characteristics of Pyrolytic Bio-Oil Synthesized From Pericarp from Mahogany (Swietenia mahogany) with Water Hyacinth Biodhar as Catalyst**

AVERROES FAZLUR RAHMAN PILIANG , SAHARMAN GEA

2019

Makalah ilmiah

### **The use of bentonite of Bener Meriah Aceh to improve the mechanical properties of Polypropylene-Montmorillonite Nanocomposite**

SAHARMAN GEA

2009

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### **All-cellulose nanocomposites by surface selective dissolution of bacterial cellulose**

SAHARMAN GEA

2010

Jurnal internasional bereputasi

### **Bacterial cellulose“poly (vinyl alcohol) nanocomposites prepared by an in-situ process**

SAHARMAN GEA

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Jurnal internasional bereputasi

### **Facile synthesis of ZnO“Ag nanocomposite supported by graphene oxide with stabilised band-gap and wider visible-light region for photocatalyst application**

SAHARMAN GEA , NURHAIDA PASARIBU

2017

Jurnal nasional terakreditasi

### **The Manufacture of Nanocomposites Polyvinyl Alcohol/cellulose Nanofiber Isolated From Empty Bunch Fruit Palm Oil (Elaeis Guineensis Jack) with Steam Explosion**

2025

Jurnal nasional terakreditasi

## **Improvement of Research Proposal Writing Skills for PSDKU USU Lecturers in North Nias**

RAHMAWATY , SAHARMAN GEA

2020

Jurnal nasional terakreditasi

## **Electrical and thermal conductivity of cyclic natural rubber/graphene nanocomposite prepared by solution mixing technique**

SAHARMAN GEA

2020

Jurnal nasional terakreditasi

## **Comparative Optimization of Cellulase and Laccase Enzymes in Deinking Process of Used Newspapers**

SAHARMAN GEA

2025

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## **Facile synthesis and electrochemical performance of bacterial cellulose/reduced graphene oxide/NiCo-layered double hydroxide composite film for self-standing supercapacitor electrode**

SAHARMAN GEA

2025

Prosiding seminar internasional

## **Characterization and evaluation of a cellulose-based hydrogel prepared from oil palm empty fruit bunches and crosslinked with citric acid**

AVERROES FAZLUR RAHMAN PILIANG , SAHARMAN GEA , TAMRIN , JULIATI BR TARIGAN , NAJLA LUBIS , Ronn Goei

2023

Prosiding seminar internasional

## **Simulation Analysis of The Utilizing Oil Palm Mill Waste Into Hydrogen Energy Through The Biomass Pyrolysis**

TAUFIQ BIN NUR , SAHARMAN GEA , IRVAN

2025

Prosiding seminar internasional

## **Penetration ability of liquid smoke and silicon oil on Simalambuo wood**

ANDRIAYANI , SAHARMAN GEA , NURAZIZAH

2018

Makalah ilmiah

## **Chitosan/graphene oxide biocomposite film from pencil rod**

SAHARMAN GEA

2020

Jurnal internasional bereputasi

## **Thermal behavior, mineral phase, and microstructure characteristics of Na<sub>2</sub>Mn<sub>3</sub>O<sub>7</sub> synthesized from MnO<sub>2</sub> and MnCl<sub>2</sub> via a low-cost, simple conventional mixing method**

SAHARMAN GEA

2024

Jurnal internasional bereputasi

## **A review: Current trends and future perspectives of bacterial nanocellulose-based wound dressings**

Khatarina Meldawati Pasaribu , SAHARMAN GEA

2022

Jurnal internasional bereputasi

## **Synthesis of fluorescent citric acid carbon dots composites derived from empty fruit bunches of palm oil tree and its anti-bacterial property**

2014

Jurnal internasional bereputasi

### **Preparation and Characterization of Nanocrystalline Cellulose from Sugar Palm Bunch (Arenga Pinnata (Wurmb) Merr.)**

SAHARMAN GEA

2023

Jurnal internasional bereputasi

### **Two stages upgrading of bio-oil through esterification and hydrodeoxygenation reactions using Fe<sub>2</sub>O<sub>3</sub>-CoO supported catalyst**

SAHARMAN GEA

2014

Jurnal internasional

### **Effect of mixed nanoparticles ZnS and polyvinyl alcohol (PVA) against nanocomposite mechanical properties of PVA/ZnS**

SAHARMAN GEA

2024

Jurnal internasional bereputasi

### **Biomass-derived N-doped Carbon Dots/TiO<sub>2</sub> for Visible-Light-Induced Degradation of Methyl Orange in Wastewater**

SAHARMAN GEA

2024

Jurnal internasional bereputasi

### **Pyrolysis of Palm Fronds Waste into Bio-Oil and Upgrading Process Via Esterification-Hydrodeoxygenation Using Cu-Zn Metal Oxide Catalyst Loaded on Mordenite Zeolite**

AHMAD NASIR PULUNGAN , FAUZIYAH HARAHAP , SAHARMAN GEA , CICIK SURIANI , JUNIFA LAYLA SIHOMBING , LISNAWATY SIMATUPANG

2025

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### **Extraction and characterization of cellulose nanofibers from rice husk: Potential for electrospun PVA/CNF mat composites**

SAHARMAN GEA

2023

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### **Ultrasound pretreatment and enzymatic deinking by using bacterial cellulases from rice husk**

SAHARMAN GEA

## **Researches**

2024

### **Essential oil analysis of origanum vulgare and their antimicrobial activity and toxicity**

SAHARMAN GEA , DWI SURYANTO , ARIYANI DRG , ISMET DANIAL NASUTION

2024

Penelitian Unggulan Perguruan Tinggi

### **Potential of Periodontal Chip Hydrogel Propolis Against Clinical Parameters, Fibroblast Proliferation, and Tumor Necrosis Factor- $\alpha$ (TNF- $\alpha$ ) Serum Rate: In-Vivo Study on the Marmot (Carvia Porcellus) Periodontitis Model**

RINI OCTAVIA NASUTION , SAHARMAN GEA , SONDANG PINTAULI

2022

Penelitian Dana Lokal Perguruan Tinggi

### **Sintesis Resin Kopolimer Polistirena Divinilbenzena Sulfonat Sebagai Katalis**

## Heterogen Dalam Pembuatan Biodiesel Dari Asam Oleat

SYUKRI , SAHARMAN GEA

2022

Penelitian Unggulan Perguruan Tinggi

### **Sistem Produksi dan Penyimpanan Hidrogen dari Pirolisis Biomassa Limbah Pertanian Serta Pemanfaatannya sebagai Bahan Bakar Mesin Pembakaran Dalam dan Sel Bahan Bakar**

SAHARMAN GEA , IRVAN , TAUFIQ BIN NUR , Harditya Umaraul Haq , DONY WALFARED KURNIAWAN MARPAUNG , Iqbal Syamputra Tanjung , RAHMAT KHOLIS HARAHAAP

2025

### **Aktivitas fisik dan psikologis pada pasien chronic kidney disease yang menjalani hemodialisis: A literature review**

ERMI GIRSANG , ALMINA ROSPITARIA TARIGAN , ELIS ANGGERIA , SAHARMAN GEA , RESMI PANGARIBUAN

2022

Penelitian Unggulan Perguruan Tinggi

### **Fungsionalisasi Carbon Nanotubes (CNT) Sebagai Pendukung Katalis Generasi Baru dalam Pembuatan Biodiesel dari Asam Lemak Bebas**

AHMAD YUNUS NASUTION , ANDRIAYANI , SAHARMAN GEA , TAUFIQ BIN NUR

2019

Penelitian Disertasi Doktor

### **Proses Eksfoliasi Grafit Batubara Sawahlunto menjadi Grafena dengan Metode Modifikasi Hummers**

BASUKI , SAHARMAN GEA , Ir. VIVI PURWANDARI, M.Si , Saharman Gea

## Community Services

2018

Ipteks Bagi Masyarakat

### **Sistem Kalibrasi Massa untuk mendukung pengembangan wisata kuliner di kawasan tempat pelelangan ikan (TPI) Bagan Percut Kabupaten Deli Serdang**

SAHARMAN GEA , DIANA ALEMEN BARUS , PERDINAN SINUHAJI

2023

Ipteks Bagi Masyarakat

### **Penyuluhan, Perbaikan dan Bimbingan Perawatan Anti Petir di GBKP Km 8 Padang Bulan Medan**

SAHARMAN GEA , Dr. KERISTA TARIGAN, M.Eng.Sc. , KURNIA BRAHMANA , CHRISTINE FEBY FEBYOLA. S , WARDAINI PANJAITAN , PINDONTA SURBAKTI

2024

Ipteks Bagi Masyarakat

### **Peningkatan Kemampuan Pembuatan Proposal Penelitian Bagi Dosen PSDKU USU Di Nias Utara**

SAHARMAN GEA

2022

Ipteks Bagi Masyarakat

### **Peningkatan Rendemen Produksi Arang dan Asap Cair pada UMKM Baluse Kanira Nias Utara**

ERNI MISRAN , DIANA CHALIL , SAHARMAN GEA , TAUFIQ BIN NUR

2018

Ipteks Bagi Masyarakat

### **Peningkatan Kualitas Asap Cair melalui penyediaan Tarscrubber pada UMKM santan coco dan coco prima**

SAHARMAN GEA , DIANA ALEMEN BARUS

2022

### **Penguatan Kegiatan Penelitian dan Pengabdian Masyarakat di Universitas**

## Nias Raya Teluk Dalam

HIMSAR AMBARITA , SAHARMAN GEA , ELISA JULIANTI , TAUFIQ BIN NUR

2019

### Peningkatan wawasan karir bagi anak SMA Unggulan di Gunung Sitoli

RIKA ELIANA , SAHARMAN GEA , MAYA SILVI LYDIA , IRVAN

2017

Ipteks Bagi Kewirausahaan

### IbM Industri Kelapa Kering (Dessicated Coconut) dan UKM Santan dan Batok Kelapa

HALIMATUDDAHLIANA , SAHARMAN GEA , ERA YUSRINI

2021

Penelitian Unggulan Perguruan Tinggi

### Pembinaan dan Pelestarian Kesenian dan Kebudayaan Nias Pesisir

WARISMAN SINAGA , SAHARMAN GEA , LESTARI DARA CINTA UTAMI GINTING

2019

Ipteks Bagi Masyarakat

### PENINGKATAN KUALITAS ASAP CAIR MELALUI PENYEDIAAN TARSCRUBBER PADA UMKM SANTAN COCO\_TAHUN KE 2

SAHARMAN GEA , ADITIA WARMAN , DIANA ALEMEN BARUS , ELISA JULIANTI

2023

Ipteks Bagi Masyarakat

### Pelatihan dan Pendampingan Peningkatan Kompetensi Penulisan Karya Ilmiah Bagi Dosen Universitas Prima Kota Medan

SAHARMAN GEA , SYAFRIZAL HELMI SITUMORANG , YENI ABSAH , BEBY KARINA FAWZEEA

2017

### PEMANFAATAN BIOREAKTOR UNTUK PENINGKATAN PRODUKSI NATA DE COCO PADA UKM SANTAN COCO DAN SANTAN COPRO MEDAN

KERISTA SEBAYANG , SAHARMAN GEA , ELISA JULIANTI

2024

Ipteks Bagi Masyarakat

### Peningkatan Kemampuan Penulisan Publikasi Ilmiah bagi Dosen Sekolah Tinggi Agama Islam (STAI) Nias

ISKANDAR ZULKARNAIN , SAHARMAN GEA

2024

Penelitian Dana Lokal Perguruan Tinggi

### Peningkatan Kemampuan Penulisan Publikasi Ilmiah bagi Dosen Sekolah Tinggi Agama Islam (STAI) Nias

ISKANDAR ZULKARNAIN , SAHARMAN GEA , YENI ABSAH , HUMAIZI , FARIDA HANIM , MUNZAIMAH M , MOULITA

2018

### Peningkatan Kualitas Asap Cair melalui Penyediaan Tar Scrubber pada UMKM Santan COCO dan Santan COPRO

SAHARMAN GEA , ADITIA WARMAN , ELISA JULIANTI

2024

Penelitian Tim Pasca Sarjana

### Peningkatan Kemampuan Pembuatan Proposal Penelitian Bagi Dosen PSDKU USU Di Nias Utara

RAHMAWATY , SAHARMAN GEA

## Intellectual Property Rights

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Paten nasional

## **PLASTER NANOPARTIKEL PERAK KITOSAN UNTUK PENYEMBUHAN LUKA EKSISI PADA PENDERITA DIABETES**

YUANDANI , SAHARMAN GEA , POPPY ANJELISA ZAITUN HASIBUAN

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2023

Paten nasional

## **KONVERSI MINYAK GORENG SAWIT BEKAS MENJADI BIOGASOLIN TERKATALISIS NANOKATALIS NiMo/SO<sub>4</sub>-SiO<sub>2</sub> YANG DISINTESIS SECARA HIDROTERMAL**

KARNA WIJAYA , SAHARMAN GEA

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2023

Paten nasional

## **Reaktor Karbonisasi Cerobong Terbalik dan Peralatannya**

SITI UTARI RAHAYU , SAHARMAN GEA

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2023

Paten nasional

## **NANOKATALIS NIKEL TERIMPREGNASI PADA SILIKA TERSULFATASI (Ni/SO<sub>4</sub>-SiO<sub>2</sub>) SECARA REFLUKS UNTUK PRODUKSI BAHAN BAKAR FRAKSI BENSIN DARI LIMBAH PLASTIK LDPE**

SAHARMAN GEA , KARNA WIJAYA

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2023

Paten nasional

## **Pengering Semprot Untuk Pembuatan Serbuk Pati**

AVERROES FAZLUR RAHMAN PILIANG , SAHARMAN GEA

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2023

Paten nasional

## **NANOKATALIS SILIKA MESOPORI TERSULFATASI TERIMPREGNASI LOGAM NIKEL (Ni/SO<sub>4</sub>-SiO<sub>2</sub>) SECARA HIDROTERMAL DAN PERFORMANYA DALAM HYDROTREATMENT MINYAK GORENG SAWIT BEKAS MENJADI BAHAN BAKAR FRAKSI BENSIN**

KARNA WIJAYA , SAHARMAN GEA

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2023

Paten nasional

## **Aparatus Untuk Pembuatan Asap Cair Dengan Pemanfaatan Limbah Batok Kelapa**

SAHARMAN GEA , ELISA JULIANTI , DIANA ALEMEN BARUS , ADITIA WARMAN , SITI UTARI RAHAYU

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2023

Paten nasional

## **Metode untuk Pembuatan Katalis pada Proses Perengkahan Minyak Biji Karet**

SAHARMAN GEA

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