

# Prof. Saharman Gea, S.Si., M.Si. Ph.D

Lecturer of Undergraduate Program in Chemistry Study Program  
Fakultas Matematika Dan Ilmu Pengetahuan Alam  
Universitas Sumatera Utara

✉ s.gea@usu.ac.id

🏢 USU Faculty of Mathematics and Natural Sciences

🌐 [fmipa.usu.ac.id/en/lecturer/saharman-gea](http://fmipa.usu.ac.id/en/lecturer/saharman-gea)

*Saharman Gea S.Si., M.Si. Ph.D was born in Nias on November 10, 1968. He is a Chemistry lecturer at the Universitas Sumatera Utara. He completed his doctoral degree in Chemistry in London in 2011.*

---

## Publications

---

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)/organomontmorillonite 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**

SAHARMAN GEA

2020

Jurnal internasional bereputasi

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

SAHARMAN GEA

2018

Makalah ilmiah

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

SAHARMAN GEA

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

Jurnal internasional bereputasi

## **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**

SAHARMAN GEA

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**

SAHARMAN GEA

2013

Jurnal internasional bereputasi

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

SAHARMAN GEA

2023

Jurnal internasional bereputasi

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

SAHARMAN GEA

2022

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

Makalah ilmiah

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

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

2018

Jurnal nasional

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

SAHARMAN GEA

2018

Jurnal internasional bereputasi

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

SAHARMAN GEA

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  
Makalah ilmiah

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

SAHARMAN GEA

2019  
Makalah ilmiah

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

SAHARMAN GEA

2020  
Jurnal internasional

## **Bacterial cellulose based biosensors**

SAHARMAN GEA

2020  
Jurnal internasional bereputasi

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

SAHARMAN GEA

2018  
Makalah ilmiah

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

SAHARMAN GEA

2015  
Jurnal internasional bereputasi

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

SAHARMAN GEA

2024  
Jurnal internasional bereputasi

## **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**

SAHARMAN GEA

2021  
Jurnal internasional bereputasi

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

SAHARMAN GEA

2021  
Jurnal internasional bereputasi

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

SAHARMAN GEA

2019  
Jurnal nasional

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

SAHARMAN GEA

2019  
Makalah ilmiah

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

SAHARMAN GEA

2021

Jurnal internasional bereputasi

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

SAHARMAN GEA

2019

Jurnal nasional

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

SAHARMAN GEA

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**

SAHARMAN GEA

2020

Jurnal nasional terakreditasi

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

SAHARMAN GEA

2020

Jurnal internasional bereputasi

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

SAHARMAN GEA

2021

Jurnal internasional bereputasi

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

SAHARMAN GEA

2023  
Jurnal internasional bereputasi

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

SAHARMAN GEA

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**

SAHARMAN GEA

2023  
Jurnal internasional bereputasi

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

SAHARMAN GEA

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**

SAHARMAN GEA

2023  
Jurnal internasional bereputasi

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

SAHARMAN GEA

2020  
Jurnal nasional terakreditasi

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

SAHARMAN GEA

2026  
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**

SAHARMAN GEA

2023  
Artikel ilmiah

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

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**

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 , RISKA 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

Prosiding seminar internasional

## 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

---

2018

Jurnal internasional

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

SAHARMAN GEA

---

2015

Jurnal internasional bereputasi

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

SAHARMAN GEA

---

2018

Makalah ilmiah

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

SAHARMAN GEA

---

2020

Jurnal internasional bereputasi

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

SAHARMAN GEA

---

2018

Makalah ilmiah

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

SAHARMAN GEA

---

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

---

2023

Artikel ilmiah

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

SAHARMAN GEA

---

2020

Jurnal internasional bereputasi

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

SAHARMAN GEA

---

2018

Makalah ilmiah

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

SAHARMAN GEA

---

2019

Makalah ilmiah

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

SAHARMAN GEA

---

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**

SAHARMAN GEA

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

2020

Jurnal nasional terakreditasi

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

SAHARMAN GEA

2021

Makalah ilmiah

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

SAHARMAN GEA

2018

Jurnal nasional terakreditasi

## **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

2021

Jurnal internasional bereputasi

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

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

2023

Jurnal internasional bereputasi

### **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

Jurnal internasional bereputasi

### **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

0001

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

Jurnal internasional bereputasi

## **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

Jurnal internasional bereputasi

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

SAHARMAN GEA

2023

Jurnal internasional bereputasi

### **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

2023

Paten nasional

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

YUANDANI , SAHARMAN GEA , POPPY ANJELISA ZAITUN HASIBUAN

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

2023

Paten nasional

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

SITI UTARI RAHAYU , SAHARMAN GEA

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

2023

Paten nasional

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

AVERROES FAZLUR RAHMAN PILIANG , SAHARMAN GEA

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

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

2023

Paten nasional

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

SAHARMAN GEA