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*Crystina Simanjuntak, S.Si., M.Si was born in Palembang on December 24, 1994. She is a Chemistry lecturer at the Universitas Sumatera Utara. She completed her master's degree in Chemistry at the Universitas Sumatera Utara in 2020.*

## Publications

2026

Jurnal internasional bereputasi

### **Synthesis-Controlled Interfacial Engineering of Reduced Graphene Oxide-Transition Metal Oxide Nanocomposites for High-Efficiency Supercapacitors: A Review**

YUSMIATI, CRYSTINA SIMANJUNTAK, KAUSAR DAULAY, Amru Daulay, Lukmanul Hakim Samada, SUSILO SUDARMAN, rahmadina

2026

Jurnal internasional bereputasi

### **Chitosan/NaY zeolite composite: Porous organic-inorganic hybrid material for efficient adsorption of dyes from aqueous solution**

INDAH REVITA SARAGI, SUSILAWATI, SUCI AISYAH AMATURRAHIM, CRYSTINA SIMANJUNTAK, MUHAMMADIN HAMID

2025

Prosiding seminar internasional

### **Thermodynamic Approach to Biosynthesis of Silver Nanoparticles by Using Biomass-Derived Liquid Smoke as a Reductor**

SUCI AISYAH AMATURRAHIM, INDAH REVITA SARAGI, CRYSTINA SIMANJUNTAK

2025

Jurnal nasional terakreditasi

### **Industry and Plantation Collaboration: The Production of Chemical Fertilizer at CV Tabita Jaya and Its Chemical Compositions**

CRYSTINA SIMANJUNTAK, LISNAWATY SIMATUPANG, RIKSON A F SIBURIAN, Dr. KERISTA TARIGAN, M.Eng.Sc.

2025

Jurnal nasional terakreditasi

### **PENGOLAHAN AIR HUJAN SEBAGAI PRODUK AIR BERSIH ALTERNATIF DENGAN TEKNOLOGI PENYARINGAN AIR SEDERHANA**

JULIATI BR TARIGAN, EKO K SITEPU, CRYSTINA SIMANJUNTAK

2025

Jurnal internasional bereputasi

### **Efforts to Accelerate the Breaking of Soursop (*Annona Muricata* L.) Seed Dormancy with Different Concentrations of H<sub>2</sub>SO<sub>4</sub> and Gibberellin**

EFBERTIAS SITORUS, LINCE ROMAULI PANATARIA, CRYSTINA SIMANJUNTAK, MEYLIN KRISTINA SARAGIH

2025

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2025

Jurnal internasional bereputasi

## **Facile synthesis of nano-Si/graphite composites from rice husk for high performance lithium-ion battery anodes**

CRYSTINA SIMANJUNTAK , ARWADI SINURAYA , SABARMIN PERANGINANGIN , SUCI AISYAH AMATURRAHIM , INDAH REVITA SARAGI , Amru Daulay

2024

Jurnal nasional terakreditasi

## **PENINGKATAN KAPASITAS DAN KUALITAS PRODUK ARANG TEMPURUNG KELAPA MELALUI PELATIHAN SDM UMKM USAHA ARANG BATOK DI DESA PATUMBAK**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN , Dr. KERISTA TARIGAN, M.Eng.Sc. , LISNAWATY SIMATUPANG

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## **Structure and optical properties of Fe<sub>2</sub>TiO<sub>5</sub>/Ag/C nanocomposites as photocatalyst materials**

INDAH REVITA SARAGI , SUCI AISYAH AMATURRAHIM , SAHARMAN GEA , CRYSTINA SIMANJUNTAK , Boy Attaurrazaq

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## **Increasing the Economic Value of Hydrogel as an Alternative Planting Media at Madrasah Aliyah Swasta Muhammadiyah Sidomulyo**

MUHAMMADIN HAMID , CRYSTINA SIMANJUNTAK , MARTHA RIANNA , INDAH REVITA SARAGI , SUCI AISYAH AMATURRAHIM

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## **Solvothermal synthesized N-S doped carbon dots derived from cavendish banana peel (*Musa paradisiaca*) for detection of Fe(III) and Pb(II)**

CRYSTINA SIMANJUNTAK , INDAH REVITA SARAGI , MUHAMMADIN HAMID , SYAHRUL HUMAIDI , TULUS IKHSAN NASUTION

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## **CONDUCTIVITY ANALYSIS OF Cu/N-GRAPHENE AND Ni/N-GRAPHENE AS ELECTRODES ON PRIMARY BATTERY ANODES**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN , Amanda Jiamin

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## **The effectiveness of activated carbon from nutmeg shell in reducing ammonia (NH<sub>3</sub>) levels in fish pond water**

INDAH REVITA SARAGI , Isnaeni , MUHAMMADIN HAMID , CRYSTINA SIMANJUNTAK , SYAHRUL HUMAIDI

2023

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## **Coconut waste to green nanomaterial: Large scale synthesis of N-doped graphene nano sheets**

Alfred Ling Yoong Tok , Ronn Goei , Suriati Paiman , Dr. KERISTA TARIGAN, M.Eng.Sc. , Prof. Dr. Yatimah binti Alias, Ph.D , CEPI KURNIAWAN , ISA ANSHORI , RIKSON A F SIBURIAN , CRYSTINA SIMANJUNTAK

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## **Distribution model of Iron (Fe) on Fe/Graphene Nano Sheets**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN

2023

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## **The New Materials for Battery Electrode Prototypes**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN

2022

Buku referensi

## **Aplikasi Grafena Sebagai Elektroda Baterai**

MINTO SUPENO , HERLINC SIHOTANG , CRYSTINA SIMANJUNTAK , FIRMAN SEBAYANG , Dr. KERISTA TARIGAN, M.Eng.Sc. , RIKSON A F SIBURIAN

2021

Jurnal internasional bereputasi

## **The New Material Battery Based on Mg/C- $\pi$**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN , LISNAWATY SIMATUPANG

2021

Prosiding seminar internasional

## **Distribution and risk assessment of natural radioactive elements in volcanic ashes, cold lava, river waters due to volcanic eruption of Mount Sinabung**

CRYSTINA SIMANJUNTAK , SAUR LUMBANRAJA , HARLEM MARPAUNG

2021

Prosiding seminar internasional

## **Performance of electrodes Mg/Graphene nanosheet (GNS) and Mg/N-Graphene nanosheet (N-GNS) as anode of battery**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN

2021

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## **The Loading Effect of Pt Clusters on Pt/graphene Nano Sheets Catalysts**

Dr. KERISTA TARIGAN, M.Eng.Sc. , KERISTA SEBAYANG , CRYSTINA SIMANJUNTAK , MINTO SUPENO , RIKSON A F SIBURIAN

2020

Jurnal internasional bereputasi

## **Facile and benign method to produce large scale graphene nano sheets**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN , MINTO SUPENO

2020

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## **Aplikasi Limbah Padat Kelapa Menjadi Grafena Sebagai Elektroda Alternatif Pada Sel Baterai Primer**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN

2020

Jurnal internasional bereputasi

## **Properties of Mg/graphite and Mg/graphene as cathode electrode on primary cell battery**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN , HARLEM MARPAUNG , TAMRIN

2019

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## **Quick detection of sabbles by using marquis treatment**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN

2019  
Jurnal nasional terakreditasi

## **Application of coconut battery waste to graphic as an alternative electrode on primary battery cells**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN

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2019  
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## **Air Quality Monitoring of Kalabahi-Alor's Seaport-East of Nusa Tenggara**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN

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2019  
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## **Mangan Coated N-Graphene for Good Performance Electrode in Primary Battery Anode**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN

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## **Formation Process of Graphene Nano Sheets**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN

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2019  
Prosiding seminar internasional

## **Nanometers Formation Model of Iron (Fe) and Magnesium (Mg) on Graphene Nano Sheets**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN

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2018  
Jurnal internasional bereputasi

## **Facile method to synthesize N-graphene nano sheets**

ANDRIAYANI , CRYSTINA SIMANJUNTAK , SAUR LUMBANRAJA , RIKSON A F SIBURIAN , SABARMIN PERANGINANGIN , MINTO SUPENO , NURHAIDA PASARIBU , HELMINA BR SEMBIRING , HERLINCE SIHOTANG

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2018  
Jurnal nasional

## **Sosialisasi Penjernihan Air Baku Dengan Menggunakan Elektrokoagulasi Di SMP & SMA Dr. Wahidin Sudirohusodo**

CRYSTINA SIMANJUNTAK , HARLEM MARPAUNG , RIKSON A F SIBURIAN

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2018  
Prosiding seminar internasional

## **Analysis and risk assessment of natural radioactivity elements in coal wastes from Medan industrial area**

CRYSTINA SIMANJUNTAK , HARLEM MARPAUNG , ZUL ALFIAN , SAUR LUMBANRAJA

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2018  
Prosiding seminar internasional

## **Detection and identification of morphine in blood of male white rats (*rattus norvegicus*) by ultraviolet-visible spectrophotometry**

CRYSTINA SIMANJUNTAK , ZUL ALFIAN , MUHAMMAD TAUFIK , HARLEM MARPAUNG

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2018  
Prosiding seminar internasional

## **Model of formation graphene from graphite with ammonia**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN

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2017  
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## **New route to synthesize of graphene nano sheets**

RIKSON A F SIBURIAN , CRYSTINA SIMANJUNTAK , SAUR LUMBANRAJA , HERLINCE SIHOTANG , MINTO SUPENO

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2026  
Jurnal internasional bereputasi

## **The New Materials for Battery Electrode Prototypes. Materials 2023, 16, 555**

CRYSTINA SIMANJUNTAK

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## Researches

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Penelitian Dosen Pemula

### **Facile synthesis of nano-Si/graphite composites from rice husk for high performance lithium-ion battery anodes**

CRYSTINA SIMANJUNTAK , SABARMIN PERANGINANGIN

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2024  
Penelitian Dosen Pemula

### **Sintesis Komposit Nano Silikon Grafit (Si/C) Dari Sekam Padi Untuk Baterai Ion Litium Berkinerja Tinggi**

CRYSTINA SIMANJUNTAK , SABARMIN PERANGINANGIN

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2024  
Kerjasama Luar Negeri dan Publikasi Internasional

### **KINERJA ELEKTRODA NEODIMIUM (Nd)/GRAFENA DARI CANGKANG KEMIRI (Aleurites moluccanus) SEBAGAI SUPERKAPASITOR**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN , Dr. KERISTA TARIGAN, M.Eng.Sc.

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Penelitian Dosen Pemula

### **Sintesis Komposit NaY Zeolite Termodifikasi Derivative Cellulose sebagai Adsorben Limbah Zat Warna**

SUSILAWATI , INDAH REVITA SARAGI , CRYSTINA SIMANJUNTAK

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2023  
Penelitian Kerjasama Antar Perguruan Tinggi

### **APLIKASI GRAFENA DAN N-GRAFENA SEBAGAI MATERIAL PENGHANTAR PANAS, BIO SENSOR, DAN KATALIS**

CRYSTINA SIMANJUNTAK , Dr. KERISTA TARIGAN, M.Eng.Sc.

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2023  
Penelitian Dana Lokal Perguruan Tinggi

### **N-S-CDs Berbasis Kulit Pisang Cavendish Untuk Deteksi Logam Fe dan Hg**

MUHAMMADIN HAMID , INDAH REVITA SARAGI , CRYSTINA SIMANJUNTAK , SYAHRUL HUMAIDI , Isnaeni

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2023  
Penelitian Unggulan Perguruan Tinggi

### **Green Sintesis Nanokomposit Ag-C/Fe<sub>2</sub>TiO<sub>5</sub> sebagai Material Fotokatalis untuk Mendegradasi Limbah Cair Industry Pulp dan Kertas**

INDAH REVITA SARAGI , CRYSTINA SIMANJUNTAK , SUCI AISYAH AMATURRAHIM

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2023  
Penelitian Kompetensi

### **Green Sintesis Nanokomposit Ag-C/Fe<sub>2</sub>TiO<sub>5</sub> sebagai Material Fotokatalis untuk Mendegradasi Limbah Cair Industry Pulp dan Kertas**

CRYSTINA SIMANJUNTAK

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2023  
Penelitian Kerjasama Antar Perguruan Tinggi

### **PEMBENTUKAN KLASSTER KEILMUAN NANOMATERIAL**

AGUNG PRATAMA , CRYSTINA SIMANJUNTAK , HENNI CINTYA

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2022

### **Aplikasi Grafena dan N-Grafena dari Kelapa (Cocos nucifera) Sebagai Material Penghantar Panas**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN , Dr. KERISTA TARIGAN, M.Eng.Sc.

2022

## **Aplikasi Grafena dan N-Grafena dari Kelapa (Cocos nucifera) sebagai Material Penghantar Panas**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN , Dr. KERISTA TARIGAN, M.Eng.Sc.

2022

Penelitian Dosen Pemula

## **Sintesis Nanopartikel Perak dengan Asap Cair Hasil Pirolisis Tempurung Kelapa sebagai Reduktor Terbaru**

INDAH REVITA SARAGI , CRYSTINA SIMANJUNTAK , SUCI AISYAH AMATURRAHIM

2019

Penelitian Fundamental

## **KINERJA PROTOTIPE BATERAI PRIMER (CU/GRAFENA//NH<sub>4</sub>CL-MNO<sub>2</sub>//C-Î (GRAFIT, GRAFENA, N-GRAFENA)**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN , Suriati Paiman , Yatimah Alias , Alfred Iing Yoong Tok , Lin Jing , Ronn Goei

## **Community Services**

2025

Ipteks Bagi Masyarakat

## **PENINGKATAN KAPASITAS DAN KUALITAS PRODUKSI PUPUK PELENGKAP CAIR MELALUI PELATIHAN SDM DAN PEMBUATAN REAKTOR CV TABITA JAYA DI MEDAN**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN , Dr. KERISTA TARIGAN, M.Eng.Sc.

2023

Ipteks Bagi Masyarakat

## **Peningkatan Kapasitas dan Kualitas Produk Arang Tempurung Kelapa melalui Pelatihan SDM UMKM Usaha Arang Batok di Desa Patumbak**

CRYSTINA SIMANJUNTAK , RIKSON A F SIBURIAN , LISNAWATY SIMATUPANG , Dr. KERISTA TARIGAN, M.Eng.Sc.

2023

Ipteks Bagi Masyarakat

## **SOSIALISASI DAN PELATIHAN PEMBUATAN ECO-ENZYM MULTIFUNGSI DARI SAMPAH ORGANIK DI SMA NEGERI 1 NAMORAMBE, DELI SERDANG MENUJU INDONESIA ZERO WASTE**

MUHAMMADIN HAMID , SUSILAWATI , INDAH REVITA SARAGI , CRYSTINA SIMANJUNTAK , SUCI AISYAH AMATURRAHIM

2023

Ipteks Bagi Masyarakat

## **Sosialisasi dan Pelatihan Pembuatan Eco-Enzyme Multifungsi dari Sampah Organik di SMA Negeri 1 Namorambe, Deli Serdang menuju Indonesia Zero Waste**

CRYSTINA SIMANJUNTAK

2022

Ipteks Bagi Masyarakat

## **PENINGKATAN NILAI EKONOMIS HIDROGEL SEBAGAI MEDIA TANAM ALTERNATIF DI MADRASAH ALIYAH SWASTA MUHAMMADIYAH SIDOMULYO**

MUHAMMADIN HAMID , CRYSTINA SIMANJUNTAK , MARTHA RIANNA