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*Dr. Andriyani, S.Pd., M.Si. was born in Takengon on March 5, 1969, and is a lecturer in Chemistry at Universitas Sumatera Utara. She completed a Doctoral Program in Chemistry at USU in 2012.*

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## Publications

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2025

Prosiding seminar internasional

### **Characterization of black and white rice husk ash as silica sources**

RIZKY KURNIAWAN , Hadi Kurniawan , ANDRIAYANI

2025

Jurnal internasional bereputasi

### **Silicon nanoparticle synthesis from rice husk ash with the hydrothermal method for the anode in lithium-ion batteries**

AGUNG PRATAMA , Nofrijon Bin Imam Sofyan , Amru Daulay , ANDRIAYANI

2025

Jurnal internasional bereputasi

### **Sustainable synthesis of TiO<sub>2</sub> nanoparticles from gambier leaf extract for enhanced DSSC photocurrent response**

ANDRIAYANI , Nofrijon Bin Imam Sofyan , YETRIA RILDA , AKHMAD HERMAN YUWONO , DONANTA DHANESWARA , Fiona Angellinnov , Mouna M'rad , Aga Ridhova

2025

Book chapter internasional

### **A synthesis of graphene oxide/bacterial cellulose nanocomposites**

ANDRIAYANI

2025

Jurnal internasional bereputasi

### **Peat Water Purification using Pahae Natural Zeolite and Activated Carbon Derived from Candlenut Shell (*Aleurites moluccana*)**

SUSILAWATI , ERNA FRIDA , PERDINAN SINUHAJI , ANDRIAYANI

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**

ANDRIAYANI

2024

Prosiding seminar internasional

### **Characterization of Adsorbents Based on Pahae Natural Zeolite and Candlenut Shell Activated Carbon for Peat Water Purification**

SUSILAWATI , ERNA FRIDA , ANDRIAYANI , PERDINAN SINUHAJI

2024

Jurnal nasional terakreditasi

# Karakterisasi Silikon dari Sekam Padi Terdoping dengan Kobalt: Analisis Struktur dan Sifat Magnetoelektrik

ANDRIAYANI

2024

Jurnal nasional terakreditasi

## Functionalization Mesoporous Silica using Aminopropyltriethoxysilane (APTES) as Adsorbent for Removal Ni (II) from Aqueous Solution

ANDRIAYANI

2024

Jurnal internasional bereputasi

## Synthesis and application of nano-silicon prepared from rice husk with the hydrothermal method and its use for anode lithium-ion batteries

AMIR HAMZAH SIREGAR , SAUR LUMBANRAJA , Amru Daulay , SUSILO SUDARMAN , ANDRIAYANI

2023

Jurnal internasional bereputasi

## Synthesis of silicon nanoparticles with various additions of inert salt as scavenger agent during reduction by the magnesiothermic method as anode lithium-ion batteries

AMIR HAMZAH SIREGAR , SAUR LUMBANRAJA , Amru Daulay , SUSILO SUDARMAN , ANDRIAYANI

2023

Prosiding seminar internasional

## Calcium Impregnation in Mesoporous Silica Made using Methyl Ricinoleate as Template and Its Application as Transesterification Catalyst

ANDRIAYANI

2023

Prosiding seminar nasional

## Analisis Kualitatif Nanosilikon dari Pasir Kuarsa

ANDRIAYANI

2023

Buku referensi

## Mesoporisilika: Sintesis, Karakterisasi Dan Aplikasi

AMRU DAULAY , ANDRIAYANI

2023

Jurnal internasional bereputasi

## Synthesis of mesoporous silica with ricinoleic methyl ester (Ricinus communis) as a template for adsorption copper (II) with optimizing Box-Behnken design

ANDRIAYANI

2023

Jurnal internasional bereputasi

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

ANDRIAYANI

2023

Jurnal internasional bereputasi

## Stability of mesoporous silica using ricinoleic methyl ester as a template with the addition of HCl and application of Cd<sup>2+</sup> adsorption optimized by Box-Behnken design

ANDRIAYANI

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

ANDRIAYANI

2022

Jurnal internasional bereputasi

## **SYNTHESIS OF SILICON NANOPARTICLES MODIFIED POLYESTER AS MATERIAL ACTIVE ELECTRODE ON A SECONDARY CELL BATTERY**

DARWIN YUNUS NASUTION , YUGIA MUIS , ANDRIAYANI

2022

Prosiding seminar internasional

## **Optical Study of Graphene Quantum Dots from Sawahlunto Coal Graphite**

SAHARMAN GEA , ANDRIAYANI , MAHYUNI HARAHAP , DELLYANSYAH

2022

Prosiding seminar internasional

## **Effect of Variation HCl Concentration on Natural Zeolite Dealumination to The Content of Liquid Smoke Compounds by Hydrodeoxygenation Process**

SAHARMAN GEA , ANDRIAYANI , JUNIFA LAYLA SIHOMBING , AHMAD NASIR PULUNGAN , REKA MUSTIKA SARI , ABDUL MALIK , RACHMAD FAUZI , BOY ATTAURRAZQA

2021

Jurnal internasional bereputasi

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

ANDRIAYANI

2021

Jurnal internasional bereputasi

## **Chemical reduction of silica into silicon from extracted quartz sand using sodium hydroxide and hydrochloric acid solutions**

ANDRIAYANI

2021

Jurnal internasional bereputasi

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

ANDRIAYANI

2020

Jurnal nasional terakreditasi

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

ANDRIAYANI

2020

Jurnal internasional bereputasi

## **The stabilization of liquid smoke through hydrodeoxygenation over nickel catalyst loaded on sarulla natural zeolite**

ANDRIAYANI

2020

Jurnal nasional terakreditasi

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

ANDRIAYANI

2020

Jurnal nasional terakreditasi

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

ANDRIAYANI

2020

Jurnal internasional bereputasi

## **The effects of mass variation potassium chloride (KCl) on characteristics of nanosilicone from natural sand through the magnesiothermic method**

ANDRIAYANI

2020

Jurnal nasional terakreditasi

## **Teacher Upgrading Skill in Preparing Materials and Examination Based on Images in Sibolga City**

ANDRIAYANI

2019

Jurnal nasional terakreditasi

## **The Construction of oven designed by heat exchanger in drying porang at SME Coco Prima**

ANDRIAYANI , KERISTA SEBAYANG , HERLI GINTING

2018

Artikel ilmiah

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

ANDRIAYANI , SAHARMAN GEA , MARPONGAHTUN

2018

Jurnal internasional bereputasi

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

SAHARMAN GEA , ANDRIAYANI , DARWIN YUNUS NASUTION

2018

Jurnal internasional bereputasi

## **The performance of graphite/n-graphene and graphene/n-graphene as electrode in primary cell batteries**

RIKSON A F SIBURIAN , ANDRIAYANI

2015

Jurnal internasional bereputasi

## **optimization of silicon extraction from Tanjung Tiram Asahan natural sand through magnesiothermic reduction**

ANDRIAYANI

2014

Jurnal internasional

## **Increased of Purity Silicon from Natural Sand with Variation of Heating Time through Magnesiotermal**

ANDRIAYANI , HERLINCE SIHOTANG , SAUR LUMBANRAJA

2013

Jurnal internasional

## **Synthesis of mesoporous silica from tetraethylorthosilicate by using sodium ricinoleic as a template and 3-aminopropyltrimethoxysilane as co-structure directing agent with volume variation of hydrochloric acid 0.1 M**

ANDRIAYANI

2026

Prosiding seminar internasional

## **The effect concentration of tetraethylorthosilicate and variation HCl 0.1 M for synthesis mesoporous silica using oleic acid as template and 3-aminopropyltrimethoxysilane as co-structure directing agent**

ANDRIAYANI

2026

Prosiding seminar internasional

## **Editorial Board and Editor Name: 2nd International Conference on Chemical Science and Technology Innovation (ICOCSTI)**

ANDRIAYANI

2026

Jurnal internasional

## **Synthesis of Mesoporous Silica from Tetraethylorthosilicate by Using Sodium Ricinoleic as a Template and 3-Aminopropyltrimethoxysilane as Co-Structure Directing Agent**

## Directing Agent withÂ &#8230;

ANDRIAYANI

2026

Prosiding seminar internasional

### **Preface: 2nd International Conference on Chemical Science and Technology Innovation (ICOCSTI)**

ANDRIAYANI

## Researches

2025

Penelitian Kompetensi

### **Pengembangan Energi Storage Baterai Ion Litium Nanosilikon Sekam Padi Hidrotermal Melalui Aminasi Permukaan dan Bimetalik Sistem Zeolitic Imidazolate Frameworks (ZIF)**

MINTO SUPENO , ANDRIAYANI , AMIR HAMZAH SIREGAR , Nofrijon Bin Imam Sofyan , ANDRE ADITYA GINTING

2025

Penelitian Hibah Bersaing

### **Pengembangan Nanokomposit Zeolit Imidazole Framework-Silika (ZIF@SiO<sub>2</sub>) Sebagai Adsorben Untuk Recovery Unsur-Unsur Tanah Jarang (REE) Cerium, Lanthanum dan Neodymium**

MINTO SUPENO , AGUNG PRATAMA , ANDRIAYANI , AMIR HAMZAH SIREGAR , ANDRE ADITYA GINTING , Assoc. Prof. Dr. Wan Jeffrey Basirun

2023

### **FILTER AIR GAMBUT BERBASIS ZEOLIT ALAM PAHAE DAN KARBON AKTIF CANGKANG KEMIRI UNTUK PENGOLAHAN AIR GAMBUT MENJADI AIR BERSIH**

SUSILAWATI , ANDRIAYANI , ERNA FRIDA , PERDINAN SINUHAJI

2023

Penelitian Kerjasama Antar Perguruan Tinggi

### **Modifikasi Nanosilikon dari Sekam Padi Menggunakan Natrium Alginat Termodifikasi Dopamin untuk Meningkatkan Kinerja Anoda Litium Ion Baterai**

AGUNG PRATAMA , ANDRIAYANI , SUSILO SUDARMAN , RIZKY KURNIAWAN , THERESIA ARITONANG , MIA LESTARI SINAGA , KASIH JESIKA SIPAYUNG

2020

Penelitian Unggulan Perguruan Tinggi

### **Modifikasi Carbon-dots dari Selulosa Nanokristal Tandan Kosong Sawit sebagai Prekursor dengan Metode Pirolisis**

ANDRIAYANI

2014

Penelitian Fundamental

### **Optimalisasi Isolasi Silikon Dari Pasir alam (quartz sand) Secara Magnesiotermal**

HERLINCE SIHOTANG , ANDRIAYANI , Nofrijon Bin Imam Sofyan

## Community Services

2021

### **Peningkatan kemampuan guru-guru di Kota Sibolga dalam membuat bahan ajar dan soal ujian berbasis gambar**

ANDRIAYANI

2014

## Intellectual Property Rights

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2023

Hasil penelitian/pemikiran yang tidak dipublikasikan

**Skema Penelitian Terapan Unggulan Perguruan Tinggi Nomor: 186/UN5. 2.3. 1/PPM/KP-DRPM/2021 dengan Judul Penelitian: Optimasi Grafting dan Impregnasi Material Mesopori silika**

ANDRIAYANI

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2020

Paten nasional

**Proses ekstraksi pasir alam untuk mendapatkan silikon secara magnesiothermal**

SAUR LUMBANRAJA , ANDRIAYANI , HERLINCE SIHOTANG

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