

Siti Utari Rahayu, S.Si., M.Sc., Ph.D.

Dosen Program Studi S1 Fisika
Fakultas Matematika Dan Ilmu Pengetahuan Alam
Universitas Sumatera Utara

✉ siti.utari@usu.ac.id

🏢 Fakultas Matematika dan Ilmu Pengetahuan Alam

🌐 fmipa.usu.ac.id/id/dosen/siti-utari-rahayu

Siti Utari Rahayu, S.Si., M.Sc dilahirkan di Medan pada tanggal 29 September 1988. Beliau merupakan seorang dosen Fisika di Universitas Sumatera Utara. Beliau menyelesaikan pendidikan terakhirnya yakni Master of Science pada tahun 2016.

Publications

2026

Jurnal internasional bereputasi

Bandgap-tunable ternary $CdxZn_{1-x}Se$ nanocrystals for high-efficiency sensitized solar cells

SITI UTARI RAHAYU , REKSI M SILABAN , Wen-Tzu Chiang , Ming-Way Lee , Patsorn Boon-On , Jen-Bin Shi

2025

Jurnal internasional bereputasi

Round-Robin Interlaboratory Comparison of Large-Area Organic Thin-Film and Perovskite Solar Cells

Chia-Yuan Chen , Ming-Way Lee , SITI UTARI RAHAYU

2025

Jurnal internasional bereputasi

Synthesis of Nano Carbon of Potatoes as Electrode for Environmentally Friendly Supercapacitor

DR. INDRI DAYANA S SI, M.Si , HABIB SATRIA , MORANAIN MUNGKIN , DADAN RAMDAN , MUHAMMAD FADLAN SIREGAR , SITI UTARI RAHAYU , JUNAIDI

2025

Jurnal nasional terakreditasi

An In-depth Study of Relation Between Band Gap Energy and Lattice Constant for Cubic Phase $LiSnX_3$ (X= F, Cl, Br, and I) Perosvkite

SITI UTARI RAHAYU , JUNAINA SAHPUTRI SAGALA , RUSSELL ONG

2025

Jurnal nasional terakreditasi

An In-depth Study of Relation Between Band Gap Energy and Lattice Constant for Cubic Phase $LiSnX_3$ (X = F, Cl, Br, and I) Perosvkite

SITI UTARI RAHAYU , Russell Ong , Junaina Sahputri Sagala

2024

Jurnal internasional bereputasi

DEVELOPMENT OF POTATO NANO CARBON AS ELECTRODE FOR SUPERCAPACITORS ACHIEVES GREEN-SUSTAINABLE DEVELOPMENT GOALS

SITI UTARI RAHAYU , MARTHA RIANNA

2024

Jurnal internasional bereputasi

Enhanced Photovoltaic Performance of Heavy-Metal-Free $AgInS_2$ Quantum Dot-Sensitized Solar Cells Using a Facile SILAR Method

2024

Prosiding seminar internasional

Highly Efficient CdSe Quantum Dot-Sensitized Solar Cells via a Facile SILAR Method: Dependence of the SILAR Cycles on Optical Properties and Photovoltaic Performance

Ming-Way Lee , SITI UTARI RAHAYU

2023

Jurnal internasional bereputasi

AgInS₂/CdSe type-II core/shell quantum dot-sensitized solar cells with an efficiency of 11.75% under 0.1 sun

SITI UTARI RAHAYU , Yu-Rou Wang , Jen-Bin Shi , Ming-Way Lee

2023

Jurnal internasional bereputasi

Ternary alloyed Ba_xCd_{1-x}S nanocrystals: Synthesis, bandgap tuning, and photovoltaic performance

SITI UTARI RAHAYU , Yu-Lun Tai , Patsorn Boon-On , Yu-Rou Wang , Ming-Way Lee

2023

Prosiding seminar internasional

Characterization of physical of filters based on pahae natural zeolite and active charcoal of cocoa rind

YUAN ALFINSYAH SIHOMBING , SUSILAWATI , SITI UTARI RAHAYU

2023

Prosiding seminar internasional

The influence of sulfuric acid crosslinked on mechanical and chemical properties of chitosan/Pahae natural zeolite membrane

YUAN ALFINSYAH SIHOMBING , SUSILAWATI , SITI UTARI RAHAYU

2023

Prosiding seminar internasional

Zeolite filter-activated charcoal cocoa bark as ammonium absorbing material in greywater waste

YUAN ALFINSYAH SIHOMBING , SUSILAWATI , SITI UTARI RAHAYU

2023

Prosiding seminar internasional

Electrochemical performance of sodium titanate nanorods for sodium-ion battery anode applications

SITI UTARI RAHAYU , ZIKRI NOER

2023

Jurnal internasional bereputasi

Effect of reduced graphene oxide (rGO) in chitosan/Pahae natural zeolite-based polymer electrolyte membranes for direct methanol fuel cell (DMFC) applications

YUAN ALFINSYAH SIHOMBING , SITI UTARI RAHAYU , SUSILAWATI

2023

Jurnal internasional bereputasi

Filter material based on zeolite-activated charcoal from cocoa shells as ammonium adsorbent in greywater treatment

SUSILAWATI , SITI UTARI RAHAYU , YUAN ALFINSYAH SIHOMBING

2022

Jurnal internasional bereputasi

Rare-earth-incorporated ternary CexCd_{1-x}S quantum dot-sensitized solar cells

SITI UTARI RAHAYU

2022

Jurnal internasional bereputasi

The Effectiveness of Pahae Natural Zeolite-Cocoa Shell Activated Charcoal Nanofilter as a Water Adsorber in Bioethanol Purification

SUSILAWATI , YUAN ALFINSYAH SIHOMBING , SITI UTARI RAHAYU

2022

Jurnal internasional bereputasi

FABRICATION AND MODIFICATION OF CHITOSAN/PAHAE NATURAL ZEOLITE/REDUCED GRAPHENE OXIDE (CS/PNZ/rGO)â€”BASED POLYMER ELECTROLYTE MEMBRANES

YUAN ALFINSYAH SIHOMBING , SUSILAWATI , SITI UTARI RAHAYU

2022

Monograf

Aplikasi Semikonduktor Wittichenite (Cu₃BiS₃) pada Sel Surya Tipe Quantum Dot-Sensitized Solar Cells (QD-SSCs)

SITI UTARI RAHAYU

2021

Monograf

Semikonduktor Natrium Antimon Sulfat (NaSbS₂) Sebagai Material Penyerap Cahaya Pada Quantum Dot-Sensitized Solar Cells (QDSSCs)

SITI UTARI RAHAYU

2021

Prosiding seminar internasional

NodeMCU-Based Automatic Motorcycle Tire Pump Monitored by Android Smartphone

SITI UTARI RAHAYU

2021

Prosiding seminar internasional

Prototype of Temperature Monitoring System for BTS Shelter using Android Smartphone

SITI UTARI RAHAYU

2021

Jurnal internasional bereputasi

THE COMPARISON OF OPAQUE TiO₂ AND TRANSPARENT TiO₂ ON THE PERFORMANCE OF AgSbS₂â€”SENSITIZED SOLAR CELL PREPARED BY SOLUTION PROCESSING

KERISTA SEBAYANG , SITI UTARI RAHAYU , HERLI GINTING , SAHARMAN GEA , ADITIA WARMAN

2021

Prosiding seminar internasional

Investigation of chaos behaviour on damped and driven nonlinear simple pendulum motion simulated by mathematica

SITI UTARI RAHAYU , Dr. KERISTA TARIGAN, M.Eng.Sc. , TAKDIR TAMBA

2020

Jurnal internasional bereputasi

FABRICATION OF CHITOSAN/NATURAL ZEOLITE COMPOSITE-BASED POLYMER ELECTROLYTE MEMBRANES

YUAN ALFINSYAH SIHOMBING , SUSILAWATI , SITI UTARI RAHAYU

2020

Prosiding seminar internasional

Papaya (Carica papaya L.) leaves extract as an inhibitor for brass in H₂SO₄ solution

SITI UTARI RAHAYU

2020

Prosiding seminar internasional

The investigation of chemically deposited Cu₃BiS₃ into mesoporous TiO₂ films for the application of semiconductor-sensitized solar cells

SITI UTARI RAHAYU

2018

Prosiding seminar internasional

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

SITI UTARI RAHAYU

2018

Prosiding seminar internasional

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

SITI UTARI RAHAYU

2018

Jurnal internasional bereputasi

Eco-Friendly NaSbS₂Quantum Dot-Sensitized Solar Cells

SITI UTARI RAHAYU

2016

Jurnal internasional bereputasi

Sodium antimony sulfide (NaSbS₂): Turning an unexpected impurity into a promising, environmentally friendly novel solar absorber material

SITI UTARI RAHAYU

Researches

2022

Penelitian Unggulan Perguruan Tinggi

Pengaruh Komposisi Reduced Grafena Oksida (rGO) dan Konsentrasi Methanol Terhadap Membran Polimer Elektrolit Kitosan-Zeolit Alam Pahae untuk Aplikasi Direct Methanol Fuel Cells (DMFC)

SUSILAWATI , YUAN ALFINSYAH SIHOMBING , SITI UTARI RAHAYU , MASNITA D SITUMEANG

2021

Penelitian Unggulan Perguruan Tinggi

Pengaruh Komposisi Reduced Grafena Oksida (rGO) dan Konsentrasi Methanol Terhadap Membran Polimer Elektrolit Kitosan-Zeolit Alam Pahae untuk Aplikasi Direct Methanol Fuel Cells (DMFC)

SUSILAWATI , YUAN ALFINSYAH SIHOMBING , SITI UTARI RAHAYU , WINA RAHMADANI RANGKUTI

2021

Nanofilter Zeolit-Arang Aktif Kulit Kakao Sebagai Adsorber Air Pada Pemurnian Bioethanol

SUSILAWATI , YUAN ALFINSYAH SIHOMBING , SITI UTARI RAHAYU

Community Services

2021

Ipteks Bagi Masyarakat

Rumah Kompos SMAN Bangun Purba Sebagai Tempat Produksi Pupuk Berbahan Sampah Daun Kering

SUSILAWATI , YUAN ALFINSYAH SIHOMBING , SITI LATIFAH , SITI UTARI RAHAYU

Intellectual Property Rights

2023

Hak cipta nasional

Aplikasi Semikonduktor Wittichenite (Cu_3BiS_3) pada Sel Surya Tipe Quantum Dot-Sensitized Solar Cells (QD-SSCs)

SITI UTARI RAHAYU

2021

Hak cipta nasional

Semikonduktor Natrium Antimon Sulfat (NaSbS_2) Sebagai Material Penyerap Cahaya Pada Quantum Dot-Sensitized Solar Cells (QDSSCs)

SITI UTARI RAHAYU
